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Curricular implications of the influences of the Internet on journalism.

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Abstract

This paper presents and discusses the results of a grounded theory study of the implications for the journalism education curriculum of the influences of the Internet upon journalism practice. Based upon analysis of three months of dialogue across four electronic discussion lists used by journalists and educators in early 1997, the paper identifies more than 160 new tasks and practices required of journalists in the new media environment and discusses the implications of this finding for the resourcing, teaching, curriculum and outcomes of journalism education. It concludes that the Internet, in influencing journalism's context and practice, has forced a fundamental re-evaluation of the mission and enterprise of journalism education and the content of its curriculum. Influences of the Internet upon both the context of journalism and its practice render current approaches anachronistic and demand a re-evaluation of the aim, role and function of journalism education.

Introduction

This paper deals with the implications of the influences of the Internet upon the actual content of journalism education, including the effects upon the course work covered and the relevance of traditional curricula and topics in a new environment. It stems from a grounded theory study of nine weeks of journalist and educator dialogue across four electronic

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discussion lists used by journalists and educators in early 1997. It develops an argument that Internet influences upon the context and the practice of journalism reportage prompt a review of the approaches to the education of journalists, particularly the journalism curriculum. The paper reports upon the journalists' and educators' own discussions about such implications. Importantly, it addresses the educational implications of the 168 new journalistic tasks and practices which the researcher has identified as emerging as an influence of the Internet. It concludes influences of the Internet upon both the context of journalism and its practice render current approaches anachronistic and demand for a re-evaluation of the aim, role and function of journalism education.

Journalism education and the Internet: background

Until 1996 few formal studies had been conducted into the relationship between journalism education and the Internet. As Gunaratne and Lee (1996: 27) note, it was not until 1995 that the academic compendium Communication Abstracts first used the word 'Internet' as a search keyword (Gordon 1995).

Educational resources for journalism students and faculty begun to appear in 1995. Gunaratne and Lee (1996: 27) explained general reporting textbooks had been slow to include Internet resources because of the delay between writing and publication. Specialist texts on computer-assisted reporting and online research became available as resources for journalists and texts for reporting classes (Garrison 1995; Paul 1994; Reddick and King 1995). By the end of 1998 several more Internet journalism texts had become available, including some which were nation-based such as that focusing on the Australian situation by Quinn (1998). Online resources had been enhanced and updated. Quinn (1998: 91-98) listed a range of 27 web sites specially created for journalists and journalism educators featuring lists of links to useful resources.

Arant (1996) reported to the Association for Education in Journalism and Mass Communication on the widespread adoption of the Internet

among its program members. His survey of 133 programs in January and February 1996 found that e-mail and Internet access was provided to 96 per cent of professors and World Wide Web access was provided to 87 per cent of them. In 93 per cent of these programs students had access to such resources, with 90 per cent having access to e-mail and the Internet and 80 per cent to the Web. At that stage 71 per cent of the programs featured a home page on the Web and half of the professors surveyed had their own home pages. Panici (1998) surveyed 56 mass communication faculty on a range of issues, including a question about the kinds of new media they used themselves and required their students to use in their courses. Most instructors used the World Wide Web (63%), Internet search engines (61%), videotapes (56%) and electronic mail (56%) to prepare their course materials and lectures (Panici 1998: 57). For research purposes, they used Internet search engines (67%), WWW (60%) and e-mail (56%), while in the classroom they used videotapes (86%), audio equipment (65%), WWW (48%) and e-mail (46%).

Sharing of ideas among educators was important in the pedagogical and curricular levels. Gunaratne and Lee (1996: 34) noted that journalism educators had started to make use of discussion lists such as Journet to exchange information about how they were incorporating new technologies into their programs.

Several researchers have explored the curriculum implications of the advent of the Internet for journalism education. Pearson (1993: 131-3) described the effective use of electronic mail as a student publishing vehicle. He explained the production of a campus news bulletin using e-mail technology as a substitute for the instant, yet textual, medium required a different writing style, a blend of radio and newspaper reportage. J.T. Johnson (1994) built an argument which suggested journalism educators were left with little option but to integrate online research skills across the journalism curriculum. After establishing that the only kind of journalism worth teaching was the analytical kind, Johnson itemised two levels of instruction required to bring journalists up to a suitable skill level: the first was the mastery of basic hardware and software management, while

the second was the use of these skills to access and process data to produce insightful works of journalism (1994: 62-3).

Thompson (1995) proposed a radical restructuring of the journalism and mass communication curriculum to accommodate modules on 'digital communications'. His proposal involved the injection of four modules into the curriculum: information gathering; message preparation; editing and production; and message delivery. He gave examples of e-mail interviewing being added to information gathering classes and digital press release creation being added to message preparation units. Despite Thompson's argument that his modularised curriculum 'does not replace or displace any traditional skills or concepts', it is difficult to see how it could be accommodated without sacrificing some other content. Gunaratne and Lee (1996: 26) agreed new technology needed to be incorporated into existing courses, but suggested the task 'entails the problem of how to add new material to supplement the content of a course without sacrificing its original core'. Friedland and Webb (1996: 60) found they needed to do as much teaching in computer literacy as in journalism in order to get their students up to speed with the techniques of producing an online journal.

