

Teaching electronic publishing: a Scottish example

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SUMMARY

This paper outlines the background to the introduction of an electronic (non-print) publishing strand to an undergraduate degree in publishing. The degree has already successfully incorporated desktop publishing throughout its editorial, production and marketing strands. Desktop publishing had enabled fulfilment of a primary educational aim of the course to integrate theory and practice but challenges remain before the commercial production of electronic (non-print) publications can be undertaken by students with equal facility.

KEY WORDS Publishing Teaching Electronic publishing Desktop publishing Non-print publishing
Simulation

1 INTRODUCTION

Napier University has been providing full-time undergraduate teaching in publishing since 1968. It has been organized around the three major publishing functions: editorial, production, marketing.¹ For some time this provision represented the sole full-time undergraduate degree in the UK devoted uniquely to publishing. Annual intake is fixed by the Scottish Education Department at approximately forty students but applications outnumber that quota in a ratio of something like 12 to 1.

This long experience, monopoly position and continued popularity might have engendered an element of complacency were it not for the enthusiasm and dynamism of the teaching team assisted by the advice and encouragement of industry representatives. The need to innovate and update is a personal, vocational and educational imperative within the course. Two waves of innovation are relevant here: firstly, the permeation of Information Technology, particularly desktop publishing, across the curriculum in the 1980s and, secondly, the attempt in the last four years to position electronic, in the sense of non-print, publishing within the course.

2 THE FIRST WAVE

In the early 1980s the need to incorporate IT within the teaching of publishing led to participation in industrial panels monitoring the development and adoption of SGML

¹ See the Appendix to this paper for a complete listing of current course contents.

(Standard Generalized Mark-up Language), investment in the first generation of dedicated word-processors, and research into communication protocols between what might now be characterized as taciturn dinosaurs. These changes essentially affected only the production strand of the course as editorial staff retained an element of scepticism about the evolution of SGML (and ASPIC) and its significance for copy-editors, preferring to inform students of its existence rather than include it within working practice.

However, collaboration with Apple in 1986 in the publication of a daily newspaper for the athletes' village at the Commonwealth Games, held that year in Edinburgh, resulted in the acquisition of several Apple Macintoshes and a laser printer.² It also resulted in the interest in the potential of the Macintosh extending beyond the production area to design and editorial staff where it developed into passionate enthusiasm. Adoption of the Macintosh as the basic tool within the teaching of all aspects of publishing followed rapidly because of:

- The efficient learning curve of students on the Apple Macintosh, due to its (now well-known) intuitive and consistent interface.
- The avoidance of the need to teach anything of programming or electronic engineering to students whose interests, aptitudes and qualifications were almost entirely based in art and language.
- The possibility of allowing students to produce near-typeset quality material at relatively little cost in order both to experiment in graphic design and presentation and to expand the number of publications as practical work.
- The spread of the Apple Macintosh within publishing to the point where it has become an industry standard.
- The ability to move over the next seven years from the fairly primitive to the most advanced Macintosh Quadra models without sacrificing the benefits of the learning curve or the experience gained previously.

All these factors contributed to the increasing IT competence of students in terms of the digitization of texts and graphics in a production process which was more flexible and more cost-effective. All elements of the course could be integrated through practical work which, far from remaining an inchoate classroom exercise, could go through all publishing stages, including production, to be sold to the appropriate market like any other commercial publication.

Production of the graphic image has been further enhanced by the introduction of a Crosfield 636E colour scanner and related hardware and software (Imaginator, Scan View and Sirius systems) for post-scan manipulation of colour images. The Macintosh area of origination and the colour scanner area of graphic reproduction are increasingly converging due to the introduction to the former of high-resolution scanners, a colour laser printer, an on-line phototypesetter (Linotronic) capable of directly producing colour separations (film), and software permitting extensive manipulation of captured images. Close links with Heidelberg, the major German printing press manufacturer, give us hope that we may in time become a test-bed for Direct Imaging driven from our Macintosh pre-press system.

² This collaboration, including overnight satellite transmission of finished pages to California for promotional purposes, had been prefigured in our use of earlier Apple hardware including a LISA.

The high level of graphic design work in the course—in terms both of quality and quantity—is now based on the extensive use of this equipment.³ On-screen editing has become the norm for all student work. All student exercises have to be submitted in typescript (an innovation in UK higher education). This requirement has been facilitated by the department's open studios of some fifty networked Macintoshes, most at 'Classic' level. Spreadsheets and project management software are routinely used for costings, databases of customers for the publishing house run by students as part of the course, and organization of publication schedules. Text is captured through OCR if not already available in electronic form. A multi-disc reader is also part of our working environment. Most staff have Macintoshes for their personal use and IT, particularly desktop publishing, permeates teaching and learning throughout all aspects of the course.

