

"Digital Futures": A Case Study in a Faculty of Art & Design

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Preface

This report, "Digital Futures": A Case Study in a Faculty of Art & Design", has been prepared by Dr Barry Smith following his Lecture Series "Digital Futures" delivered to undergraduate students from the Department of Visual and Performing Arts in the Bonington Lecture Theatre, The Nottingham Trent University between September 1997 and February 1998. Dr Smith is Director of the Live Art Archive at the University and a Principal Lecturer in the Department of Visual and Performing Arts, Faculty of Art & Design.

The Report is structured into three main sections:

1. Introduction: the wider context
2. 'Digital Futures': the lecture series
3. Statements on Lecture Theatre I.T. provision from management, academic staff, technical staff and students.

These main sections are followed by a fourth section which extracts various 'observations' that were made during the course of the Lecture Series and/or drafting of this Report which may be worthy of further consideration. The term 'Observations' has been preferred to the term 'Recommendations' that conventionally concludes Reports on the basis that 'A Case Study' (which by definition is the equivalent of a survey limited to one!) is not really in a position to 'recommend' action but may raise issues of relevance to the ongoing debate, in this instance about I.T. provision in Lecture Theatres. These 'observations' are italicised in the main text and collated together (sometimes in a slightly edited version) in this fourth section for convenience.

Finally a fifth section comprises Appendices giving copies of original texts and sources cited in this report.

Thus:

4. Observations: statements extracted from the main sections.
5. Appendices: copies of items cited in the main sections.

Contents

1	INTRODUCTION: the context	5
2	The DIGITAL FUTURES Lecture Series	6
2.1	2.1 The Module: Date and Times	6
2.2	2.2 Pre-Lecture Series preparation	6
2.3	2.3 Survey of General Levels of I.T. familiarity/experience/skills/knowledge	7
2.4	2.4 Sequence and use of IT throughout the Lecture Series	8
2.5	2.5 Problems encountered and overcome	10
2.6	2.6 A problem for the future: legal issues!	11
2.7	2.7 E-mail in a supporting role	12
3	Statements on Lecture Theatre I.T. provision from management, academic staff, technical staff and students	17
3.1	3.1 University Management:	17
3.2	3.2 Faculty of Art & Design: Department of Visual and Performing Arts	20
3.3	3.3 Students attending the course	23
4	Observations.....	26
5	Appendices.....	28

1 INTRODUCTION: the context

- 1.1 The intention by the author of this Case Study to undertake a Lecture Series entitled "Digital Futures: from Tools to Robots and Aliens" was determined, and to a large extent 'prepared', before it was chosen as 'an AGOCC Case Study'. In that sense at least the selection of the Lecture Series as a Case Study was one of those 'happy accidents' that regular readers of e-mail and academic Lists are prone to think is a normal part of everyday life! The Lecture Series was not modified to suit the Case Study in any way though it was modified by circumstances which are reported below.
- 1.2 The proposal to AGOCC to record 'Digital Futures' as a Case Study was formally accepted and notified at the commencement of the Lecture Series. A week-by-week record was maintained by the Lecturer and Technician responsible for the Series and students were invited to make regular responses. A combination of these approaches, plus statements from management and staff, form the substance of this Report.
- 1.3 Details of the Lecture Series are contained in Section 2 below. There were however a number of 'special', 'unusual' and even 'unique' circumstances which applied to this particular Lecture Series being offered to Level 2 student across the department which are briefly listed below as contextual information:
 - 1.3.1 A structure employing 'departmental lectures' as an option open to students from a variety of courses within the Department of Visual and Performing Arts is a new feature of recently restructured modular courses.
 - 1.3.2 The option to attend this (or alternative) Departmental Options had not previously been offered to Level 2 students nor had an equivalent Departmental Option structure been available to them as Level 1 students. The experience of a lecture format involving many students from different courses was therefore an unknown quantity at the outset.
 - 1.3.3 Courses rather than individual students opt into this system (so the individual student does not have an 'option' not to attend *any* Departmental Option!) No restriction was placed on numbers in this particular *lecture-based* Departmental Option and it proved quite a popular choice with 62 registered students from 4 different undergraduate courses plus a shifting population of an additional 5-10 students who voluntarily attended one or more sessions of interest to them.
 - 1.3.4 The four BA (Hons) courses opting into the system (together with numbers formally registering) were Contemporary Arts (9), Fine Art (20), Photography (27) and TV Production Design (6). This hints at a wide range of professional interests and abilities with which the Lecture Series was largely planned to cope.
 - 1.3.5 Four of the Photography students were present under various European Exchange arrangements and did not complete the full semester. Slightly unusually three students who were not registered on the course chose to complete and submit assignments! (See "Who's Who?", section 2.5.3iv below.)
 - 1.3.6 Art courses are generally "studio based" and significant sections of the courses are structured around tutorial and small seminar groupings. Although all students are likely to have some "course-based" lecture experience this doesn't necessarily extend to larger-scale 'formal lectures' attended by a cross-section of the department many of whom do not know or usually work with one another. In addition some art practices are particularly *individual* in their approach and the advent of increased recruitment and various alternative 'pathways' may mean that students at the same Level on the same Course do not necessarily know one another. This is of little or no consequence in a ('traditional') formal presenter-to-student Lecture situation but has implications once the Information Technology or situation encourages or allows for any degree of interaction (see "Developing teamwork", section 2.5.3vi below).

2 The DIGITAL FUTURES Lecture Series

2.1 The Module: Date and Times

Module AVP202, the Level 2 Department of Visual & Performing Arts Elective "Digital Futures: from tools to robots and aliens", commenced on Monday 27th September, 1997 and was programmed to be a sequence of 10 formal lectures plus 20 hours workshop time ("directed learning time") over the 15 weeks of Semester 1; the course was to be concluded by Monday 2nd February 1998. The standard 'Module Specification' which was given to students participating in Level 2 Departmental Electives (and from which students selected their option) is shown in Appendix 2.1. The formal lecture slot, plus seminars and any necessary administrative/assessment meetings, were timetabled weekly into the Bonington Lecture Theatre Mondays 3.00-4.00 p.m. This time-slot was marginally different to other Departmental Elective slots in order to ensure regular availability of a Lecture Theatre with adequate multi-media/I.T. facilities. Workshop times were to be arranged in conjunction with the students attending the module.

2.2 Pre-Lecture Series preparation

- 2.2.1 A fuller, funnier version of the pre-lecture preparation is related in Appendix 2.2 "A True Story": the shorter version is that at the outset of the course 'adequate multi-media/I.T. facilities' fell somewhat short of the mark, there neither being a computer in-situ because of protracted delays in the planned installation thereof, nor a CD player. On the positive side there was a VHS player controllable from the lecturer's dais, an overhead video projector with excellent picture size, resolution and sound and standard items such as an OHP and chalkboard. The lecture theatre was networked but the lecturer would be totally dependent upon imported hardware to use facilities such as PowerPoint or accessing e-Mail or the Internet. At that time no system was in place for the easy importing of hardware, it being left to the individual lecturer to find and 'bring' appropriate equipment. Once imported, helpful technical assistance was always available to set up and test the equipment. Setting up and testing had to be undertaken within the booked time except on those occasions when the preceding class did not use the Lecture Theatre or vacated it before 3.00 p.m. which happened approximately 50% of the time.
- 2.2.2 Aficionados of the formal lecture will easily read into section 2.2.1 above the potential for chaos which this situation promised to deliver. Much of the 'pre-Lecture Series preparation' consisted of locating appropriate hardware that could be easily and quickly installed, tested and utilised, ensuring that it was available on a weekly basis, could run the software required and would be available for preparatory time during each week. Frustration at this stage was paramount to the point where a colleague, seeing the lecturer wander for the fifth time between distant office and the lecture theatre clutching varying assortments of laptops, cables and fittings, asked if he was trying to imitate a robot or was looking for somewhere to hang himself? The latter seemed the easier option at the time.
- 2.2.3 These preparations - which had commenced in early September - eventually resulted in a reasonably satisfactory set of I.T. equipment arrangements being fully employable by Week 2 of the Lecture Series (October 6th). Week 1 was necessarily largely administrative in function but was concluded with a short video presentation about "the digital future"; the lack of a computer at this first session was not felt to be disadvantageous to the series.
- 2.2.4 Meantime the chosen and available computer which had been located, tested and some additional software (Netscape) added was a recently purchased Viglen laptop borrowed from the Dean's Office. A laptop was clearly the most practical option given the prevailing circumstances and tests had proved this one more practical at the 'fit-up' stage than other solutions offered and the most effective of the laptops available in use (not for any specifically

technical reason other than by dint of being newer/faster/higher spec and perhaps by being the one prepared for "the Dean" to use for presentations!) Apart from the need to undergo a fairly rapid familiarisation process of layout, available software, manipulation of an unfamiliar 'pressure pad' mouse and locating key sequences to send a signal to the video projector, the Viglen laptop proved very adequate to the task and this arrangement worked satisfactorily throughout the series.

- 2.2.5 The debate on the advantages and disadvantages between the choice of IT equipment permanently installed in the lecture theatre and/or imported by the lecturer is doubtless set to continue awhile. The former inevitably tends to demand standardisation - which may be problematic for some applications or demonstrations - whilst the latter tends to raise problems of compatibility and time. Both demand familiarity and a proper allocation of preparatory /rehearsal time to ensure that the final delivery at least stands a chance of being impeccable. Whilst one can be sympathetic to prevailing conditions which give rise to 'hotbedding' lecture theatre timetabling in order to maximise utilisation at peak times, the advent of IT tends to exacerbate technical hitches which are antithetical to quick change-overs whichever type of installation is preferred. It goes without saying but perhaps needs to be re-stated that the specification of equipment and services - of what is and is not available - needs to be clear at the earliest opportunity together with indications of how any shortfall might be met.
- 2.2.6 One of the two "Great Ironies" of the IT provision available for this Case Study was that the 'Digital Futures' lecture series concluded on February 2nd 1998 and on February 25th the Principal Technician sent an e-mail to all staff in the Art and Design Faculty confirming that "The Bonington Lecture Theatre computer is now operational..." (see e-mail [63] in Appendix 2.7 and Head of Department's and Principal Technician's Reports in section 3.2 below). There is no suggestion of a fix-up, perhaps even rather the opposite: the constant highlighting of the genuine *need* for an in-house facility demonstrated by 'Digital Futures' (and other courses increasingly aware of the potential offered by I.T. presentations) certainly highlighted the urgency and perhaps hastened the enhanced provision. This improved arrangement is, however, still a 'temporary measure' pending approval, manufacture and installation of a suitable and secure dais/console.
- 2.2.7 There is an inevitable tendency for 'supply' of IT facilities in lecture theatres to follow perceived 'need' (rather than a policy or ability to provide an 'ideal state' in all lecture theatres). Given prevailing economic restraints and the rapid development of IT hardware and software which causes costly equipment to rapidly depreciate, this seems a generally acceptable and sensible policy. The continuing breadth of demand upon available resources (both IT and non-digital, as appropriately outlined in the Lewis/Hughes Report, see section 3.2.1 below) inevitably places restrictions on 'ideal state' plans except in particular 'showpiece' installations which can also prove problematic (see section 2.5.2 below). Both situations place on the individual lecturer a new burden of responsibility, knowledge and need for familiarity (and thus Staff Development) and upon the 'department' (or administrative unit responsible) provision of appropriate maintenance, instruction and technical assistance. The current rate of response to these demands across the sector (as distinct from specialist sections within it) tends not to be keeping pace with the technological changes. On increased responsibilities for individual lecturers see also 'Legal issues', section 2.6 below.

2.3 Survey of General Levels of I.T. familiarity/experience/skills/knowledge

- 2.3.1 In Week 1 students were asked to complete a fairly extensive questionnaire (on paper!) part of which was designed to yield information on their range of previous I.T. skills and experience (copy Appendix 2.3.1, see especially page 3). The results were duly analysed and did not remotely demonstrate what had been anticipated as likely skill/familiarity levels! The general level of familiarity with IT was significantly, even 'massively', lower than had been assumed: of

the 46 students who attended the preliminary introduction 28 (60%) had no experience whatsoever of e-mail or the Internet and only about 8% (4 individuals) declared themselves as "advanced users" in any facility, word-processing and games. With one exception no-one had heard of html. Even taking into account "the natural reserve of Week 1" this suggested from the outset that a Lecture Series somewhat grandly subtitled 'from tools to robots and aliens', was about to be grounded at the 'tools' level!