Several have explained their approaches in attempting such integration. For Gunaratne and Lee (1996: 29), it was a matter of retaining the core elements of three subjects, but introducing entry-level e-mail, search, listserv and Usenet skills before drawing upon Internet material for the actual workshop material for the syllabus topics. Tapsall and Granato (1997: 16) described their positioning of online journalism knowledge and computer-assisted reporting (CAR) skills in the curriculum of a Journalism Information Systems subject, a co-requisite for their introductory news writing subject at the Queensland University of Technology. After completing the two subjects students were expected to undertake a CAR assignment in each subsequent journalism unit in their program. The course was structured in a traditional one hour lecture/two hour tutorial format, with the first half devoted to instructing students on basic word processing, spreadsheet and database software along with simple maths

calculations; and the second half focusing on the Internet, studying the World Wide Web, electronic mail, gopher and file transfer protocol. Friedland and Webb also chose an integrated curriculum, but as a directed study subject the syllabus was dependent upon students' learning needs as they set about their group online reporting task in developing a laboratory journal. Topics typically included Internet navigation, hypertext/multimedia writing, HTML authorship, digital camera operation, image manipulation, online publication design, and creating and linking audio and video (1996: 62-63).

Quinn (1997b: 139) concluded that resource limitations might prevent such integration of Internet-related topics into the curriculum, and suggested computer-aided reporting might be better positioned as a third or fourth year elective subject rather than requiring all students to study it.

Some educators have written about strategies for dealing with specific curriculum issues which have resulted from the Internet's influences upon various facets of journalism. Massey (1996) took up the issue of print journalism education with 21 industry and education leaders in a Delphi study. She conducted three rounds of surveys addressing the newspaper industry changes the experts expected in coming years, the skills newspaper journalists would need and how they might acquire these skills. Massey (1996) identified the following top three predicated changes for newspapers:

- More demands for staff with computer expertise.
- More part-time and contract work.
- Serious questions regarding copyright.

She identified the following top five predicated skills needed by journalists:

- The need to keep learning and changing what they do and how they do it.
- Better understanding of the readership of newspapers.
- Computerised information-gathering techniques and data manipulation techniques.
- Willingness/openness to communicate via a variety of media.
- Ability to work independently.

Quinn interviewed Australian journalism educators about the extent of their inclusion of computer-assisted reporting in the curriculum and found almost all taught students how to use Web search engines and 80 per cent taught students how to perform simple remote access tasks. However, only one third taught students how to use a deeper level of CAR. Nevertheless, Quinn was heartened that the educators appeared to be ahead of the Australian media industry in the CAR field, suggesting they take the lead and drag the media into the digital era (1997a: 85-88). Williams suggested that even in North America the use of 'deep' CAR techniques was restricted to a few 'hot spots', but that there was 'a host of basic, transferable computer skills average reporters and editors should have'. These, she contended, should be integrated into regular journalism skills courses. At her university, American College, this required fundamental curriculum reform of existing courses to build computing skills into the program (Williams, 1997: 67-68). She suggested a regime of curricular injection of computing skills, progressing from basic word processing and file management skills in the introductory news writing classes; through the use of Boolean logic for keyword searching and basic data analysis in reporting classes; desktop publishing and graphic manipulation in editing classes; advanced searching on commercial databases and advanced Internet skills in advanced reporting subjects; and more extensive skills in advanced electives (1997: 69).

Lule (1998: 7-8) pointed to the need for curricular accommodation of the differences between writing and presenting the news for the traditional and the new media. He suggested students needed to learn to script and build hypertext links into their stories which accommodate the 'non-linear narrative blocks of text that readers pursue in the order they choose' and then handle the new level of interactivity between writer and reader afforded by the new medium. Friedland and Webb (1996: 62) reported the biggest conceptual challenge in their online journalism laboratory class was in teaching the difference between writing for a hypertext medium as opposed to writing for a print medium. Students needed to imagine how multiple layers of content resided in the same reporting 'space', they wrote.

Ketterer (1998: 4) focused on identification and verification of online resources as a key curriculum issue. Guidelines for assessing the credibility of a web site were built into the syllabus for a class devoted to the production of the *Digital Missourian* publication (Ketterer 1998: 12).

The curricular accommodation of the legal and ethical ramifications of cyberspace were explored by Smethers, who surveyed 253 journalism and mass communication program heads on the degree to which their courses incorporated ethical and legal issues associated with new media. Almost two thirds had chosen to build such issues into existing subjects dealing with law and ethics or journalism skills, while only 5 per cent had already dedicated a freestanding course to such topics. A further 18 per cent did not deal with the topics at all, although two thirds of those planned to do so in the future (1998: 19).