3 THE SECOND WAVE

We are proud of our record in making this equipment, the techniques and the opportunities to stretch creativity in the production of print material, part of every student's competence. However, we became aware in the late 1980s of the need to address a wider definition of publishing beyond the print-based expectation that has held sway since Gutenberg. The commodity of the publisher is ideas and knowledge and as new technologies become available to act as vehicles for this commodity, then the publisher is obliged, for commercial reasons if no other, to use them when appropriate. Although at the time some of these vehicles seemed, and have since proved, to be new forms of dinosaur, that did not exempt us from our obligation as educators to prepare our students for the world of work some ten, twenty, thirty years ahead when they would be the key executives in the publishing industry.

For the course seeks not only to prepare graduates for immediate employment in a range of positions within publishing but also to provide them with the intellectual equipment to become in the longer term the managers, the decision-makers and strategy-formulators. To this end, we must inculcate in our students not only enabling skills such as fluency in English, particularly written English, IT competence, and the ability to communicate but also creative, problem-solving skills—the phrase that is most often used is 'transferable skills'—which include a willingness to engage with new concepts and techniques. Desktop publishing is current practice and orthodoxy, a matter almost of routine, and we must move on.

We realized at this stage that it would be difficult for this strand of non-print publishing to develop from existing production expertise, however advanced the latter's use of electronics to produce print more cheaply and more flexibly. Close ties with a medical publisher had enabled us to monitor early attempts to move from a traditional print-based publishing enterprise to new technologies: laser-disc publication had proved wasteful and made too many demands of staff with no experience in editing or marketing such material, let alone its production; on-line database publication drawing on the company's range of printed publications, many of which were in electronic form anyway before imprisonment on paper, proved more compatible with existing operations and more amenable to the skills of existing staff.

³ Our External Examiner, John Trevitt, formerly of Cambridge University Press and of the CNA Design Subject Panel, has recorded his opinion that graduates from the publishing degree have undertaken, despite the breadth of their course, more book and periodical design than most graduates from specialist design courses.

We also maintain close links with the electronic publishing division of a large conglomerate. Its analysis of market trends gave cause, moreover, for general optimism:

- Print publishing over the past four years has shown an annual growth of some 8% but electronic (non-print) publishing over the same period has reached an annual growth rate of some 20%.
- The non-print market should have overtaken the traditional print publishing market in overall value by 1996.
- It was forecast that by the close of 1991 the revenue from sales worldwide of CD-ROM hardware and software would have amounted to some \$3.2 billion of which the title component would be \$2.3 billion, a proportion which would steadily increase.
- The introduction into the mass market (as opposed to business and education) of CD-I, CD-ROM XA, and the 'electronic book' will expand the demand for titles increasingly initiated and produced exclusively as non-print publications.

An Information Science element had existed in the course for some time and included not only an introduction to libraries and the nature of information but also on-line retrieval systems and other forms of electronic information provision. This seemed a more promising foundation upon which to develop electronic, in the sense of non-print, publishing: sufficiently removed from print production, yet strong enough intellectually to fulfil our overall educational aims.⁴ The development of:

- students' intellectual and imaginative powers
- their understanding and judgement
- their problem-solving skills
- their ability to communicate
- their ability to see relationships within what they have learned and to perceive their field of study in a broader perspective
- in general, the stimulation of an enquiring analytical and creative approach, encouraging independent judgement and critical self-awareness

Accordingly, three modules were drawn up offering a progression in the three years of the course from Information Sources through Information Systems to Information Management. We have avoided the specific title 'Electronic Publishing' in order to emphasize the wider perspective which our aims demand. In Information Sources in first year, the Information Science base is retained. It would have been all too easy simply to offer a descriptive list of current technologies, as is the case with many books on electronic publishing, but students can always read, and would be encouraged to read, about these in current journals. Instead, we have to offer a conceptual and contextual account which would open electronic publishing to the knowledge and skills being developed in other areas such as Editing and Marketing. So students consider information flow, particularly within scholarly communities, and the role of both the publisher and technology within that

⁴ These are adapted from the *CNAA (Council for National Academic Handbook 1990-91* London, p.18. The CNAA is, at least for the moment, the body which sets the parameters within which we design and implement our degrees.

flow. As was the case with desktop publishing, we are essentially teaching the applications of electronic publishing rather than the 'hard' science, whether electronics or computing, that lies behind it.

From that initial base, it is possible in Year Two to examine particular technologies and to evaluate the benefits and economies of their implementation within a publishing operation. In Year Three students consider information systems in a management and societal context. The concept of information as a management resource and of the role of the information manager broadens again the context within which electronic publishing is considered. In addition, within specialist areas such as Editing, Marketing or Graphic Design, electronic publishing, its particular requirements and differences, are examined. For example, students may opt to take a specialist module in Graphics for Screen Media, the objectives of which include critical study of the application of graphic design to electronic publications and investigation of the design initiation and design development procedures for electronic publications.

We can discuss and demonstrate electronic publishing both within the University and outside, for example, at the National Library of Scotland, where we have access to the Business Information Service, or at the commercial electronic publishing house of Longman Cartermill. However, we are as yet unable to provide the complete simulation of electronic publishing that we have successfully organized for print publishing. One of the traditional characteristics of Scottish education lies in its refusal to distinguish theory and practice. Students demonstrate their intellectual and imaginative powers, their understanding, judgement and critical self-awareness through practical work that, as far as is possible, reflects the actual conditions of publishing, including the commercial imperative.