- 2.3.2 The IT skill levels of the average student (c. 18-20 years) is perhaps all too often assumed to be greater than it is. The assumption that "they'll cover the basics in school" or "they'll meet up with IT at home" may eventually be the case - and there are some signs that this is now true of *some* students in *some* schools/homes. Some students may have 'a natural affinity' for the subject and may appear highly advanced in their use of I.T. applications; equally, in others, a 'coolness' factor may apply which may disguise a lack of familiarity. To *assume familiarity* for all or even most students is to make the same mistake which leads to pockets of specialist I.T. application across organisational units of generally limited I.T. application. Any suggestion of 'remedies' to this situation would stray into areas well beyond the scope of this Report but it may be relevant to note that if some 'remedial' action isn't undertaken there is likely to be a few more 'lost generations' before the *average* I.T. skill level markedly improves.

2.4 Sequence and use of IT throughout the Lecture Series

- 2.4.1 As well as undertaking the survey of skill levels, Week 1 was an introductory session which provided an opportunity to describe the whole course, its objectives, direction and requirements.

It was not and was never intended to be part of 'The 10 Lecture Series' *per se* but to establish student priorities in joining the option and to afford them some choice in the sequencing of 'digital future' topics plus making preliminary arrangements for practical workshop sessions. Preferences expressed on the topics to be addressed were not quite as anticipated and the structure of the series was amended accordingly.

- 2.4.2 Week 2 (Lecture 1) presented the key results of the survey questionnaire as a PowerPoint presentation (extract copy Appendix 2.4.2). including 'the popularity vote' on most interesting topic offered with which I was determined to commence the lecture series. Anticipating young art students already familiar with many concerns of the Internet I had largely assumed that issues of the freedom of the Net including censorship, cyborgs and wacky developments would all feature highly but was wrong on nearly every count:

they *were* young art students but, as noted in 2.3.1 above, baring a few noticeable exceptions, were surprisingly *unfamiliar* with the Net in particular and I.T. in general;

being in a large departmental group for the first time ever since coming to University they felt surprisingly nervous about the whole exercise (and, it later transpired, one another);

as Photography students formed the largest single group the one area of safe ground for them seemed to be "PhotoShop" which they'd heard about, seen examples of, knew they would access limited specialist suite facilities in time and were keen to become professionally experienced;

the most common factor seemed to be electronic music or games.

I seemed to have recruited a group of 62 aspiring rock musician gamers with 'Image and Sound' a clear 'First Choice'. The anticipated launch-pad of either 'Cyborgs' or 'Netsex' had tied in the relatively lowly 5/6th place though, as the formality relaxed over the forthcoming weeks, both topics seemed to gain credibility (and were eventually demanded as 'Christmas Specials', 'Netsex' attracting the largest audience of the Series so my original prediction was in one aspect correct). *StarTrek* seemed to be a very common point of reference for predicting 'the future' whereas "Cyberwars: real, flame and virtual" attracted no votes whatsoever in the initial survey and was omitted from the sequence. The pre-prepared course was slightly amended for 62 Rock Peaceniks with an interest in Photoshop and the Lecture Series commenced with "Image and

Sound: Design, Composition and Manipulation". Over two weeks a selection of appropriate web-sites and illustrations were introduced including William Latham demonstration pieces, Silicon Graphics animations, synthesizers from Moog to Roni Size and Raprezent using both the Internet and video extracts (see lecture notes Appendix 2.4.2).

- 2.4.3 As the PowerPoint presentation of the structure of the proposed (amended) course tried to point out in Week 4 after all this razzmatazz... "HOWEVER! to *control* more advanced applications such as Image and Sound you need to feel comfortable with the computer" (extract Appendix 2.4.3) - and in this the majority of the group were unfamiliar. It was therefore now imperative to commence the series of hands-on workshops (introducing e-mail and Internet - see memo Appendix 2.4.3) which, whilst inevitably going to disappoint (on both fronts of available equipment and some wilder notions of likely ease/rate of progress to 'art' applications) would at least start the process of familiarity. The difficulties which implementation of this part of the course encountered - of differing levels, aims, ambitions - was largely overcome by the extensive use of e-mail which became a *vital* adjunct to the Lecture Series (see section 2.7 below where this unforeseen development is fully explicated).
- 2.4.4 After the anxiety, consternation, disquiet and trepidation of getting the necessary hardware/software in place, the performance of the equipment throughout the entirety of the lecture series was mercifully as good as the operator: at no stage did the computer crash or the projector fail. Week 3 however did yield one final attempt to throw the presenter: in this week, for the first time in the series, it was necessary to move between e-mail, video, PowerPoint and Internet, all utilising the same projector which would need re-setting. This was to be achieved by a system which with hindsight appears fairly ridiculous: the video remote needed to be pointed towards a small reception pad at the rear of the lecture theatre and the channel changed to the appropriate function which was registered by the appearance of a small number (too small to be clearly discernible from the front). To make it slightly more difficult there was a time delay before the new function would operate but if the operator panicked and re-pressed the channel number it would move (in time!) on to the *next* setting which would confuse the projector (let alone the unsighted operator...). As well as recalling the right channel number and getting the timing right, at least one of the remaining two functions (lights and video/computer) were in different locations so that the whole process resembled trying to change gear in a car where the clutch was in the boot, the gearstick in the back seat, the accelerator in the conventional place and the traffic lights indiscernible. With practice future switchovers became 'accomplished' if not exactly smooth.
- 2.4.5 Where IT and non-digital provision is accomplished in stages (which tends to be the most common form of provision enhancement) it is essential that advance design planning attempts to take into consideration future developments to ensure that all facilities are independently and separately easily available both to the speaker as well as external control (e.g. by a technician in a lighting bay). Not to provide this facility, or to provide it piecemeal, significantly undermines the multi-media capability of the provision which it is the intention of staged provision to enhance. This conclusion is also independently reached in the Lewis/Hughes Report (section 3.2.1 below, final paragraph).
- 2.4.6 The Lecture Series thereafter continued according to the amended plan and kept fairly successfully to its programme of weekly topics. It was noticeable early on that whilst the computer's ability to seek out interesting websites was a unique experience for many, in terms of *impact* of multimedia presentations the video extract (with its planned, directed and reliable movement, sound and special effects and its focus and commentary on a particular topic) remained supreme. Where the computer won most concentrated interest was in *demonstrations of the computer itself* rather than any resulting image. In particular demonstrations of searching for information (e.g. "Women and Computing", "Gender Issues", "Sex and Censorship" and (later) mIRC and IRC) - opened up a whole new facility for many as they progressed in the workshops from hesitant e-mail to surfing the Net. There being no printer for screen-dumps *in-situ*, these had to be prepared in advance (see Appendix 2.4.6).

2.5 Problems encountered and overcome

- 2.5.1 It is a matter of conjecture whether any of the 'problems encountered' were exactly 'overcome' - to judge by some of the student assessments (see section 3.3 below) some problems were insurmountable. Obviously the initial problem of lack of equipment was 'overcome' to a point where no aspect of the course had to be abandoned as impossible but this was not true of the follow-up workshops where antiquated technology couldn't meet some students' expectations. The riddle remains to be solved, of course: that a successful demonstration of a facility tends to *increase* rather than *satisfy* the demand to be able 'to do it yourself', at which point the lack of multi-facilities increases frustration. The radical version of this argument would be to suggest that IT equipment in the Lecture Theatre shouldn't surpass anything that isn't available to the audience!
- 2.5.2 If one was seeking a third 'Great Irony' in terms of 'overcoming problems' it might be that during the 'Digital Futures' Lecture Series a new Lecture Theatre was in the process of being built and 'kitted' just across the street from the Bonington Lecture Theatre: a new complex of the Boots University Library, the Bass Management Centre and the Lady Djanogly Lecture Theatre. The complex promises to be 'state of the art' and lecture theatres in the Management Centre and the new Lecture Theatre certainly achieve that. But the final irony might equally be the very complexity-made-simple of 'the model Lecture Theatre' itself! The User Manual for the Lady Djanogly Lecture Theatre (the closest I have got to the equipment to date!) is admirably user-friendly: "Welcome to the Lady Djanogly Lecture Theatre" it starts. "As you step up to the Lectern Area facing the audience you are faced by 3 main items:..." (One is tempted to suggest "Panic, Panic, and Panic!" and hope 'the audience' isn't in place the first time one does this!) Even with the help of this exemplary guide (extracts Appendix 2.5.2) and the Staff Development support sessions being arranged, *practice* and *rehearsal* become *even more* essential ingredients of any presentation. To muff your lines in Bonington whilst sticking wires in the wall with matchsticks (I exaggerate!) is one thing: to muff them in the Lady Djanogly will be quite another!
- 2.5.3 Minor changes in the programme brought about by the desire to avoid 'problems' were many and varied:
- i. of accessing Internet sites live:

There was the predictable problem of delays on accessing Internet sites or very occasionally key sites (previously tested!) not being accessible for one reason or another. Where these were crucial (for example Search Results or giving URLs which students might like to visit) it was necessary to circulate them on the Distribution List (see 2.7.8 below) or provide paper-based copies as handouts. In general a course declaring a 'digital future' was more dependent upon paper than the title might suggest!
 - ii. of using a multiplicity of media:

This problem has been outlined in section 2.4.4 above. It resulted less in 'strategic changes' than unusual contortions by the lecturer but did tend to decrease the number of changes of channel envisaged in the planning of future lectures. The other 'media' changes which occurred are as noted above: greater use of video than anticipated (2.4.6) and greater use of paper (2.5.3i). The latter included issue of Computer Services' Help Desk Information, User Support Team guides on how to undertake specific functions, and *Formations* 'pre-prints bank and e-journal' publicity. *The bridge, it seems, between the everyday and I.T. is still frequently made of paper. The need for attractively designed 'handouts', preferably in colour and essentially in sufficient numbers for one per person attending the lecture, should not be under-estimated (nor under-costed); few web-sites currently make anything separately available but assume that the screen image is sufficient. This then begs the question of adequate local colour printing facilities and course budgets.*
 - iii. of interactivity and training:

This was a marked 'strategic change' during the course of the lecture series. To some extent it was occasioned by the low starting base of the students' experience of I.T. and the tendency for art students as a group to be generally "studio" (i.e. hands-on) based. Increased provision to workshop sessions was arranged and for the majority e-mail (including Distribution Lists) and accessing/using the Internet became the main target and achievement. Others, usually but not exclusively those with a good initial I.T. skills, were able to make progress in developing their own websites. This change is detailed in section 2.7 below.

iv. of who's who?

This was more a problem of Central Administration and Computing Services computers than those used in the Lecture Theatre but it had a knock-on effect on the course. The practice of listing courses as codes or a student's registration number being their e-mail address may make for ease of administration but is a restraint on developing the use of e-mail: needless to say few students could recall (or initially even locate) their registration number and if they didn't 'sign' e-mail (or used a nickname etc) this necessitated a time-consuming 'Who-is?' paper or database search to locate, for example, AF6022400! It also inhibited e-mail contact and collaboration. An element of 'consternation' of 'who is whom?' was, in part at least, the order of the day across the whole sequence of the course, largely occasioned by the numbers participating and these unhelpful I.T. elements.

v. of on-going I.T. developments:

Enhancement of IT applications is an everyday occurrence. Although no major developments became *imperative* additions during the period of the Lecture Series, new (or newly discovered) websites were explored where relevant and 'new' applications (e.g. pop video CDs with video) included in demonstrations where appropriate.

vi of developing team-work

As noted in 1.3.6 above, art students tend to stem from a non-lecture tradition of 'individual working' as a result of which collaboration/assistance in the lecture follow-up-workshops was slow to develop. Existing friendships (both within the same course and (rarely) across course boundaries) resulted in some collaboration and the aficionados building web-sites began to exchange information and tips; development of this feature outside of these conditions, however, remained guarded. This natural reservation was more successfully breached by e-mail (especially the Distribution List feature, see section 2.7 below which, once set up, didn't require users to know the ubiquitous registration numbers).

2.6 A problem for the future: legal issues!

2.6.1 An interesting post-script to 'problems overcome/avoided' listed in section 2.5 above is provided by the ever mounting presence of 'legal problems' associated with IT (including in the Lecture Theatre). As the impact of IT becomes ever greater it seems likely that significant resources of time and expertise will be/are being devoted to regulations foreseeing every possible 'misuse' which may fall foul of copyright, defamation, obscenity and data protection - all very complex legal issues in their own right. There are distinct signs of nervousness within the Universities, of preparing the paperwork and accepted Codes of Practice as a "reasonable care" defence in any test case which might, and surely will, arise somewhere at some time. The trick at the moment seems to be to ensure that it's not 'you' who prompts the first case! To the individual novice student struggling with e-mail, Lists, and Net searches for the first time - or even to the more experienced student attempting a first page of scanned images and HTML code - such considerations remain somewhat dark threats even if covered in a registration document (provided as likely as not during a general Induction Course but in practice probably unread or

not understood at the time of issue). In practice the responsibility for 'knowing' and 'guiding' will rest largely with the lecturer.