Some educators challenged new technology's displacement of other important traditional values in the curriculum. Wilkins (1997: 72), for example, suggested educators might be overlooking the very human nature of the journalism enterprise by focusing too heavily on online skills and knowledge. In building computer skills into the existing curriculum at American College, Williams (1997: 68) reported a faculty fear that doing so would 'drive out other basic reporting, writing and editing skills'. Gunaratne and Lee (1996: 34), however, were confident the threat of Internet-related instruction 'crowding out' other components of a course would dissipate as more students gained information technology skills before going to university. Scott (1995: 37) surveyed members of the Association for Education in Journalism and Mass Communication and concluded students and faculty needed to keep abreast of both old and new curricular topics and skills.

While several have addressed methods of introducing online journalism to the curriculum, few have examined the overall pedagogical positioning of journalism education in fathoming its capacity to prepare students for a transforming career. Allen and Miller (1997) attempted to do so by arguing for the adoption of a 'reflective practice' approach to journalism education. Reflective practice is the professional education method

articulated by Schön (1987), which involves the placement of a reflective practicum at the centre of a vocational program, linking the educational environment with that of the workplace. As Allen and Miller (1997) explained, the approach involves introducing students to a professional experience, attending to their responses and feelings about the experience, returning to the experience and then re-evaluating it. This is meant to prepare students for competent reflection upon, and learning from, such experiences when they are encountered in the workplace. They suggested it had the potential to equip students to deal with frequent change in the professional environment.

Method

A total of 1,217 messages across the four lists (Journet, CAR-L, SPJ-L and Online-news) over the nine-week period beginning February 1, 1997, were analysed. Of these, 629 informed the study. The messages were subjected to a process of constant comparison and theory building in accordance with grounded theory procedures set out by Glaser and Strauss (1967) and Strauss and Corbin (1990), using the computer program NUD.IST. Categories of the Internet's influences upon journalism practice were identified and theories built relating to those influences after the categories were put through their own process of selective and axial coding, as outlined by Strauss (1987: 64-67). Findings of this process will be reported elsewhere. However, for this study, the data were examined for indications of new tasks and practices required of journalists and any discussion of their educational implications.

Results and discussion

(Note: Code numbers (eg, C972A0001) are used to identify the item of electronic discussion from which the data were drawn in order to preserve the confidentiality of participants.)

The data showed the advent of the Internet had a range of implications for the curriculum of journalism education, including the provision of a

forum for curricular debate; the sharing of curricula online; the incorporation of the Internet into the curriculum in the form of web publishing classes and multimedia strands; the inclusion of technology-related skills and know-how; and the inclusion of units teaching students how to deal with information overload. There were 168 new tasks and practices identified as becoming part of the journalist's role, prompting an accompanying list of possible additions to the curriculum of journalism course. We must remember that, despite the extent of discussion of such issues on the lists, we have no way of gauging how widely such influences are occurring. The rate and extent of the adoption of educational resources, methods, curricula and outcomes influenced by the Internet is beyond the ambit of this study but is certainly worthy of further research. Nevertheless, the evidence here suggests the nature of such influences.

The data revealed an emerging sense of community and camaraderie, with the associated practices of collaboration among journalists and educators and establishing networks of contacts among them, prompting the suggestion of curricular modifications to accommodate it. The traditional focus on competitive 'scoops' in the news environment might be complemented by special attention to online collaboration among journalists. Research units can be expanded to include instruction on how journalists might make contact with their colleagues and other sources over the Net.

Discussion of newsroom resources suggested the encouragement of a 'sharing' culture in the newsroom with the introduction of an 'intranet' for the sharing of resources. This might start at college level with the construction of such an intranet and usage protocols for university newsroom use.

The Internet was a site for a renegotiation of what should be in the journalism curriculum (O972A0099). These were not simply Internet-related issues. In articulating curriculum concerns prompted by the Internet, journalists and educators proved to be revisiting matters which went to the heart of the practice and teaching of journalism. Course syllabi were presented in an online form (J972A0025) and shared with other educators as a result of discussion list requests (J972C0012), a trend noted

in among the likes of Gunaratne and Lee (1996: 32) and Tapsall and Granato (1997: 20).

The tasks and practices to emerge from the discussion of journalists' changing perceptions and attitudes prompt a range of curricular solutions, including the development of interpersonal and organisational communication units covering such relationships; the building of lobbying and persuasion skills into curricula; and ensuring courses do not ignore traditional approaches in their rush to the novel, thus alienating newsroom traditionalists.

Discussion of the mission of journalismspawned discussion of shifts in the employment market and the new social roles of journalists. If educators are in the business of preparing journalists for their careers, how are they taking account of these new roles journalists might be expected to fulfil? Some indication include the accommodation in the curriculum of multi-media components, incremental news updating, innovation, duality of writing and designing and investigation. But this is an area deserving of further research since it strikes at the very rationale for journalism education. It is likely both curricular and pedagogical changes would need to be made to accommodate such new roles and prepare students to identify and exploit them.