The existence of our own imprint, Merchiston Publishing, permits students to experience taking an actual publishing project from inception through every stage of research and development, editing, design, production and marketing. If students can argue for the project's viability, through research and costings, then finance is released for production by a commercial printer and the students follow through their marketing plan in order to recoup the investment. When all goes well, and a profit is made, then this is ploughed back into the course as subsidy for field trips or visits. Students derive enormous satisfaction, which is important in terms of morale and enthusiasm for learning, from seeing both a finished product, book or magazine, and a healthy balance-sheet resulting from it. Merchiston Publishing has become a small but not insignificant niche publisher.⁵

How can we then translate the success of its print-based activities into electronic publishing? It is not that students, or staff for that matter, lack ideas for what might be possible. At this point, it would have been pleasant to record a series of strategies by which they had been facilitated. Instead, what follows is a brief catalogue of what remains embryonic or unrealized. Our chief difficulties are the unfamiliarity (to those rooted in print-based technologies), lack of availability and cost of current media to take these possibilities to the point of sellable products. Whereas we have, or can afford to buy, the equipment and expertise in print production which makes relatively small print-runs but high production values viable, we cannot do the same so readily and so confidently for, say,

⁵ Our 1991 list includes Jan Tschichold, *Typografische Entwurfstechnik: How to Draw Layouts* translated by Ruari McLean; Scottish Printing Archival Trust, *A Reputation for Excellence: A History of the Edinburgh Printing Industry*; Alistair McCleery et al., *Imprints in Time: A History of Scottish Publishers Past and Present*; two issues of a magazine distributed to all former students and the annual volume of the *Journal of the Scottish Communication Association*.

CD-ROM.⁶ We cannot sustain the investment of time and money necessary for successful database publishing—although we are going ahead with a pilot scheme to make an on-line version of the annotated catalogue of our world-famous Clark Collection available at no charge through JANET. Even where we have overcome difficulties of technology and resources, as, for example, in producing multi-media stacks using Apple's HyperCard (or SuperCard), there is market resistance to purchasing what might otherwise come as public domain or 'shareware' and little that can be done to prevent illegal copying and resulting saturation of a limited market before costs are recovered.

There, it might be argued, Merchiston Publishing, and our students, face the same dilemmas as many commercial publishers, particularly in the STM (Science, Technology, Medicine) field. However, this cannot be used as a pretext to justify inertia. We do, as stated earlier, have an overriding obligation to prepare our graduates for their future through provision of not only conceptual understanding but also practical experience across all sectors of the profession. At the moment, students 'know' about electronic (non-print) publishing. They have creative flair in editorial and marketing, good management and communication skills, the ability to master and keep on top of detail, a keen awareness of commercial values: all of which are as applicable to non-print as to print publishing. Within the next few years, on the other hand, these will have to be complemented by the opportunity to follow through commercial non-print publishing projects. We can not stand by and wait for the equivalent of the Apple Macintosh to create a second empowerment of our students.

APPENDIX: COURSE STRUCTURE, BA PUBLISHING, NAPIER UNIVERSITY

Stage 1

	Contemporary Publishing I
	Copy Editing I
	Editing
<i>Core</i>	Language I
	Production Technology Practice I
	Graphic Studies I
	Project I
	Information Sources
	Media Studies (Newspaper & Magazine)
	European Studies I
<i>Electives</i>	Foreign Language I (French or German or Italian)
<i>(2 to be chosen)</i>	Literary Codes
	Contemporary Studies I
	AWBL (Accreditation of Work-based Learning) I

⁶ We have been quoted £1500 for production of a master and £1 for each disc pressed from it, based on a run of 1000; the *Economist* recently reported that the production cost of a single disc had fallen to less than \$2 (*Economist*, London, 13 July, 1991, p.112) but this must be for runs at a significantly higher level than we would envisage.

Stage 2

Core

- Contemporary Publishing II
- Copy Editing II
- Production Technology Practice II
- Graphic Studies II
- Project II
- Information Systems
- Buying Print
- Marketing

*Electives
(2 to be chosen)*

- Modern Literature
- Language II
- European Studies II
- Foreign Language II
- Contemporary Studies II
- Market Research
- AWBL II
- Writing for the Media

Stage 3

Core

- Issues in Publishing
- Issues in Graphic Management
- Information Management
- Project III
- Book Marketing

*Electives
(5 to be chosen)*

- Advertising & Promotion
- European Studies III
- Foreign Language III
- Contemporary Literature
- Language III
- Modernism
- Business Enterprise
- Magazine Journalism
- Quality Control Systems
- Printability
- Technology Developments in Finishing
- Colour Reproduction in Computer Graphics
- Electronic Film Separation
- Electronic Colour Image Assembly
- Graphics for Screen Media
- AWBL III
- The Past of Publishing