- 2.6.2 Within the 'Digital Futures' Lecture Series such issues were frequently 'mentioned in passing' in the general context and were brought directly to the attention of individual students as the situation demanded (in particular in two cases where proposed assignments arising from the Lecture Series would in one instance clearly have breached copyright and in a second which might have breached the 1959 Obscene Publications Act). As the Robert Mapplethorpe printed image proceedings in the West Midlands currently amply demonstrate, the definition of 'obscenity' is likely to remain a continuing problem for the visual arts and ironically becomes exacerbated by the increased range of visual reference afforded by IT in the lecture theatre! The dividing line between "education" and "obscenity" of a particular image is not really elucidated by a current (Nottingham Trent) regulation forbidding use of "inappropriate" images, though one can understand and be sympathetic to the sense and sensitivity which lies behind such enigmatic phrasing. No complaints regarding any material shown as part of the 'Digital Futures' lecture series were received from students and care was taken, when any website or video-clip being accessed was remotely challenging, to give adequate warning and 'appropriateness value' in the introduction. But that is not to say that this problem was 'overcome'!

2.7 E-mail in a supporting role

E-mail played a vital supporting role in the Lecture series. In all some 672 individual e-mail letters were exchanged, averaging approximately 5+5 per enrolled student. The narrative embedded in these e-mails records the detailed story of the Lecture Series and is summarised below.

- 2.7.1 At the first lecture on Monday October 6th (3.00 - 4.00 p.m.) details of e-mailing and the intention of forming a Distribution List for all participants were given together with simple guidelines on sending an e-mail. Needless to say experienced users registered almost immediately (the first at 7.16 p.m. on the same day) and tended to ask complex questions - "are we gonna cover FTP in one of the lectures and converting files sent through this e-mail system"[1] but proof that the system could work for the novice too was apparent by 4.23 p.m. on the following day:

"Dear Barry

This is my second attempt to send my first e-mail and hopefully it will be more successful than the first which seems to have disappeared..." [2]

Letters received were replied to individually and the mailer put onto a 'Digital Futures Distribution List' which grew fairly rapidly in the early days. The module was open to both experienced and novice users and also attracted some aficionados who were not formally registered on the course but played a lively and contributory role [3]. All participants were required to confirm their registration in this way which the experienced ones did immediately, posing questions at length [3] and the canner ones later, briefly, but with a winning compliment [4]. Once a student had successfully sent an e-mail they were also registered onto the course Distribution List.

- 2.7.2 An effective e-mail facility and in particular the individual and personal attention it affords and encourages running alongside the largely impersonal formal lecture makes for a very effective balance between general, universal information and personal development. It offers an opportunity for the traditional "Are there any questions?" at the conclusion of a lecture (which can so often result in an unwelcome and distracting question, an embarrassed silence or a collective pressure daring anyone to delay ending the proceedings further!) to become a genuine opportunity to personalise the lecture. In particular it meant that the more advanced student was not disadvantaged by the necessary pace of the general lectures and specific questions, usually of

a technical nature, came thick and fast: on creating files [5], forwarding e-mail [6], and HTML editors [7], [8,9,10]. Inevitably technical problems were encountered even by the aficionados, bouncing mail being their most common problem as their fairly lean space allocations were exceeded [11]. Attempts were made from the outset to get experienced students to swap information and assistance [12] with limited success.

2.7.3. The e-mail system available to the course (and individually to all the students on it) at the time of the Lecture Series was quite antiquated and difficult to use (see Statement by Computing Services, section 3.1.2 below). A delay in installing a new universal system for students - and one sympathises with the complexities of developing a new scheme of 28,000 individual mailboxes! - meant that novices had additional difficulties to overcome and the interface was something less than attractive. Bearing in mind that these end-users were *art* students the combination of these two factors did make for some difficulties:

it tended to exacerbate rather than minimize technophobia concerns;

it looked unattractive on screen;

it depended on the ubiquitous "registration number" for identification which resulted in time-consuming searches (as one experienced wag used to put as his Subject: 'It's Phil Kelly but you can call me AF600640!' [3]);

it meant that laggards really could 'lag' through inexperience, technophobia or personal choice (which was the case with the very last 'initial registration' received in mid-January, 2 weeks before the conclusion of the course! [13]).

2.7.4 The general informality of e-mail (including vocabulary, tone, spelling, smileys:-) is perhaps one of its greatest assets though exactly how far it is taken is doubtless a matter for the individual lecturer: behind it the essential tutor/student relationship remains a formal one. From the moment of initial registration this varied considerably according to the student - from the jokey "May I call you Barry? Oops I just did" [14] to the more formal but friendly "From Hourii to Barry with regards" [15]. As one student observed in a seminar "I always seem to speak in Americanese when writing e-mails but at no other time..." The informality - providing it isn't abused, which in this series it never was - can act as a useful antidote to the necessary formality of the lecture.

2.7.5 The e-mail adjunct to the lecture theatre I.T. facilities also played an important role in both personalising and to an extent changing the *content* of the lectures and thus the application of the Lecture Theatre equipment. One student, clearly not a novice user of e-mail, sent a polite but surprisingly critical e-mail after the second lecture (which needless to say the lecturer thought had gone rather well!): "it would be great if you could speed things up a bit in class" [16]. The immediacy of individual conversations made possible by e-mail meant this was a view which could be sensibly addressed and some resolution reached [17]; later mailings also meant that this particular student's somewhat unusual digital experiments - "would you happen to have a spare Persian font knocking around?" [18, 19] could be supported although they were unlikely to feature in the general lectures. The same student even volunteered a Report on the Lecture Series - see section 3.3.4 below.

2.7.6 The e-mail facility also helped greatly with the administration of the Lecture Series: the flow of up-to-date information about student's whereabouts, progress, problems, delight, concerns was much greater than could have otherwise been the case and meant that valuable "lecture theatre time" was not lost in administrative functions which were largely undertaken outside of the lecture slot. The range of application and information was about as wide as it could be:

administrative functions [[20], [21]

organisation of lectures and workshops [22]

student preferences [23]

absence though illness of students [24], [25] and staff [26]

absence through confinement [27]

special conditions relating to overseas students [28], [29-31] and even a measure of remote assessment [32].

In such instances it is possible to conceive of a situation where students for one reason or another unable to attend all the lectures *in-situ*, could complete the course through the medium of video-conferencing (perhaps not surprisingly not yet available in the Bonington Lecture Theatre) though whether this would always be welcome in the case of a confinement is not guaranteed!

- 2.7.7 Demonstrations and lecture content which dealt directly with e-mail, the Internet and building websites were all supported by practical workshops outside of the Lecture Theatre (though if this begins to sound idealistic it must be noted that a common theme in the students' assessments is that both workshop equipment and hands-on coaching were inadequate - see section 3.3 below). Demonstrations and workshops in their turn gave rise to a host of additional e-mail enquiries as various problems were individually encountered and in most cases satisfactorily processed. The more complex the problem usually the more testing it is offer assistance remotely but, providing the student also has Internet access, helpful websites are available to give tips and in some instances detailed tutorials. However this in turn requires that the student is not only familiar with the Net but has some experience of avoiding the overload of information or the tendency to get sidetracked which the novice (and not-so-novice) user can be drawn into with frustration as the end result.
- 2.7.8 The e-mail facility as an adjunct to the lecture presentations - and in particular the Distribution List which can result from it - could be a very effective substitute for, and in *some* aspects an improvement upon, the ubiquitous 'handouts' which accompany most lectures. For example, in the instance of this particular Case Study on 'digital futures' many of the references were, not surprisingly, net-based and therefore given as URLs. Distributed via a Distribution List on an *adequate* e-mail system these would appear as 'live' links and access to them would be easy and fairly immediate. This, however, was *not* the case with the particular mail system the students currently enjoyed so the need to 'paste in' (or print/copy, relocate and re-type) this information was a severe handicap to this service being either easy or quick. The extra I.T. skills and experience demanded by this process were clearly a major barrier to novices and a point of some exasperation to aficionados and the indications are that Distribution List references were not followed as much as they should, could or needed to be. Fortunately this situation should not recur (at least for the same reasons) as the Exchange e-mail system now available to students (and 'Great Irony' Number Two) automatically generates live links (see Computing Services Report, section 3.1.2 below). Despite the short-term disadvantages pertaining at the time, the Distribution List regularly featured solutions to problems (including in some instances external technical advice [33], a lot on web building and HTML as it became the 'hot' issue [34], [35] which continued throughout the module and encouraged collaboration [36]; it was also used to encourage membership of Lists [37]. It also caused some hilarity: because the Distribution List was set to display the name of all members in alphabetical order (no mean feat in itself as the registrations were meaningless numbers) and because alphabetically 'Alberet, Claire' was first, the first Distribution List mailings received a string of complaints of which by far the best and most direct was from an outraged AF702940: "Who the hell are you calling Claire?" [38]. The *conventions* of I.T. as well as the techniques can perhaps only be learned through experience.
- 2.7.9 The limited mail facilities at this time did not encourage the development of either a noticeboard or a website with, for example FAQs ("Frequently Asked Questions") though clearly both could be useful adjuncts given a more sophisticated system. The new system now in place (see Reports below 3.1.2 and 3.2.1 to 3.2.4) could support both facilities relatively easily and they could feature *within* the Lecture Series (i.e. be introduced and demonstrated within the standard Lecture Theatre time). In this particular Case Study that option was not felt to be viable and was

not attempted and lecture demonstrations were therefore restricted to mail and Internet access and visiting appropriate sites.

- 2.7.10 The perennial problem of facilities (in this instance IT and lecture theatre equipment) being something *less* than the student has available in his/her own home does, and possibly will increasingly, occur. Not (m)any students are likely to have video projectors in their student flats (yet!) and given that these particular students were generally at a novice level in terms of e-mail and the Internet the problem was minor in this particular instance. Even so some students did have personal mail and ISP subscriptions which clearly provided them with better facilities (particularly software) than the University was providing [39], [40]. Experienced students were understandably critical [41] and this tendency may well be set to increase if investment doesn't meet developments in the field. Correspondence on this subject was received even after the completion of the module [42], [43]. In one workshop a student demonstrated an interface (at that time completely new to me!) between his mobile phone, his home computer and various Internet sites and this tendency will certainly increase (e.g. e-mail on palm-tops, digital image to remote screen...). An important corollary of this may be that a suggestion that for 'everyday applications' students in the future should purchase/hire their own computers through a cheap loan agreement, leaving the University simply to provide intranet sockets (including one at every seat in the lecture theatre) received a qualified welcome from an aficionado [44].
- 2.7.11 From the outset of the Lecture Series the effect of IT demonstrations in the Lecture Theatre was to create a high demand for hands-on experience of 'how to do it'. In part this was undoubtedly due to a number of specific factors: the subject matter of this particular series, the relationship between content, what was being demonstrated and the students' own professional practice, these particular students being 'studio based' in their main courses. Even so it is at least likely to feature in any lecture series whilst the technology contains an element of unfamiliarity ('magic') to the spectator. Few people today are going to watch a film or video wondering 'how do they do that?' but e-mail, the Internet and various multi-media applications (e.g. audio CDs with video tracks) have not yet reached that level of familiarity. And so such questions were constantly asked (even of PowerPoint presentations!) Given that most courses expect the student to make presentations to a peer group at some stage, there's a healthy interest not only in what the technology can provide but how to manipulate it.
- 2.7.12 The solution to this welcome pressure was broached as best means would permit through the workshops. Whilst it is clearly unreasonable to expect massive *duplication* of Lecture Theatre IT facilities it is desirable, indeed necessary, to provide the student with equipment of some *equivalence* particularly in terms of computing hardware/software. A Faculty of Art & Design is remiss in not providing these at an appropriate level and in adequate numbers even if the reasons why it fails to do so (usually essentially the finance to provide high-end equipment capable of processing images) may sound legitimate. This being the situation in this instance suite facilities were employed from Computing Services and the University's Math's department which gave adequate access to the student mail service and the Internet but, of course, no access to "art" software.
- 2.7.13 The practical workshops (run as both day and sessional events throughout mid-Semester) rapidly increased experience and facility with e-mail (and thus initial registrations to the Distribution List), accessing the Internet, using Search Engines and, for the more experienced, building websites. Inevitably first e-mails produced the usual crop of catastrophe and comic outcomes, every one a gem [45-49]. One student never did learn not to try typing the whole message in the title but communication of a sort was achieved [50]. The most noticeable feature of 'first e-mails' is the sense of achievement and a real breakthrough [51-54]. In a minority of cases this led to extraordinary developments (e.g. students mastering 'attachments' on an antiquated system [55] or three students with no initial experience of e-mail, building websites and logging them onto external servers in fulfilment of an assignment [56], [57]. But for the vast majority development was more painstaking and probably more painful. At both extremes it had a beneficial effect upon the IT used in the lectures: having 'tried it out', questions became more

focused and 'information swops' more frequent; that special help-quality feature of e-mail and the Internet began to apply and there may even have been a greater hint of sympathy for the stranded Lecture Theatre speaker when demonstrations temporarily went awry (e.g. a live link not working).