New communicative and linguistic tasks and practices emerged, prompting a number of curricular strategies. Improved communication among journalists can been enhanced by curricular concessions to the need to build sharing strategies into reporting classes; developing units on sharing technical know-how and help protocols; developing others facilitating the sharing of industrial relations information and job opportunities; and instigating students' active membership of discussion lists as a component of their journalism subjects.

The Internet had influenced the very language used by journalists, adding to their vocabularies and equipping them with new ways to describe themselves and their practices. Educators faced the challenge of familiarising themselves with such linguistic developments and, in turn, passing this knowledge on to their students. This prompted curricular adaptations

equipping journalism students to be aware of the technical language they were using and the audience's level of understanding of it. It called for curricular recognition of the need for precision in such language, consistency in style in the use of acronymns, and the assessment of the appropriateness of new technology colloquialisms. At times it might even require assessment of the suitability of English for a task and the exploration of the need for translation services, particularly when dealing with an international audience in an international medium. This required curricular accommodation of audience analysis tools to help identify linguistic needs.

On the industrial front, the analysis prompts the proposition that journalism students needed to be made aware of the industrial context of the profession they were about to enter. They also might be made aware of anticipated or actual changes to that context. This suggests curricular accommodation of material covering such industrial matters, such as exercises exploring a range of industrial implications arising from certain Internet influences. Innovations might include the introduction of a unit on ergonomics as a standard curriculum item; the development of units on contract negotiation for freelancers faced with a potentially exploitative new commercial environment; and, associated with this, units in business acumen and consumer protection, given the trend towards contract work for information professionals. (This was identified as the second most predicted change for the newspaper industry by experts cited the Delphi study by Massey (1996), reported above. Journalists' ability to work independently from home or with minimal supervision was identified as the fifth most important skill they would need in the new environment.)

Technological matters prompted introductory instruction in sorting and stripping electronic mail messages and units helping students keep pace with new versions of software by instituting appraisal protocols. The Internet was being accommodated into the curriculum with the development of Web publishing classes, including projects requiring students to design sites for local charities (J972A0009).

The traditional curriculum was being influenced by the Internet in very practical ways. Multi-media topics were being built into courses, in much

the same way as reported by Williams (1997: 69) and outlined above. One discussant asked how far journalism students needed to travel down the information technology road as part of their studies. Did they need to learn all the technical skills required to launch a web site onto the Net, for instance, including communication software, compatibility and programming languages like UNIX (J972A09011)? It was observed that the Internet allowed educators to incorporate 'all the mediums of info-transmission' into their curricula, along with their tools (O972A0045). Others disagreed that journalism needed these technical skills. They argued that the curriculum should show journalism students how technical aspects worked, but 'critical thinking, research skills, story-telling and a passion to keep people informed' were the key skills that should dominate even the post-Internet curriculum (O972A0057; O972A0071). Some suggested integrated programs offering new-tech skills combined with such traditional features (O972A0081), echoing the views of Wilkins (1997: 72) and Thompson (1995) and reported above. Students themselves were in two minds as to whether to study traditional journalism techniques or learn new software programs like Illustrator, and posted messages to the lists seeking advice informing such decisions (O972A0030; O972A0039; O972A0051; O972A0077; O972A0078).

The knowledge of specific software was certainly becoming a hiring requirement (O972A0092), as noted by Williams (1997: 67). But some believed design and multi-media skills should be learned on the job rather than added to the tertiary curriculum (O972A0078). Certainly, curricular inclusions needed to be more than just add-ons to existing courses, contended a new media student who added: "Online editors need to be more than reporters who know HTML." (O972A0145) Further, it was suggested that multimedia was a creative enterprise, and it was questioned whether a structured education program could teach the required level of creativity (O972A0046). Some took the opportunity to suggest that traditional visual and audio skills acquired in broadcast journalism courses were crucial to understanding online journalism, given its capabilities in these areas (O972A0167). This view certainly reinforced the opinions of

Friedland and Webb (1996) who had success with a laboratory-based curriculum marrying the traditional disciplines, outlined above.

This raises questions over the proportions of the curriculum which should be spent on technological issues and knowledge, how much of this knowledge is workplace-specific (particular versions of software etcetera) and how much is to do with generic skills required of all journalists. It supported the findings of Friedland and Webb (1996: 62) who had to devote half of their online journal laboratory course to computer literacy, including developing competence in the kinds of multi-media skills listed above. It leads to further questions about the role of internships or work placements in the curriculum to help students acquire such skills and understandings if they are best learned in the workplace.