2.7.14 The e-mail adjunct performed a number of other functions not anticipated in the original planning stages. One was that some staff from the students 'home' courses (if themselves familiar with e-mail and the Net) occasionally offered an input [58]; another that visits to students working in their 'home' facilities were arranged [59]; a third that arrangements for individual specialist facilities such as Cubase and advanced Photoshop (not available in the Lecture Theatre) were undertaken [60]; a fourth (less welcome!) was assaults on the laptop I had programmed for the Lecture Series [61]; a fifth was organising 'competitions' designed to get students using Search Engines [62]; a sixth was circulating 'The Two Great Ironies' of the course: that the student e-mail upgrade was to be implemented - "Over the coming weekend (7-8 February 1998)..." [63] and, 25th February 1998, that a new computer installation had landed in the Bonington Lecture Theatre: "The Bonington Lecture Theatre computer is now operational...." [64]!

2.7.15 My final 'observation' on the e-mail adjunct to the IT in the Lecture Theatre may only be specific to this particular instance - this is, after all, one Case Study. But it would be that in its impact, effect and usefulness the e-mail facility and its corollaries were of equivalent significance to the lecture theatre provision: that the one is the catalyst to getting the other to work to best effect (and vice versa). The view, in various forms, that "IT will change the way we teach" is frequently heard but some of the ramifications may not be wholly anticipated. Familiarity with an e-mail culture and the current emphasis upon 'interactivity' in various forms may well change some basic assumptions, not least that 'the lecture' is essentially a Gradgrind pot-filling exercise rather than a tea-party. I.T. 'in' and 'around' the Lecture Theatre could well significantly be made to fundamentally change the nature of the 'lecture', particularly when it is part of 'a series'. It does not necessarily follow that 'the lecturer' undertakes all the follow-up exchanges (any more than s/he would be expected to undertake all the 'seminar or tutorial follow-ups' from a traditional 'general lecture' programme). This may begin to spin 'the lecture' into becoming a multidimensional event. But I appreciate that this is probably a minority, and possibly a wrong-headed, view from a sample of one Case Study.

3 Statements on Lecture Theatre I.T. provision from management, academic staff, technical staff and students

The initial proposal to write this Case Study suggested it might be interesting to provide an opportunity for a cross-section of the different University sections which have an input into I.T. provision in various Lecture Theatres to make a short and independent contribution to the Report. This was not particularly intended to show discrepancies in policies (though these could conceivably occur) but rather demonstrate the complexity of the decision-making process which has to result in the right equipment being available in the right space at the right time. Inevitably there is a degree of 'institutional blandness' and optimism about the statements but nevertheless several issues are addressed. This section therefore reproduces the contribution of these key individuals concerned with these issues within the different sections of the University.

This section also reproduces assessments of the particular Lecture Series 'Digital Futures' in the Bonington Lecture by 4 of the participating students.

All participants were provided with a 'Guideline' brief (Appendix 3) with the exception of Mr Jordan (Computing Services) who was asked to specifically concentrate on University e-mail provision.

3.1 University Management:

Academic:

3.1.1 Statement by Mr Terry Roche, Manager Academic Accommodation TNTU

Mr Roche briefly traces the history of development of the Bonington Lecture Theatre in a University context and outlines some of the advantages and disadvantages of the new and increasing demand for IT provision.

The Use of IT Technology in Module Delivery

Bonington Lecture Theatre

The use of digital technology as a means of teaching and learning delivery within the Bonington Lecture Theatre is strongly supported by Academic Accommodation Office. AAO is responsible for the development, maintenance and timetabling of all General Purpose Teaching Rooms across the University. The Bonington Lecture Theatre traditionally belonged to the Faculty of Art and Design, who still comprise the great majority of bookings within the Theatre. In 1996, as part of a University wide initiative, all Lecture Theatres and classrooms came under the control of AAO. Their responsibility included timetabling, maintenance furniture and equipment upgrading.

The use of IT Technology across all Lecture Theatres is increasing, as more and more lecturers look to the use of innovative technology to improve the quality of the learning experience for students. As part of an overall upgrade programme, AAO has set aside capital for the systematic introduction of IT technologies within large teaching spaces. In the case of the Bonington Lecture Theatre, AAO has been able to work in partnership with the Faculty to upgrade the equipment within the Theatre. It is a relationship based around the notion of local carers, advising AAO of their requirements, and suggestions for improvements, and AAO allocating funds to carry out the works.

Changes to teaching and learning activities, with greater reliance on the use of IT technology in the deliver of programmes, result in a requirement for a more cohesive, planned management response. As with most University activities, the resource base is diminishing in real terms, and relative to the number of students moving through the University facilities. The use of such

technologies within the Bonington Lecture Theatre therefore was carefully considered in terms of competing demands. In this case, the criteria were met, those criteria being a large teaching space, with a minimum of 100 students; a teaching department who were determined to make best and most appropriate use of new technologies, and a support base to manage the facilities on a day to day basis.

One issue for consideration has been the match, or otherwise, between the new technologies and the physical constraints posed from an existing lecture theatre. In the case of some other University lecture theatres, the rake of the seating makes it extremely difficult to site a data projector without causing extreme picture distortion or shadowing. The Bonington Lecture Theatre however suffers from no such limitations and was therefore able to be successfully upgraded.

It is the responsibility of a centrally funded unit such as Academic Accommodation to make sure that quality learning outcomes for students are properly resourced. This should be done through collecting the appropriate information when timetabling and achieving the most appropriate match between room size and module numbers, between teaching and learning activities and equipment within rooms. There becomes a clash, sometimes, between the use of IT technology as a means of teaching and learning delivery, and the size of a room with such IT technology infrastructure. For example, module A has 60 students enrolled and the lecturer is planning to use digital technology for the delivery of significant components of the course content. Module B on the other hand has 100 students enrolled, but the lecturer intends to use more traditional 'chalk and talk' delivery.

In the past the response has been to timetable Module B within the Bonington Lecture Theatre (with a capacity of 100) as opposed to Module A. This has come about because AAO has not received information as to the nature of teaching and learning activities to be delivered within a module. Since the advent of new computerised timetabling software, it is now possible for timetablers to specify either the nature of the activity to be timetabled, or to request specific equipment within a lecture theatre for a module.

At the same time, AAO will be working toward ensuring the spread of digital technologies, similar to those in the Bonington Lecture Theatre. It is planned that all demands for the use of digital technologies in the delivery of teaching and learning activities across the University can be met from within the stock of available lecture theatres.

One further issue for consideration is that total reliance on technology is never advisable. Something can and often does, go wrong. There have been recent experiences of lecturers having to be cancelled due to equipment malfunction. While we try to maintain and upgrade all equipment in perfect working order, a fall back is sometimes required.

Terry Roche

Manager, Academic Accommodation

Technical:

3.1.2 Statement on TNTU E-mail developments by Mr Anthony Jordan, Computing Services.

Mr Jordan's brief was slightly different to the other contributors as he was requested to specifically concentrate on his area of particular responsibility for University e-mail provision, the developments which have occurred and problems encountered.

E-mail Services at The Nottingham Trent University

April 1998

A Summary for JISC's Advisory Group on Computer Graphics

Background

In the Summer of 1996, the University's IT Steering Group recognised that whilst email was becoming an increasingly important tool in all of the University's activities, the existing VAX/VMS based email system was becoming rather antiquated and unsuitable for many of the people who now needed to use email. A replacement was needed that was more user-friendly and provided facilities such as sending/receiving attachments and shared message folders for discussion groups. After evaluating various software packages, the ITSG selected Microsoft Exchange. A project was set-up to implement Exchange and over the next year the new system was successfully introduced and is now used by a little over 1500 members of staff and research students.

After the successful introduction of Exchange for staff, the ITSG decided to provide the same facilities for students for the start of the 1997/98 academic year. Unfortunately, the computer to run the Exchange server for the student email was delivered late and it was not possible to provide the new service until start of the second semester. We were concerned about introducing a new email system in the middle of the academic year, but we decided to go ahead as the existing VAX/VMS system could be run in parallel in the new Exchange system. Over the semester break, the Exchange client was installed for student use on over 500 Computing Services resource room PCs and an additional couple of hundred PCs owned by the faculties. The new Exchange server was set-up with around 28,000 mailboxes. The new system went live for the start of the semester and was a success.

MS Exchange in use at NTU

Initially, Exchange was used by staff in similar way to the old VAX/VMS system i.e. just for sending and reading messages, however, as people have become familiar with the new system, they have started to exploit its facilities for scheduling (using Schedule+), distribution lists and public folders. One valuable new facility are the automatically maintained distribution lists that contain the addresses for all members of staff in a particular department and for all students on a particular course code. These lists enable staff to easily contact a particular group of people - sometimes too easily. Projects are underway to use public folder facilities in Exchange to disseminate course materials to students and for the collection of course work.

The students took to Exchange immediately and our concerns over introducing a new system in the middle of the year proved unfounded. Anecdotal evidence suggests that the existing email users found Exchange much easier to use than the old command-line VAX/VMS system and that the simple interface has encouraged students who previously did not use the old system to start using email.

There have been two areas where we are not entirely satisfied:

1. Remote access to email used to be a matter of using a modem and a terminal emulation package or telnet over the Internet to get to the VAX/VMS system. Staff and students now have to have either a copy of the Exchange or Outlook client and access to the Internet either via an Internet Service Provider (ISP) or via the organisation they are visiting. This has raised the cost of remote access to staff and students.
2. An unfortunate side-effect of the ease with which Exchange allows a user to select addressees is that some students are abusing the system by sending large numbers of staff and/or students unsolicited junk mail.

Both of these problems should be partially addressed in Exchange 5.5 and we are preparing to upgrade both email systems in the near future.

Anthony Jordan
Computing Services

3.2 Faculty of Art & Design: Department of Visual and Performing Arts

Academic

3.2.1 Joint Statement by Professor Simon Lewis (Head of Department of Visual and Performing Arts) and Mr David Hughes (Coordinator of Department of Visual & Performing Arts Electives)

No separate statement was forthcoming from 3 Faculty sources invited to contribute - Dean's Office, Faculty Administrator's Office, Faculty IT Committee. The joint statement by the Head of Department and Electives Coordinator outlines the Departmental structure and the particular concerns and demands of administering and coordinating the demands of courses with an over-riding concern for and with 'the image'. It also details technical developments which have occurred and draws comparisons with 'a model lecture theatre'. Note that Mr Hughes was not in post during the period of this Case Study and his appointment from February 1998 was partly in response to some of the organisational and logistical difficulties recorded by Electives in Semester 1; he is Module Leader for Contemporary Studies (a lecture based theory module).

Report on IT Provision in Lecture Theatres

With Specific Reference to the Needs of Visual and Performing Arts and the Bonington Lecture Theatre, Nottingham Trent University.

The Department of Visual and Performing Arts is made up of a number of named degree courses: Fine Art, Photography, Photography in Europe, Contemporary Arts (including performance, dance, visual arts and music), Theatre Design and Television Production Design. The IT needs of lecturers within the department are quite particular. Essentially, the accumulated subjects of scrutiny, intellectual and formal interests of the named degrees demands that there is a very wide range of media available to assist in the delivery of lectures. It is the case that almost all the lectures conducted in the Bonington Lecture Theatre, the department's main lecture venue, require more than one item of audio visual equipment.

It is not possible, however, to extract IT straightforwardly from this range of multi-media audio visual teaching aids as though it were a special case. Currently it stands alongside other more traditional media as a carrier of images and information. However, it will become increasingly important and dominant as it becomes the primary medium for image, information and event. In future, the digital medium will, most likely, carry all the information currently carried in analogue, print or photo-chemical media. The connections to the Internet, the bookless library (library without walls), on-line 'dialogues' and research facilities make computers an essential element within this suite of resources to support the delivery of lectures and workshops within modules.

The main element dealt with across the department is the visual image, whether moving or static. This ranges from video documentation of one-off site specific work all the way over to a projection of a 35mm slide of an existing piece of 2-dimensional painting. However, it is frequently the case that in core, degree programme lectures or in departmental electives, it is necessary to move between the visual image, the video image, recorded sound and, increasingly, a Web site or CD-ROM. Any lecture concerned with interdisciplinary will usually make reference to sound, video, performance and static visual art or installation work. Consequently, a flexible system for moving between these sources is necessary.

Increasingly, as all this information moves towards the digital medium, all of these images and documents will be held within and generated from within computers.

When Dr Smith's Digital Futures elective module ran earlier this academic year, most of the resources needed had to be brought in and plugged through the video projector temporarily. We are now in a position in the Bonington Lecture Theatre to provide all the requirements of that module and other lectures demanding multi media support, through a suite of permanently installed items. This suite comprises computer with zip and CD-ROM, video players, monitors

and projector, 35mm slide projectors, two 16mm film projectors and cassette and reel to reel audio. DAT and CD players are still brought in on a temporary basis.

In the Lady Djanogly Lecture Theatre in the new Boots Library, there is a model lecture theatre which suggests what the current state of affairs should be within our main departmental lecture theatre. The entire system is operated by the speaker from a touchscreen console which co-ordinates tape, DAT, Minidisks and CDs in a sound stack, two slide projectors which operate singly, in tandem or in phase through the agency of a slide dissolve unit, a Wolf Visualiser which operates as both epidiascope and OHP, a video projector through which all the digital sources can be routed and an Internet connected Pentium 200 computer which can run Powerpoint and interactive CD-ROMS.

The main difference at the moment between these two lecture theatres is the ability of the speaker to control the whole suite of technical resources from the lectern through a touchscreen and items of hardware such as DAT's which are not permanently installed in Bonington. Caught between being funded by the Faculty and Academic Accommodation, funding for developments in the lecture theatre are slow, but they do progress and in terms of IT, the Bonington Lecture Theatre can now function very well.

Prof Simon Lewis, Head of Department of Visual and Performing Arts & Mr David Hughes, Coordinator Departmental Electives

Technical

3.2.2 Statement by Mr Gerry Young, Principal Technician Department of Visual & Performing Arts with Faculty responsibility for the Bonington Lecture Theatre

Mr Young's statement is primarily concerned with the *quality* of presentation (for students and staff). He briefly relates the development of IT equipment in Bonington, its upgrades both recent and projected.

From: Gerry Young :Ext 2377

To: Barry Smith :Ref

Date: 30 April 1998

1:Page

IT Provision in Lecture Theatres.

I feel that there are two aspects to this, the first is the matter of the presentation of lectures. Current software (such as Powerpoint) enables a lecturer to present information in a very professional way and in a form that has much greater consistency than hand-written work on chalk or whiteboards. Preparation of the • slides• for these shows is relatively easy and quick, certainly much more so than the traditional 35mm slides, and in most cases requires no external professional input, it can be done by the lecturer concerned.

Equally important in an Art & Design environment is the presentation of students work. With the increasing importance of digitally derived or manipulated imagery within our students work it is vital that facilities are available within our Lecture Theatres (and in general teaching and seminar rooms where possible) to display this work as part of a teaching programme. This aspect requires that we have an IT facility which is at least as powerful as the machines used for the generation of the work in the first place.

The Bonington Lecture Theatre was equipped with a Barco data projector about four years ago, this was the best model available at the time, capable of the highest resolutions and scan rates available, and remains up to date in its capabilities. Efforts to compromise the specification at the time of purchase were resisted. A computer has been installed recently which should cope with the work that is being produced at the present time and should be good enough for the

foreseeable future. The computer is a PC compatible, but most application software in use in the Faculty is available for both PC and MAC formats, with file format commonality, so there should be no problem with work generated on a MAC. The facility is available to plug in a MAC relatively simply when required.

Care needs to be taken in the future to keep the facility up to date and foresee as far as possible any improvements needed, perhaps this could be a regular agenda item for the Faculty IT group. At the moment we have only one portable projector in the department capable of limited data projection for use in other teaching areas although a second is under consideration. The price/performance ratio is still coming down for this equipment and we need to keep an eye on the possibilities of extending this provision.

3.2.3 Statement by Mr Des Gearing, Bonington Lecture Theatre Technician.

Mr Gearing outlines the developments which have taken place in the Bonington Lecture Theatre, the provision during the 'Digital Futures' series and anticipated future developments. The statement concludes with a List of Bonington Lecture Theatre equipment (as of February 1998) prepared by Mr Gearing.

TECHNICAL I.T. SUPPORT FOR THE DIGITAL FUTURES LECTURES

The Digital Futures' series of lectures were delivered in the Bonington Lecture Theatre which is one of sixteen lecture theatres at the City site of Nottingham Trent University. The projection room of the theatre still contains analogue audio sound and older systems of visual projection which are still used on a regular basis. The challenge has been to incorporate the latest digital technology into a user-friendly multi-media facility to accommodate the diverse nature of the faculty of art and design.

Bonington Theatre has been transformed in the provision of information technology digital support for lectures. It now has, as its centre piece, a Barco 800 graphics video projection system which is capable of receiving analogue video and digital information from a variety of different sources such as U-matic and SVHS video cassette recorders and P.C. or Apple Macintosh format computers.

The Barco projection system is permanently installed and displays its presentations on a motorised screen approximately 5 x 4 metres in size, which is installed at the front of the lecture theatre.

The provision of such equipment was vital to the delivery of the Digital Futures series of lectures as it provided both innovative and informative I.T. digital information by linking via an interface to a laptop P.C. situated at the lectern to the Barco projector system and linking the laptop P.C. to the University network system which, in turn, incorporates access to the internet. With the variety of software available from the P.C. and linking to the internet, this gave the widest possible access to digital information technology and displayed it on the large screen giving maximum visual impact to the audience.

The theatre also incorporates a four-speaker stereo sound system which, when linked to the P.C. at the lectern, facilitates the use of compact discs played via the computer to compliment the visual aspects of the lectures, as was the case in this series of lectures.

The Bonington Theatre continues to evolve and it is envisaged that by Easter 1998 a new lectern will be installed which will have a permanently installed P.C. with CD and zip drive and a video cassette recorder. This will alleviate the need to temporarily connect computers at the lectern and will complete the range of IT support available in Bonington Theatre.

Technical Specifications for the Bonington Lecture Theatre: April 1998

Computer

Hi grade Axion PV fitted with a P200 200 MHZ micro processor and composite video output was provided via a PVZTV graphics card port utilising RS232 protocol (bytes are sent with 8 bits, no priority, stop bit, at 4800 baudrate).

Interface

The interface between computer and projector was provided via an "inline" 2080 computer composite video interface for PS2 computers and has an operating frequency of 65KHZ to 90KHZ which is fed to the barco projection system in RGB and sync format.

Projection System

The barco 800 projector used a remote controlled video and data source selector (RCVDS 800) which makes it possible to select any of 10 sources connected to the projector, communication cables used were RSZ32/422 which communicates between projector and the RCVDS 800.

Projector specifications were set and used as follows:

scan frequency	horizontal	15-90KHZ autolock
	vertical	45-120 KHZ autolock
Retrace time	horizontal	2-5 seconds
	vertical	200 seconds
RGB Bandwidth	6MHZ phase lock looped	
Optical Resolution	10 lp/mm	
Light Output	825 Lumen at 10% peak white	
	575 Lumen at 20 peak white	
CRTS	High definition liquid cooled 8" CRTS	
Lenses	High definition full colour corrected F1-06 hybrid lenses.	

3.3 Students attending the course

The students who undertook these assessments were/are competent in their use of I.T. and familiar with the intricacies and potential of the Internet. Their assessments do not particularly focus on "I.T. equipment in the lecture theatre" but rather the effect - and failings - of the Lecture content as a whole!

3.3.1 Informal comment on Lecture Series by Jonny

From: AF700220@ntu.ac.uk[SMTP:AF700220@ntu.ac.uk]

Sent: Tuesday, February 24, 1998 12:28 PM

To: Smith, Barry

Subject: Re: Return of assignments...

"Carry on series" for dig-fut ?

You mean you need somewhere else to take it ? Or you wish to have the class run by Sid James ?

I think your initial concept was a good one, however I think that you needed better facilities to run the module. I think access to some of the more specialised packages was needed. I got the feeling that the module was aimed at technophobes a bit, I think they only conquer their fear through experience.

Hands on practice of "digital" applications was lacking imo. Email is a good starting point but I think that other applications like Cubase and Photoshop needed to be looked at.

I'm not sure what your initial brief was though, so I may be taking the module away from the original idea.

I think that your problem will always be that there is too much stuff to cover and too little time to deal with it in any detail. I think the talents of the more computer literate students should have been used, maybe some sort of skill share session. People will familiarity with different applications taking others through the basics of them. Well good luck in the (digital) future

3.3.2 Formal assessment of Lecture Series by Jode

IT equipment in the lecture theatre

I never really considered that technical support could be so difficult to organise in the lecture theatre. Indeed I would have considered access to these resources a trivial or minor detail in the presentation of a seminar. However as Barry Smith has adequately demonstrated in the recent 'Digital Futures' lecture series such modes are a vital and integral to the future of lectures. A scopophilic sensibility or 'synesthetic' appreciation of information. A world well inducted in the gambut of multi-media influences brought to our institutional space of learning for the purposes of education. Giving us a sensory input second only to the tactile application of such resources, a lack which was duly noted by several members of the group, a lack not remedied, or addressed with any satisfactory solution. Indeed the limitations of the lecture theatre and available resources far out weighed the interest in practical application and Barry is to be commended on using what was available so innovatively.

What was it then that was so agreeable about the use of video and computer technology? It is simply that there has been, in recent years, a marked investment of research, a preoccupation with areas of knowledge though understood but reworked under new impetus resulting in new thinking. Demonstrative archives of information exist covering a huge array of topics and can be located on the WWW or on Video. These areas of knowledge become immediately accessible through the investment of 'time' and of 'passivity' on the part of the watcher, who through the assistance of information's pseudo visual counterpart may recall details lost in the common teaching process. These visual maxims create areas of entertainment which aid the learning process however they must never gain a status beyond being the tools of such attainment. We cannot underestimate their value nor can we place them as more important than the other tools available to us. Engaging with the problematic operation of an object or discussing a conceptual idea cannot be underestimated. It is fundamental that we do not become a nation of automatized people echoing the trivia of a badly worded documentaries, that is why I invest the word Pseudo not with notions of the sham but more an element to be dealt with, with caution. The use of technological equipment in the lecture theatre requires a sensitivity to the pace of presentation. This can be undermined in value if - for example - we were to receive a comprehensive set of demonstrations in the lecture space and find that it is where the information remained; locked in a cerebral sphere of semi-useful, non- practical applications of technologies beyond the un-inducted students capabilities. Certainly we were taught strategies for acquiring the data we required to build - for example - a web site but the reality of achieving this was something of a nonsense without additional guidance. The broadening of perceptions in a rapidly expanding genre of interdisciplinarity could be so enhanced by simply having better equipment available to students and tutors alike. For this reason I would like to mention that Barry was clearly struggling to demonstrate what modern technology was capable of in the series largely due to the unportability of powerful P.Cs from resource rooms, but also because the actual quality of programs available to him to demonstrate were limited.

3.3.3 Formal assessment of Lecture Series by Toria Power

DIGITAL FUTURES - IT REPORT

There are certain basic technologies that one comes to expect to be used within lectures such as slide projectors, O.H.P's and videos which are able to be installed in any lecture environment with relative ease. The digital futures lecture series used these and also took the use of technology one stage further (as was its purpose to inform us, the students, of the capacity for technology) Within the lecture environment we were mostly shown videos showing the capabilities of IT which was very good, it enabled me to understand what was actually possible.

The videos and other technology used were a useful learning tool, it broke up the lecture and used sensitively can impart knowledge well. It is however very scopophilic, encouraging looking rather than personal practical application.

For example, we were shown a video about William Lathem, a man who made computer art. It was inspiring being able to watch the video, we could visit the web site in our own time but we could not have a go (unless we purchased a computer and the correct CD ROM !) I found that the teaching was very brief, there was no detailed coaching. I believe this will have been due to having only one hour contact time per week and there being so many students with many

different levels of understanding, from never having used a computer to being able to create ones own web page.

When we were shown how to guide around the Internet by the computer screen being projected (somehow, one bit of technology not explained) onto a large screen in the lecture theatre, I found that I could have done with a higher level of teaching, whereas after being taught about media presentations through a computer slide package which was available on certain computers in university, I do not know where I might find these computers or how I would use the package. It seemed very "go and look in your own time" there was no nitty gritty. Perhaps being given some good old fashioned handouts on the subjects we were being taught about so that when we were actually in front of a computer we had a guide to follow, or small learning groups would help.

I do consider that the IT was advantageous as I believe when being taught something that will eventually be a practical skill you need hands on teaching, the information needs to be tangible. Rather than someone just saying "you can do this and that" we are able to see evidence, practical and visual demonstration.

3.3.4 Formal assessment of Lecture Series by Conor Healy

Dear Sir/Madam,

March 28, 1998.

It is important to show students how easy it is to access the Internet. The demonstrations given should be followed up immediately with practical experience. A few hours should be spent on the first lecture so to ensure that the knowledge is gained by the majority. Students must see to believe. However, it is impossible to teach 70 fresh students anything in the Bonington theatre regarding Dig. Fut., so only a small portion of time should be spent there. The time it takes to set up the equipment which should really be there in the first place slows down the momentum that you should be trying to build

I felt the first 3/4 lessons lacked a coherent structure because of this. The most interesting aspects will always be what you learn yourself, the least being what you know already. So it is important to guide those who want to learn to where they should be heading. It is one thing to say that the internet can take you anywhere, it is another to know where you want to go and how to get there.