One solution to emerge from the data was to address course design at a macro institutional level by marrying computer courses with journalism courses into new hybrid offerings, allowing each to preserve its identity yet offering students the combination, as with the journalism major minoring in computer science (O972A0032). This was not dissimilar to the Journalism Information Systems subject devised by Tapsall and Granato (1997: 21) and described above, but different from the integration approach described by Gunaratne and Lee (1996: 29). The question of whether to integrate such skills into the overall curriculum, the approach also favoured by Thompson (1995) and Williams (1997: 69) or to teach them as an end-on elective as suggested by Quinn (1997b: 139) is worthy of further research. Reports upon their relative success would greatly enhance the educational literature on the topic and provide guidance for those contemplating change.

The discussion of actual new job types and opportunities led to the identification of 18 new tasks and practices which have curricular ramifications. Of course, driving curriculum modifications would be the question: "How are students best prepared for careers in such new fields?" With such an array of new job types being developed, educators might start by debating and deciding what the professional nomenclature 'journalist' now means in the post-Internet environment. Curriculum adaptations would need to

take account of journalism job types, both traditional and new. Educators would need to determine the value in going to the extent of adjusting the curriculum to incorporate skills and understandings required of such jobs. It is suggested that course content covering many of the new tasks and practices could be incorporated into multi-media or editing subjects.

Internet influences upon journalism's legal context identified the need for prompt curricular adjustment. Tertiary courses are designed to prepare journalists for their professional practice. They should offer understanding of the legal context in which journalists work. The empirical evidence of a shift in the legal terrain of journalism influenced by the Internet prompts the need for review of this part of the journalism curriculum. Curricula need to be re-evaluated to determine how they should be adapted to incorporate the redefinitions of laws relating to publishing, distribution, jurisdiction, ownership and access. In-service training is probably necessary for working journalists on these issues. Just as important as the topic areas themselves is the emphasis which should be placed upon such topics in the new media environment. For example, laws related to offensive materials might previously have had a low profile in media law subjects; however, given the proliferation of such materials on the Internet, might now be given a higher priority. Similarly, intellectual property takes on a more problematic profile in the Internet context as information and ideas are traded, borrowed and stolen at a remarkable rate. This reinforces the findings of the Delphi study by Massey (1996), reported above, in which a panel of industry leaders identified copyright as the third most important issue facing the newspaper industry. Pedagogy might also be assessed for the suitability of incorporating programs adopting Donald Schön's (1987) reflective practice approaches, given that online journalism classes might be strengthened by students understanding of legal implications of actions and learning to adapt their journalistic behaviours to compensate for legal changes as they arise.

In a similar way, ethics, is another component of most journalism curricula, often bundled in with media law in a single subject offering. Internet ethical implications need to be built into tertiary curricula and

into inservice courses for those becoming involved. Educational strategies for doing so need to pay heed to the needs of journalists as they go through the process of re-evaluating their behaviours in the context of the new reporting and publishing environment. Their professional bodies need to re-evaluate their codes of ethics in consideration of this development, just as the Australian Journalists Association recognised in its code the new ethical dilemma presented by the arrival of technology allowing the digital manipulation of photographs. Journalists, editors and supervisors need to re-assess their expectations of their journalists in the light of such new issues. In this professional context, in-service training and seminars might play a role. Textbooks on ethics need to take account of these developments, prompting questions on available resources. Green (1997) has identified some of the legal and ethical risks attached to students conducting real-life investigative reporting as part of an online journalism subject. The issues of identity, commercial influence, netiquette, verification and regulation are key candidates for curricular and textbook inclusion.

The method of inclusion of both legal and ethical cyberspace issues is open for debate. As Smethers (1998: 19-20) revealed, journalism and mass communication programs have adopted a range of approaches to inclusion, some at the level of the formal law and ethics courses which already exist, some in new technology reporting classes which are evolving, and some as reflection exercises in practical online reporting and publishing workshops. Other options will undoubtedly arise, but there seems little excuse for not addressing such issues, unfortunately an option taken to date by 18 per cent of the programs Smethers (1998: 19) had surveyed.

The contextual discussion of the influences of the Internet upon the various media in which journalism is practised prompts its own series of educational implications, most of which present arguments for curricular adaptation. Much of the focus of journalism education has been on newspapers. Typically news writing has been taught from a print perspective and the bulk of graduate placements have been with newspaper companies as the largest employers of journalists. An influence of the Internet

upon newspapers therefore has considerable educational implications as educators need to adjust their thinking and educational strategies to this shift in the professional paradigm. With this in mind, educators might revisit the curriculum to assess the level of newspaper 'bias' in their approaches to news writing approach and consider the value of a more multi-media. This relates directly to the earlier analysis of job opportunities. The traditional major employment market for journalism graduates has been, but opportunities in this medium have shrunk with the decline of newspaper titles since the 1950s.