Each art course has basic desires, and so a list of museums/galleries where we can see works of art/photography would be a good start. For others, it could be where and how to get tickets to the W. Cup. or how to download the latest Rolling Stone magazine or Prodigy concert/CD. Some research into 'hot' websites prior to a demonstration will bolster enthusiasm while naff sites only hinder.

It is important to counter frustration that many feel with the internet. By investing in books on how to get the most from the internet or how to create websites will allow those who really want to go all the way the opportunity to do so. Software such as Photoshop could be introduced. Students need to pick up something tangible fast otherwise the gobbledygook wins through. IT is a language and so Dig. Fut. should explain how to communicate. What is a server? What does html stand for? What is Yahoo? How can I download jokes, newspapers, images? All this should be explained and each student should have to pick at least one item a week to download onto disk? A project should be set within the first month. It can be to build your own html or find out as much information on a particular subject, where they are going on an exchange or on an artist. Students should have a disk from day one so they can save anything that they find interesting.

Overall I found Dig Fut. valuable. Barry Smith showed great enthusiasm in a class where it was lacking from the students. I hope that changes next year.

Kind regards,

Conor Healy.

P.S. - I sent an e-mail to my sister and a letter on the same day. Guess which got there first! The snail won while the rabbit fell asleep on Microsoft exchange! Technology at least in University sometimes has it's limitations!

4 Observations

The term 'Observations' has been preferred to the term 'Recommendations' which conventionally conclude Reports on the basis that 'A Case Study' (which by definition is the equivalent of a survey limited to one!) is not really in a position to 'recommend' action but may raise issues of relevance to the ongoing debate about I.T. provision in Lecture Theatres. These 'observations' (italicised in the main text) are collated together (sometimes in a slightly edited version) in this section for convenience.

- 4.1 (from 2.2.5) The debate on the advantages and disadvantages between the choice of IT equipment permanently installed in the lecture theatre and/or imported by the lecturer is doubtless set to continue awhile. The former inevitably tends to demand standardisation - which may be problematic for some applications or demonstrations - whilst the latter tends to raise problems of compatibility and time. Both demand familiarity and a proper allocation of preparatory /rehearsal time to ensure that the final delivery at least stands a chance of being impeccable. Whilst one can be sympathetic to prevailing conditions which give rise to 'hotbedding' lecture theatre timetabling in order to maximise utilisation at peak times, the advent of IT tends to exacerbate technical hitches which are antithetical to quick change-overs whichever type of installation is preferred. It goes without saying but perhaps needs to be re-stated that the specification of equipment and services - of what is and is not available - needs to be clear at the earliest opportunity together with indications of how any shortfall might be met.
- 4.2 (from 2.2.7) There is an inevitable tendency for 'supply' of IT facilities in lecture theatres to follow perceived 'need' (rather than a policy or ability to provide an ideal state in all lecture theatres). Given prevailing economic restraints and the rapid development of IT hardware and software which causes costly equipment to rapidly depreciate, this seems a generally acceptable and sensible policy. The continuing breadth of demand upon available resources (both IT and non-digital) inevitably places restrictions on 'ideal state' plans except in particular 'showpiece' installations which can also prove problematic. Both situations place on the individual lecturer a new burden of responsibility, knowledge and need for familiarity (and thus Staff Development) and upon the 'department' (or administrative unit responsible) provision of appropriate maintenance, instruction and technical assistance. The current rate of response to these demands across the sector (as distinct from specialist sections within it) tends not to be keeping pace with the technological changes.
- 4.4 (from 2.4.5) Where IT and non-digital provision is accomplished in stages (which tends to be the most common form of provision enhancement) it is essential that advance design planning attempts to take into consideration future developments to ensure that all facilities are independently and separately easily available both to the speaker as well as external control (e.g. by a technician in a lighting bay). Not to provide this facility, or to provide it piecemeal, significantly undermines the multi-media capability of the provision which it is the intention of staged provision to enhance.
- 4.5 (from 2.5.3ii) The bridge, it seems, between the everyday and I.T. is still frequently made of paper. The need for attractively designed 'handouts', preferably in colour and essentially in sufficient numbers for one per person attending the lecture, should not be under-estimated (nor under-costed); few web-sites currently make anything separately available but assume that the screen image is sufficient. This then begs the question of adequate local colour printing facilities and course budgets.
- 4.6 (from 2.7.2) An effective e-mail facility and in particular the individual and personal attention it affords and encourages running alongside the largely impersonal formal lecture makes for a very effective balance between general, universal information and personal development. It offers an opportunity for the traditional "Are there any questions?" at the conclusion of a lecture (which can so often result in an unwelcome and distracting question, an embarrassed silence or a

collective pressure daring anyone to delay ending the proceedings further!) to become a genuine opportunity to personalise the lecture.

- 4.7 (from 2.7.11) From the outset of the Lecture Series the effect of IT demonstrations in the Lecture Theatre was to create a high demand for hands-on experience of 'how to do it'. In part this was undoubtedly due to a number of specific factors: the subject matter of this particular series, the relationship between content, what was being demonstrated and the students' own professional practice, these particular students being 'studio based' in their main courses. Even so it is at least likely to feature in any lecture series whilst the technology contains an element of unfamiliarity ('magic') to the spectator. Few people today are going to watch a film or video wondering 'how do they do that?' but e-mail, the Internet and various multi-media applications (e.g. audio CDs with video tracks) have not yet reached that level of familiarity and so such questions were constantly asked (even of PowerPoint presentations!) Also, given that most courses expect the student to make presentations to a peer group at some stage, there's a healthy interest not only in what the technology can provide but how to manipulate it.
- 4.8 (from 2.7.15) My final observation on the e-mail adjunct to the IT in the Lecture Theatre may only be specific to this particular instance - this is, after all, one Case Study. But it would be that in its impact, effect and usefulness the e-mail facility and its corollaries were of equivalent significance to the lecture theatre provision: that the one is the catalyst to getting the other to work to best effect (and vice versa). The view, in various forms, that "IT will change the way we teach" is frequently heard but some of the ramifications may not be wholly anticipated. Familiarity with an e-mail culture and the current emphasis upon 'interactivity' in various forms may well change some basic assumptions, not least that 'the lecture' is essentially a Gradgrind pot-filling exercise rather than a tea-party. I.T. 'in' and 'around' the Lecture Theatre could well significantly be made to fundamentally change the nature of the 'lecture', particularly when it is part of 'a series'. It does not necessarily follow that 'the lecturer' undertakes all the follow-up exchanges (any more than s/he would be expected to undertake all the 'seminar or tutorial follow-ups' from a traditional 'general lecture' programme). This may begin to spin 'the lecture' into becoming a multidimensional event. But I appreciate that this is probably a minority, and possibly a wrong-headed, view from a sample of one Case Study.

5 Appendices

For ease of reference Appendices are numbered according to the section and subsection to which they mainly apply in the main body of the text.

- 2.1 Module specification
- 2.2 "A True Story"
- 2.3 "Digital Futures" initial I.T. Survey and results
- 2.4.2 PowerPoint (extract): presentation of results of survey
- 2.4.3 PowerPoint (extract): presentation of structure of course
- 2.4.6 Screen-dumps as handouts: illustrating AltaVista searches (1 example)
- 2.5.2 extracts from 'a model' Lecture Theatre User Manual
- 2.7 A selection of e-mail correspondence and examples from the Distribution List
Note: This appendix is only available in the online version of this report.
- 2.7.14 "The Two Ironies":
 - e-mail 6th February 1998 predicting new student e-mail system [63]
 - e-mail 25th February 1998 announcing new computer in Bonington L.T. [64]
 - e-mail 2nd March 1998 announcing new student e-mail system operational [65]
- 3 Guidelines on contributing to the report... (staff)
Guidelines for students contributing to the report...

APPENDIX 2.1

Module AVP202: Specification

Module Specification

Faculty Art & Design

Course / Course Cluster Departmental Elective, Visual & Performing Arts

Module title Digital futures: from tools to robots and aliens

Level	2
Credit points	10
Pre-requisites	None
Co-requisites	None
Reference	AVP202
Semester	1
Status	Departmental Elective

Aims

To provide introductions and insights into a range of IT applications, which might currently inform the students' own experience and practice in the visual and performing arts.

To develop students understanding of the current and future opportunities offered by 'information technology' (IT) and digital invention with particular emphasis upon arts practice, research, current achievements and potential.

To explore predictions of future developments.

Indicative Syllabus

Current applications of IT (Communication: e-mail, video-conferencing; Internet, databases etc) offer the artist new if complex tools: the course will initially address the advantages and complications of the artist using such facilities. However predictions abound that such applications are pedestrian compared to likely future developments: the course will then address and assess some predictions around the themes "As machines become more complex, they become more life-like" and "by 2005 humans will no longer be the most intelligent life form on earth!"

Indicative Reading List

Out of Control: the new biology of machines, K Kelly,

Workload

Hours Ft/SW

Contact Time	10
Directed Learning Time	20
Independent Learning Time	70
Formal Assessment Time	0
Total Workload Time	100

APPENDIX 2.2

"A TRUE STORY!"

I suppose as someone originally operating as a 'Lecturer in Theatre' I have a conceited view of my own sense of timing: at least I enjoy, given a 'formal lecture' situation, the opportunity for some 'drama' - the dénouement, the sudden gesture, the lengthy silence. So it was probably this sense of 'the performance' that led me to inquire of the Bonington Lecture Theatre Technician if I could operate a video-player from the front of the lecture theatre, cuing it myself rather than depending on the standard system of introducing the 'clip' and then waving to him peering from a projection box or pressing a buzzer to ask him to dim the lights etc - a process which in my eyes was likely to get the extract off to a shaky start and an even more grinding halt.

Despite it being the Summer Vacation and arrangements to check technical aspects being beset by all manner of complications I was delighted to be told that, though rarely requested, it was *easily* possible for the lecturer to control video from the front dais area. A date in the "pre-term administration week" was set to test out the facility and I duly arrived clutching VHS tape. A video-player magically appeared on the front table with a lead going to a socket in the wall linked to the overhead video projector. Despite the fact that the light dimmers were on the wall some 5 paces away - which would make some aspects of perfect synchronization difficult - it was not an impossible situation. The video worked perfectly, casting an impressively large image with clear soundtrack. This, if a trifle testing for handling lights, notes, video cue and delivering Riveting Phrase with aplomb, was manageable.

It was only as I was leaving that I happened to ask where the computer would be situated.

"What computer?"

"The computer that I'm using in the lectures."

"We haven't got a computer."

"What d'you mean you 'haven't got a computer', I'm talking about 'The Lecture Theatre Computer'...? It's a PC isn't it, they said it was a PC. Don't tell me it's a Mac, is it?"

"There isn't a computer here."

"There isn't a... A computer? You mean there isn't a computer?"

"But... but...! But I've been specially booked into this Lecture Theatre to use... the whole lecture series is about computing... I've been booked in to use... they changed the times... they couldn't get me in at the standard time so they changed the time... so's I could use the computer..." The word 'babbling' comes to mind. Finally: "You're kidding me!"

"No I'm not, there's no computer here. There was *talk* of getting a computer, in fact there was talk ages ago of *getting* a computer - that's probably why the office probably think there's one here now... But somebody raised the problem of security and then they wanted a special dais built and then I think there was a bit of a tiff about who was paying for it and who could use it and what was going to be needed on it and then it was the Summer holiday.... There's no computer here, I assure you. There will *be* a computer. Sometime. Sure as eggs, there will *be* a computer, probably more than one in time. But not now, not till Christmas now at the earliest.... When d'you start your lectures?"

"Next Monday."

"Hhh! Not a hope!"

There followed a dismal conversation: Graphics and Photography, it transpired, were the only art courses to date that had *used* a computer within the lecture format and they had both lugged a Mac in for a special Visiting Lecturer occasion (and both happened to have accommodation adjacent to the Bonington Lecture Theatre - my decidedly unluggable PC was 300 yards away in a different building and the thought of carting tower and monitor etc through winter weather on fifteen consecutive weeks did not appeal). There must be an alternative.

Having been at the university nineteen years I knew some dodges and had some favours to call in...

BS September 1997

See Appendix 2.7 [64] for developments in 1998.

APPENDIX 2.3

"Digital Futures": Initial I.T. Survey and results (extract)

TNTU: Department of Visual & Performing Arts

"Digital Futures": Semester 3 Elective (1997/98)

Initial Survey, Week 1

Points of contact: Barry Smith, Live Art Archive

Voice mail: (0115) 9418418 (extn 4219)

E-mail: barry.smith@ntu.ac.uk

Your name:.....

From paper to pixels

This initial survey (Week 1) is paper-based and requires your presence in the Bonington Lecture Theatre... the final Evaluation Survey (Week 15) will be remote and digital. Sign of the times I s'pose...

Topics which will feature in the series: (not necessarily in this order) .