Decisions on the inclusion of more multi-media components in the curriculum might be premised upon detailed analysis of graduate placement with newspapers and the employment potential for graduates with multi-media skills. The curriculum might also be influenced by educators' decisions to experiment on the research and development side of the interface between newspapers and the Internet. Topics here might include live and direct reporting for web publication, the digesting of newspaper stories for Internet transmission, incorporation of video and audio grabs in newspaper sites, building search engines into pages, hosting online chats, adjusting letters to the editor responses to the new environment, establishing systems for breaking news, encouraging cross-fertilisation between web and hard copies of newspapers, and selecting opportunities for external hyperlinks. The lead has been set by the likes of Friedland and Webb (1996: 62-63) who included a range of multi-media competence requirements into their online journalism laboratory subject explained above. Certainly, tertiary courses have led newspapers in the implementation of recent technologies, with the most prominent example being the use of desktop pagination for their campus publications well in advance of industry. It is important here to recall the Delphi study by Massey (1996), reported above, in which newspaper industry leaders ranked computer expertise; a better understanding of readers; computerised information gathering and data manipulation; and multi-media competence among the top requirements of the new generation of journalists, each of which also emerged from the data in this study.

Each of the other media raises its own questions for educators in deciding upon curricular responses, but most also require similar curriculum adaptations to those already mentioned for newspapers.

As well as such medium-based initiatives, more general curricular inclusions might be units in audience analysis and audience interaction to allow for the more intimate dialogue afforded by the new medium and the resultant need to better know media audiences. This might meet the hopes of Lule (1998: 7-8), outlined above, that students might be taught to how to encourage and participate in a "continuous dialogue between readers and writers".

The qualities of new media have broad-ranging curricular implications as journalism students need to be aware of the qualities of new media and to explore and practise strategies for creating journalism adapted to allow for such qualities. Clearly, journalists need to understand such qualities if they are to target their work effectively to new media audiences. Each is deserving of special topics in the journalism curriculum as each quality has potential impact on the kind of journalism produced: the international nature, currency, interactivity, accessibility to new publishers, commercial potential, design attributes, mass and niche markets, new communities, 'push' versus 'pull', capacity, its ephemeral nature and its multimedia attributes. Curricular strategies might include the study of the qualities of new technologies so students can learn how to evaluate such technologies and assess their implications for journalism practice; and in-service courses for working journalists addressing how new technologies impact upon their work in the traditional media and preparing them for the transition to new media.

The final contextual influence identified, that of audience, also has curricular implications. The notion of audience has long been central to communication-based journalism courses. Its importance was underscored in the finding of Massey (1996) in her Delphi study reviewed above that newspaper industry leaders viewed journalists' understanding of their readership as the second most important skill for the new era. This needs to be reinforced in the curriculum at both pre-service and in-service

levels so journalism can be tailored to the special needs of these new audiences. The special qualities of new audiences necessitates a continuous process of reappraisal by journalists, with each journalistic decision made with audience in mind, both at the reporting and production stages. Journalists need skills enabling them to make regular reports on audience needs, soliciting feedback to audience responses. At a curricular level, this calls for the development of audience assessment strategies in journalism courses; the implementation of systems of audience response to improve journalist-audience dialogue; and in-service training on audiences and needs.

We now move to the curricular strategies developed in response to tasks and practices emerging from the analysis of the influence of the Internet upon journalism practice.

The teaching of approaches to news values and topics is fundamental to journalism education. Findings that the news values of proximity and currency had been influenced by the Internet prompted a reappraisal of their positioning in the curriculum and approaches to their teaching. Proximity is a fundamental news value which takes its place in the foundational education of journalism students about news ingredients and judgment, or 'news sense' as it is known. Journalists needed to be taught to recognise the capabilities of the Internet in evaluating the newsworthiness of stories. They also needed to learn to explore the possibilities of new topics in their reportage and to develop new approaches to reporting their specialty fields. This required curricular adaptations to include topics on such areas.

Journalists need to be given skills to reassess the notion of proximity as a news value informing their news judgment. Students need the opportunity in the curriculum to work through these kinds of questions: If the Internet does bring people closer, does this mean it makes them more interested in news concerning fellow world citizens, or perhaps only news of a certain type or that concerning their particular real or virtual communities? What impact might the Internet have upon the role of proximity as a news value for traditional media audiences?

Immediacy or currency as a news value implies speed in the journalism process. This has educational implications for those needing to impart these skills to students. It requires imaginative, perhaps multi-stage approaches to news packaging, a different news environment from the single daily deadlines so familiar to most journalists in the traditional media, particularly print and television. It requires the balancing of other considerations within a tighter timeline. The curriculum needs to proffer students skills in assessing news events in time terms: when to report them instantly and when to imbue them with the benefits of longer-term analysis and interpretation. Workshops can be designed to address this. Further, the curriculum needs to take up the time issues of whether 'instant' information transmission is still journalism as we know it, albeit without the interpretation and analysis normally assumed. Perhaps students need to consider 'immediacy' rather than 'currency' in news value theory given this attribute of the new media. Scenarios testing the value of proximity and currency in the Internet environment could be worked into the curriculum in the form of news exercises and follow-up discussion.