- Art on the Net
- Communication: e-mail, lists, virtual libraries, virtual education
- CyberWars: real, flame and virtual
- Cyborgs, medical developments, Artificial Intelligence
- Fiction - virtual and real: from words to invading aliens
- Hackers/crime/security; copyright and copyLeft
- Image and sound: design, composition and manipulation
- Internet, Websites, HyperText and multimedia
- IRC/MUDs/MOOs and digital games
- Netsex, porn, violence and NannyWatch; freedom/censorship
- Political, gender and Third World issues on and of the Net;
- Space - real and cyber: Black Holes and hyperReality
- Transportation and time-travel
- Virtuality: banking, shopping, selling, homes, people, world.

You can influence the extent to which any topic is featured by ticking FIVE topics which interest you most at this stage.

If you wish you can also note below any additional "digital future" topic(s) which you hope the lecture series will at least touch upon.

Note: You will be asked to leave this completed Survey at the end of your first session; it will be returned to you at the beginning of your second session with a list of e-mail addresses and summary of the poll.

TNTU: Department of Visual & Performing Arts
"Digital Futures": Semester 3 Elective (1997/98)

Admin Week 1: details of persons registering on the course:

Your name:

Your "home" institution (if not TNTU):.....

Your TNTU Faculty (if not Art and Design):

Your Department (if not Vis & Perf. Arts):

Your main degree course:

Your e-mail address*

*Note 1: It is a *pre-requisite* of this course that you have a current and accessible e-mail address (even if you don't yet know how to use it). Computer-User Registration is free for all TNTU students and if you don't have a registration name and password (or have forgotten one or both of them) you must ascertain both before you can be considered registered on this course. If necessary details of how to obtain these individual codes will be given at your first meeting.

*Note 2: Details supplied above (including your name and e-mail address) will be given to all registered members of this course. All other individual details requested below will remain confidential except by way of summaries (e.g. averages) which will help to determine course content, direction, starting point etc.

In case of illness/non-attendance at any lecture/seminar/workshop please leave a message on (0115) 9418418 extn 4219 or e-mail barry.smith@ntu.ac.uk .

Any amendments/additions to the standard programme (e.g. workshop times, postponement of a session through staff illness) will be notified to all registered participants by e-mail.

TNTU: Department of Visual & Performing Arts
"Digital Futures": Semester 3 Elective (1997/98)

General levels of I.T. (Information Technology) familiarity/ experience/ skills/ knowledge:

(Please indicate on a scale 0-3 where

- 0= none
- 1 = a little
- 2 = familiar/practised
- 3 = advanced

scale 1-3

A. WORD PROCESSING: (name package(s) most familiar to you.....)	
B. E-MAIL (TNTU and/or private subscription?.....)	
C. "LISTS" AND "DISTRIBUTION/BULLETIN BOARDS" (name any current subscriptions	
D. THE INTERNET (name any sites regularly visited (!)	
E. CREATING INTERNET PAGES (HTML) (give URL of any created	
F. CD-ROM DATABASES AND INFORMATION SOURCES (name any regularly used:	
G. DIGITAL SOUND/IMAGE PROCESSING (name software most familiar to you.....)	
H. IRC, MUDS, MOOS (name any regularly played	
I. DIGITAL GAMES (name any regularly played	
J.* OTHER I.T.-related experience/knowledge (1) (give brief details:	
K.* OTHER I.T.-related experience/knowledge (2) (give brief details:	

* Note: J and K can be used to indicate other individual I.T. interests even if your practical experience of them is only "a little" or even "none". (See also "workshop preferences", bottom of p.4.)

TNTU: Department of Visual & Performing Arts
"Digital Futures": Semester 3 Elective (1997/98)

The *only* way to familiarise yourself with the *practical* aspects of I.T. (e-mail, "Lists", websites, surfin' etc) is by *doing* it - lectures, talks, demonstrations, seminars etc can all add to your understanding (particularly if parts of it are already familiar) but they won't necessarily be that helpful when it comes to negotiating practical problems. The "Digital Futures" lecture series is mainly discursive. Therefore if you want to develop additional I.T. skills you must be prepared to spend time in the University's computer resources (which are fairly sophisticated, available 24 hours a day and accessible if sometimes very busy). In some instances these resources may be supplemented by specialist departmental/course facilities and/or you may have your own facilities. Much of the skill of using IT is learning what does what, how, when you can access it to attempt what you want to do and who's on hand to help you if things don't work as expected! To achieve all this perseverance is necessary!

The "Digital Futures" course offers a chance to "get started" into unfamiliar territory - whether that be sending and receiving e-mail or creating cyborgs (but be warned, my practical knowledge of the latter is limited...). Familiarity with "digital futures" is intended to be "empowering" and, in IT at the moment, where there's a will there's a way! It may take time and effort but you can get there!

If you would like some additional "hands-on" sessions (which as far as possible will be arranged as group sessions in TNTU Resource Rooms) please indicate *when* your timetable

- a) permits you to be free of other commitments (MARK CHART WITH A TICK!):
- b) does NOT permit you to be free (DELETE TIMES ON CHART):

MORNING	AFTERNOON
Monday	Monday
Tuesday	Tuesday
Wednesday	Wednesday
Thursday	Thursday
Friday	Friday

If you are opting for these class sessions please select any *two* items from page 3 of these notes that you would be particularly interested to improve. It may not be feasible to offer separate sessions on all topics but your choice will help to plan overall preferences. Your options should be realistic: if you are unfamiliar with e-mail creating cyborgs might prove difficult in the short term!

Your workshop preferences: Items A, B, C, D, E, F, G, H, I, J*, K*

(ring 2 letters, as appropriate)

*Note: J and K offer additional areas not specifically listed on p. 3.

TNTU: Department of Visual & Performing Arts
"Digital Futures": Semester 3 Elective (1997/98)

ASSESSMENTS AND ASSIGNMENTS

For undergraduates registered on the "Digital Futures" course (10 credit points) there is a *requirement* to attend the main lectures/seminars and agreed workshops *and* to complete your own assessed work during the semester. Assessed work may take several forms *providing it is agreed in advance* (see below) as being adequate to fulfill the assessment requirements. It must be presented in a "permanent" form (e.g. paper, disc, CD-ROM, website etc) by the standard deadlines; if in a digital format it is the responsibility of the person submitting the work to ensure that it can be accessed for assessment purposes!

You are advised to develop a piece of work with some links into your main area of study (though this is not an absolute *requirement* and does not feature in the assessment criteria). The work, however, must have as its central concern "digital" developments in one guise or another. Under standard Assessment Regulations it is not possible to submit the same work for two separate assessments: thus work submitted in fulfilment of this course must be the original work of the person submitting it and may NOT be submitted in whole or part as fulfilment of another assessment. (It could however quite properly form an adjunct or "appendix" to another assessment providing its origins are clearly delineated at that time.)

Below are listed a few possibilities to prompt your thinking about a suitable assignment:

1. An essay arising from one or more of the issues prompted by the Lecture Series or of particular concern to the individual arising from the study of "digital futures".
2. A log-book (or similar) charting the individual's current explorations of one or more of the digital topics raised in the Lecture Series making clear the new territory examined/explored and reaching some concluding statements.
3. A web-site (or equivalent) developed by the individual to explain/convey information or to stimulate debate around an appropriately related area.
4. Collaborative proposals (both within and outside the registered group) may be acceptable providing that the contribution of any individual whose work is to be assessed remains distinctive and traceable!

It is essential to get *prior* agreement about the broad scope and manner of approach of any assessment work and a form (sorry!) is attached for this purpose. Remember that this "elective" is worth 10 credit points and the work undertaken should reflect that weighting in this semester's total workload. Also remember that a key aspect of the assessment criteria is your research/advancement over the course (so if you are already a guru of website design there may not be much point in just tossing off another one!)

TNTU: Department of Visual & Performing Arts
"Digital Futures": Semester 3 Elective (1997/98)

Assessment/Assignment agreement

Your name:

Your main degree course:

Your e-mail address:.....

Give a **brief title** of your proposed assessment/assignment (max. 20 words)

.....
.....
Give a **brief description** of the proposed project (max. 100 words)
.....
.....
.....
.....
.....

Signed..... Date:

Once completed you should hand this to Barry Smith at one of the weekly sessions. At the next session he will return a photocopy to you with comments. Agreement on the scope and format of the proposed assignment is necessary and should be obtained before work for assessment is undertaken. The latest date by when assignment proposals must be *agreed* is Monday 1st December 1997.

Tutor's comments:

BS

Digital Futures: Results (extract) from Week 1 survey

FAVOURITE TOPICS:

ART	xxxxx/xxxxx/xxxxx/xxxxx/xxxx	24	3rd=
E-MAIL	xxxxx/xxxxx/xxxxx/xxxxx/xxxxx/xxxxx/	30	2nd
CYBERWARS		00	14th btm
CYBORGS	xxxxx/xxxxx/xxxxx/x	16	5th=
FICTION	xxxxx/xxxxx/xxx	13	8th=
HACKERS	xxxxx/xxxxx/xxxxx/	15	7th
IMAGE/SOUND	xxxxx/xxxxx/xxxxx/xxxxx/xxxxx/xxxxx/xxxxx/x	36	1st *
INTERNET	xxxxx/xxxxx/xxxxx/xxxxx/xxxxx	24	3rd=
IRC	xxxxx/	05	13th
NETSEX	xxxxx/xxxxx/xxxxx/x	16	5th=
POLITICAL	xxxxx/xxx	08	12th
SPACE	xxxxx/xxxxx/xxx	13	8th=
TRANSPORT	xxxxx/xxxxx/xxx	13	8th=
VIRTUALITY	xxxxx/xxxxx	09	11th

DECLARED LEVELS OF EXPERTISE:

	Level 2/3	Level zero
word, wp, x	3	01
photoshop x	2	32
image/sound	0	20
internet	1	27
email	1	28
games, x, x, x, x, x	6	19
irc	1	38
cd-rom	1	31
html	0	45
other: accounts	1	n/a

PowerPoint Presentation: Results of survey (extract), notes APPENDIX 2.42



**CYBORGS and
ARTIFICIAL INTELLIGENCE**

including medical developments
robots and humanoids
AND...



DIGITAL FUTURES



NETSEX, PORN, VIOLENCE

AND THE ISSUE OF FREEDOM
AND CENSORSHIP
ON THE INTERNET



DIGITAL FUTURES



IN THIRD PLACE

and BRONZE MEDAL WINNER
is....



DIGITAL FUTURES



ART ON THE NET



DIGITAL FUTURES



in SECOND PLACE

and SILVER MEDAL WINNER
is....



DIGITAL FUTURES



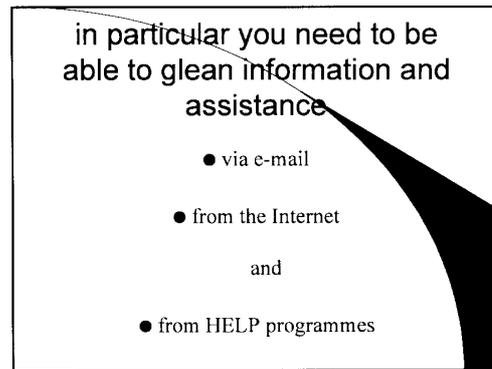
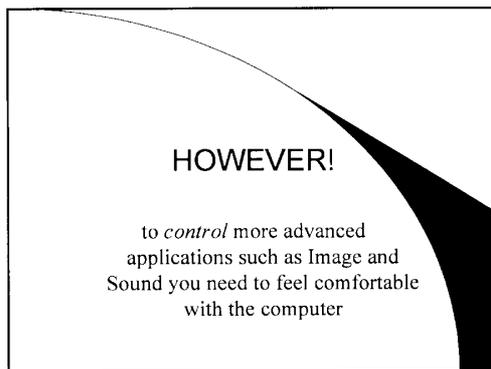
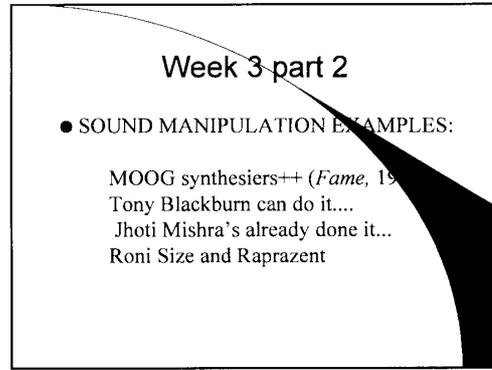
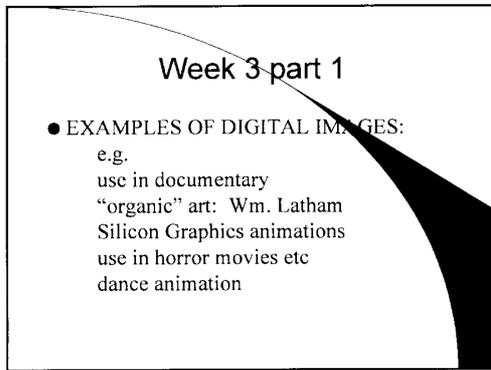
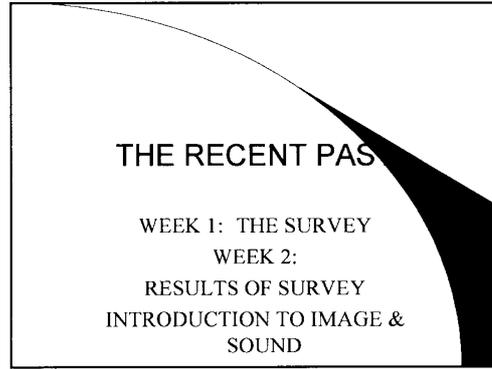
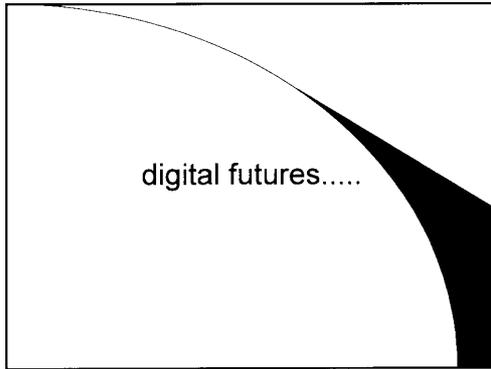
COMMUNICATION