Related to the news values of journalists is the topics they choose to report upon, addressed above. Certain topics will not have been catered for before the advent of the Internet, such as technological reporting with an emphasis on this new medium. Students need to be made aware of interplay between journalism, audiences and media to make appropriate judgments on whether certain reporting topics are relevant to their audiences. To this end, journalists need skills in assessing news coverage in consideration of the new medium, its capabilities, and changing audience needs. The journalism curriculum needs strategies to teach students to do above. This might involve tracking the coverage across media to ascertain which are better suited to the coverage of particular story topics.

Journalists and journalism students already learn research skills. The curricular implications are in broadening that set of research skills to include Internet-based research. This requires educators to identify what new skills are needed for the Internet-based research enterprise and what skills are no longer needed as a result of this shift. Journalists need to be

able to solicit sources and story leads; obtain contact details; advise colleagues of breaking stories; identify the best Internet searching strategies and the best search engines; decide upon the best discussion lists and sites for the research purpose; quantify and budget the time spent on this enterprise in relation to time spent previously on research; determine the currency and authenticity of material; develop information management skills; and convince management and peers of value of the Internet research enterprise. An Internet-driven curriculum issue was the perceived need to teach students how to cope with information overload, "how to manage that information once we get it" (O973D0019). This reinforces previous findings identifying information overload as an issue of professional concern.

Educators need to position Internet research as a standard component in the journalistic research toolkit, as suggested by Granato in Quinn (1997a: 86). Again, Schön's (1987) reflective practice approach comes into play here, because this pedagogy can be combined with curricular innovations to develop reflective skills in journalists which allows them to use Internet research skills appropriately for a given purpose.

Computer-assisted research and reporting (CARR) had already been offered as a specialty in many courses. The advent of the Internet now launches it into the repertoire of general reporters, necessitating specialist and parallel instruction in CARR skills as part of research units, along the lines developed by Tapsall and Granato (1997). Newspaper industry leaders interviewed by Massey (1996) in her Delphi study identified such skills as the third most important skills which will be needed by newspaper journalists in the new media environment, as explained in Chapter 2. In deciding upon the curricular accommodation of CARR, educators must recognise that web access alone is not computer-assisted reporting, as noted by Quinn (1997a: 85). CARR implies computer-based research and analysis well beyond that available on the Internet, including familiarity with government information systems and database software. Educators must recognise that the Internet simply adds to a developed field of reporting based upon computer access of public information. Curricular innovations

can include the expansion of CARR training to a broader entry level as more journalists use computers in their reporting; the development of CARR exercises across the Net to train reporters in accessing public information; and the development of in-service courses for journalists on CARR techniques.

Verifying the currency of sources and gauging whether they are current enough for use in reporting is a basic journalistic technique. Journalists planning to use Internet sources needed to develop skills in ascertaining the currency of information they accessed and accessing up-to-date information at a time when news was breaking. A revised curriculum might include units giving journalists strategies for identifying the currency of Internet-sourced information, such as strategies on finding dates in material or for identifying contact details to check the date of material with sources. This might extend to actually citing the date of the source in the reportage and allowing the reader to decide whether it is current enough for their purposes. Such units might include examples of outdated work with explanations of the resulting problems generated for audiences and reporters.

A research attribute of the Internet was the internationalisation of the sources journalists have available to them in their reporting. Curricular additions might be aimed at educating journalists and students on the kinds of international sources which might be useful in their stories. This would involve imbuing skills in seeking out international precedents for important local stories and international points of comparison for local stories.

The analysis of Web resources used by journalists at prompted a range of curricular implications for journalism educators. Units might be incorporated into the curriculum on strategies for rating the relative usefulness of a web site to the journalist's purpose; shortcuts to improve efficiency in Web-based research; and auditing of time and resources required to access such data.

Clearly, journalists need to be imbued with skills to develop systematic authentication procedures when dealing with such information and to investigate means of balancing views in their stories. At a pedagogical level,

students might be given exercises requiring them to assess the biases inherent in certain net-based material, endowing them with a healthy scepticism in their information gathering procedures. This might involve the development of authentication checklists, accompanied by attribution strategies to alert readers to background biases or alliances of the sources used. They can also be taught how to find sources which might add balance or different shades of view to their stories.

The problem of technology failure was raised as an issue confronting journalists using the Internet. Students and journalists need to be prepared to cope with such failure. At pre-service level, students need to be made aware of potential technical breakdowns and trained to address them within software capabilities. They also need to be taught backup, verification and attribution protocols to minimise risk. At inservice level, journalists need such training, but focussed more particularly on their own work situations. The curriculum can feature examples which show such difficulties, with the opportunity to for students to work through solutions.

Another problem identified was that of the time consumed by Internet use. Educators need to make the Internet/time link for students so Internet tasks can be weighed up against other journalistic tasks. This involves a systematic and pragmatic approach to Internet usage, not simply as a toy with unlimited time constraints, but as a research and publication facility with its own set of properties and negotiable place in the journalistic enterprise. This can be addressed at preservice and inservice levels, with perhaps more focus on particular work situation at inservice level. The curriculum might include an audit of research and publishing needs for various journalistic roles and the exploration of the potential for Internet use within that schedule. It might also include an audit of time spent on tasks, such as sifting through topics on discussion lists. Students would need to be taught how to conduct such audits from time management perspective.