including e-mail,
lists,
virtual libraries, virtual education

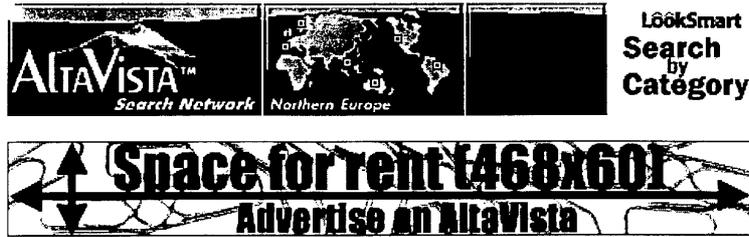


DIGITAL FUTURES

Appendix 2.4.3



Appendix 2.4.6



Search for documents in

search

[Help with Query](#) . [Advanced Query](#)

Documents 1-10 of about 2000000 matching the query best matches first.

1. Women in Computing: Letters

Letter to the editor. Just reviewed your series through the Providence Journal's web site. I thought most of what was said interesting, but why did you...

<http://www.sacbee.com/news/projects/women/lein.htm> - size 1K - 03-Mar-97 - English

2. Women in Computing: Letters

Letter to the editor. I was amazed at your piece on secretaries and computer skills. It mentioned that Diana Perez Figueroa uses a Macintosh in her job...

<http://www.sacbee.com/news/projects/women/lawler.htm> - size 1K - 03-Mar-97 - English

3. Association for Women in Computing (24)

BCS Home / Calendar / Magazine / Table / By Group / By Date / By Topic. Live From Networks Expo: New Network Wisdom. Presented by. Association for Women...

http://www.bcs.org/Calendar/Feb96/meet_24.html - size 1K - 10-Feb-96 - English

4. BGSU Women in Computing - Meet Them

BGSU Women in Computing. Meet the WiC at BGSU. " Computer Science is the fastest growing field. There are so many jobs out there for CS majors and plenty..

http://www.cs.bgsu.edu/WIC/WIC_BGUNGRAD.html - size 1K - 15-Nov-96 - English

5. Association for Women in Computing

Association for Women in Computing (AWC) The information on about this organization was supplied to WomWeb by AWC/NYC. General Description. The national...

<http://www.womweb.com/awc.htm> - size 6K - 22-May-96 - English

6. Minerva's Machine: Women in Computing

Text-Only Menu] MAC / 95-Oct-17.

<http://www.acm.org/minerva> - size 0K - 25-Mar-97 - English

7. Women in Computing Bibliography

PROJECTS | NEWS | SACBEE HOME. Copyright © 1996 The Sacramento Bee. For more information: Thank you for visiting our Web site and reading these...

<http://www.sacbee.com/news/projects/women/wcbiblio.html> - size 10K - 21-May-97 - English

8. Association for Women in Computing: Puget Sound Chapter

Association for Women in Computing Puget Sound Chapter. P.O. Box 179 Seattle, WA 98111 Hotline: (206)781-7315 Email: awc@scn.org. Next...

<http://www.scn.org/IP/awc/awc.html> - size 6K - 21-May-97 - English

9. Women in Computing, Part 7

PROJECTS | NEWS | SACBEE HOME. Copyright © 1996 The Sacramento Bee. Raising computer-savvy kids. By Ilana DeBare, debare@well.com Sacramento Bee...

<http://www.sacbee.com/news/projects/women/wcraising.html> - size 4K - 21-May-97 - English

10. WICNET - CQU's Women in Computing Network

Women and Computing. * WICNET * The Women in Computing group have set up their own mailing list called wicnet. This list is the forum for female students..

APPENDIX 2.5.2

'A model' Lecture Theatre User Manual (extracts)

Welcome to the Lady Djanogly Lecture Theatre

As you step up to the Lectern Area facing the audience you are faced by 3 main items:

1. Wolf Visualiser
2. Control Screen (Touch Panel)
3. Twin Goose Neck Microphones

Behind you is a secondary cupboard with a computer monitor on it.

In the left hand side of this cupboard you will find the computer (Host P.C.)

And in the right hand side all the audio equipment for the Lecture Theatre, Sony Minidisc, Sony D.A.T. Denon C.D. Player / Cassette Player Combination unit as well as a Panasonic SVHS Video Player.

The pages following in this Manual will explain how to operate all this equipment to achieve the best presentations in this Lecture Theatre.

Operating the WolfVision Visualiser

To use the Wolf as a Traditional O.H.P.

1. Turn to the Main Lectern.
2. Select WOLF Tab on the Touch panel.
 - a. Select Below Lighting on the Touch Panel, the Wolf (just to your left) lights up. (DO NOT use the Above Lighting Function as Acetate Slides create glare.)
 - b. Place the Acetate Slide on to the lit Wolf
 - c. Once you have positioned your Acetate Slide correctly, select the 'IMAGE ON' button from the Touch Panel. (The image is now projected on to the central screen.)
 - d. Use the ZOOM & FOCUS functions to achieve the desired image.
 - e. When finished Select 'IMAGE OFF' and turn off Wolf by selecting 'Below Lighting' button.

To use the Wolf as a Visualiser

1. Turn to the Main Lectern.
2. Select WOLF Tab on the Touch panel.
 - a. Select the 'Above Lighting' button from the Touch Panel (The Wolf generates a small bright rectangle on the white surface.)
 - b. Place your paper, book etc. within the bright rectangle. (Whatever is in the rectangle will be displayed on the central screen.)

- c. Once your paper is positioned correctly, select the 'IMAGE ON' button from the Touch Panel.
(The image is now projected onto the central screen.)
- d. Use the ZOOM & FOCUS functions to achieve the desired image.
- e. When finished Select 'IMAGE OFF' and turn off Wolf via 'Above lighting' button.

SPECIAL FEATURES

There is a small button at the bottom of the WOLF Window marked 'Video Screen'. When selected a WOLF View Window pops up onto the Touch Panel in place of the WOLF controls, which gives a representation of the image being displayed on the central screen.

Very useful when using the WOLF as an O.H.P. as the 'Above Lighting' button cannot be used due to the glare factor, This window can be used as a lining-up function for your Acetate Slides.

Operating 'Host P.C.' computer presentations

- 1 Turn to the cupboard by the wall, slide open the left hand side door. Switch on the computer and monitor.
Log on as usual.
PowerPoint automatically starts up. Locate your presentation from Floppy Disc or from the Network.
Start your presentation on the first slide.
N.B. It is recommended that Network stored presentations are saved into your personal folder on the H: Drive, as it makes locating presentations far simpler as certain domains are not available on this computer.
- 2 Turn to Main Lectern.
3. Select P.C. Tab from the Touch Panel.
 - a. Select 'HOST P.C.'
 - b. Select 'DISPLAY'

FUNCTION BUTTONS

HOME	When selected it returns the presentation back to the first slide.
HIDDEN	Reveals any hidden slides in the presentation.
FORWARD	Acts as Page Up on a keyboard, advances slides or brings in the next line.
BACK	Acts as Page Down on a keyboard, moves presentation back one slide.

WHEN FINISHED

- 1 Select 'STANDBY'.
- 2 Close Computer down correctly.
3. Switch Off computer and monitor.
- 4 Close sliding door, but DO NOT lock.

SPECIAL FEATURES

There is a small button at the bottom of the P.C. Window marked 'Video Screen'. When selected a P.C. View Window pops up on to the Touch Panel in place of the HOME and HIDDEN function buttons.

This window gives a composite image of your slide which is displayed on the central screen, it acts as a cue so you know where you are within your presentation. De-select 'Video Screen' and the view window disappears and the HOME and HIDDEN function buttons are returned to you.

APPENDIX 3

GUIDELINES ON CONTRIBUTING TO THE REPORT ON USE OF I.T. TECHNOLOGY AS PART OF THE 'DIGITAL FUTURES' LECTURE SERIES IN THE BONINGTON LECTURE THEATRE SEMESTER 1, 1997-98.

The report is only concerned with the provision and use of IT (digital) equipment in lecture theatres in general and Bonington Lecture Theatre in particular.

Your individual contribution should not exceed 1 side of A4 in standard type (e.g. 12pt, 1 inch margins). It should be submitted as printed copy (which will be reproduced as part of the Report).

Any additional supporting information (up to 4 sides of A4) can also be included and may feature within an Appendix of the final Report. It obviously should not include any information regarded as confidential to TNTU.

The Report centres on the Bonington Lecture Theatre and the 'Digital Futures' series which occurred there in Semester 1, 1997-98. The lecture series commenced on Monday 29th September and concluded on Monday 19th January 1998.

The Report will refer to both 'permanently installed' equipment (as then, as now and in any future plans) and portable items installed for particular sessions.

It is understood and accepted that the extent to which individual contributions will be *specific* to the Bonington Lecture Theatre IT provision will vary (depending on individual roles and responsibilities). All contributors are requested to include Bonington Lecture by name within their range of references. Contributors whose role is closely or wholly connected with Bonington may find it is appropriate to *only* mention it to the exclusion of all others.

Contributors are free to include technical details and IT specifications as they feel to be most appropriate. One value of the case study is seen as the variety of views, skills and information which have to mesh to provide the best IT facility for the particular purpose of lecture delivery.

The deadline for receipt of contributions is 12 noon Friday 3rd April and no extensions are possible!

Contributions should be sent to Barry Smith at the Live Art Archive, Victoria Studios, Shakespeare Street by the closing date and earlier if possible.

If you require further clarification on any aspects please don't hesitate to contact me (Extn 4219, e-mail barry.smith@ntu.ac.uk).

GUIDELINES FOR STUDENTS CONTRIBUTING TO THE REPORT ON USE OF I.T. TECHNOLOGY AS PART OF THE 'DIGITAL FUTURES' LECTURE SERIES IN THE BONINGTON LECTURE THEATRE SEMESTER 1, 1997-98.

The report is only concerned with the provision and use of IT (digital) equipment in lecture theatres in general and Bonington Lecture Theatre in particular during the 'Digital Futures' series which you attended. The lecture series commenced on Monday 29th September and concluded on Monday 19th January 1998.

Your individual contribution should not exceed 1 side of A4 in standard type (400-500 words max, 12pt, 1 inch margins). It can be submitted as printed copy (which will be reproduced as part of the Report) or as an e-mail to barry.smith@ntu.ac.uk. If you choose the latter method you're advised to draft out your response and consider it as a 'statement' before sending it!

You can refer to both 'permanently installed' equipment and portable items installed for particular sessions. You can also refer to the follow-up workshop sessions.

You are free to include technical details and IT specifications as you feel to be most appropriate.

THE KEY QUESTIONS/TOPICS YOU'RE REQUESTED TO CONSIDER ARE:

- * did the use of and demonstration with IT equipment enhance or detract from the lecture series?
- * with reference to the IT aspects used/demonstrated etc, which were the MOST interesting aspects and which the LEAST interesting?
- * did the series meet your expectations in terms of range, sophistication and demonstration of IT aspects? how could it have been improved?
- * were any I.T. topics not included in the series which you think should have been included?
- * what (if anything!) did you learn from the lectures/ demonstrations? (and what from the workshop practice?)
- * any other comments?

The deadline for receipt of contributions is 12 noon Friday 3rd April and no extensions are possible! Contributions should be sent to Barry Smith at the Live Art Archive, Victoria Studios, Shakespeare Street by the closing date (earlier if possible). If you require further clarification on any aspects please don't hesitate to contact me (Extn 4219, e-mail barry.smith@ntu.ac.uk).

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