A further Internet-related problem was the dubious authenticity of much Internet-sourced material. Students and working journalists need to learn

about such dangers and authentication methods. A worthy exemplar of such curricular inclusion was that centred upon assessing the credibility of an Internet site included in Ketterer's (1998: 12) account of the subject centred upon the production of the *Digital Missourian*, detailed in Chapter 2. There, a laboratory-based subject had concrete curricular requirements highlighting the importance of evaluating online resources. The curriculum might include units designed to develop appropriate verification and attribution strategies so such scams are made evident. Further, students might be taught to report upon such scams to increase public and Internet community awareness of them.

The influences of the Internet upon the writing of journalists covered also has curricular implications as journalism educators face the challenge of adapting their writing programs to cope with the potential for, and the reality of, such change. The major curricular challenge is to devise writing techniques which are adaptable to the medium being used and the audience being addressed. A difficulty is in gauging adaptability of audiences to new techniques; that is, in maintaining an audience base while implementing change.

The willingness to communicate in a variety of media was identified by newspaper industry leaders surveyed by Massey (1996) in her Delphi study as the fourth most important skill for the new generation of journalists. Specific curricular strategies for addressing such issues might be the inclusion of story structure appraisal units in reporting classes; developing protocols for assessing audience expectations on language use and new-tech writing forms; experimenting with multi-media reporting options in reporting and editing classes; accessing ongoing writing development programs such as Writer-L listserv over the Net; and generally reappraising the writing enterprise by considering the tasks and practices already mentioned in earlier discussion.

There were repeated calls for more basic grammar instruction, particularly from working journalists (O972A0035). This prompted fierce debate on whether grammar should be positioned in the tertiary journalism curriculum or elsewhere (O972A0120; O972A0121; O972A0148;

O972A0160; O972A0099; O972A0167). It was associated with the call for core skills as part of the curriculum.

The curricular implications of the influences of the Internet upon journalism quality control are substantial. The findings question the fundamental base upon which most courses teach their writing: Should it be formula or creative, for the old media or the new, should there be remedial grammar or is it not the responsibility of journalism educators? Curricular modifications must first address fundamental questions about the role of journalism courses. One approach is to actually teach students grammar as part of their journalism education, leading to curricular inclusions such as the 'Crash Course in Grammar' handouts in class at one institution (O972A0171). Another approach suggested was to cull the poor writers early on in a program (O972A0176).

There is a range of curricular implications of the identified need of web production skills. Educators face a range of choices in deciding how to equip graduates with such skills at either pre-service and in-service levels. They also need to recognise that the rapidly changing medium creates the necessity for frequent curriculum reviews and adaptations. An obvious step is to develop web production skills as part of the editing and publishing curriculum. This allows scope to explore the differences from, and similarities to, traditional publishing methods. However, such a simple curricular solution does not necessarily encourage the cross-disciplinary curriculum which many deem necessary for web production, incorporating multimedia expertise from radio, television, graphic arts and print backgrounds.

Conclusion

Clearly, the Internet's influences upon the curricula of journalism courses is an important implication of the influence of the Internet upon journalism practice. Such influences arise at a secondary level, in that only after the influences on journalism practice are assessed and take hold do curriculum issues for journalism education move to the forefront. A continuous process of revisiting and perhaps reshaping the journalism curriculum

might be expected to occur in the light of the developing awareness of the attributes of the Internet and educators' recognition of their influences upon journalism practice. It should also be recognised that this flow of know-how is not just one-way traffic from journalism to journalism education. Journalists also need to keep abreast of developments in journalism education, since they are at times ahead of industry and occasionally out of sync with it, as Pearson (1993: 134) noted in relation to education's leadership with desktop publishing in the 1980s and Quinn (1997a: 88) suggested was the situation developing with computer-assisted reporting in Australia.

While this paper has endeavoured to focus on curriculum issues, it is difficult to separate curriculum from pedagogy in any discussion of education for a particular profession. Methods of instruction and methods of course packaging are being re-evaluated in the light of the influence of the Internet, particularly since the medium itself offers new options in teaching. In turn, influences upon teaching methods can be expected to have impacts on the practice itself once students graduate into the workforce. This was made abundantly clear by Allen and Miller (1997) whose argument that the Internet mitigates for a reflective practice approach to journalism education was detailed above. Theirs was unique in the research literature in its attempt to link the advent of the Internet with a holistic pedagogical approach. The idea of a systematic regime of continual reflection in the educational laboratory and later in the professional workplace as developed by Schon (1987) and applied to journalism by Allen and Miller (1997) seems to lend itself to the rapidly changing technological context of journalism and deserves further exploration. Its importance is underscored by the fact that the panel of newspaper industry experts interviewed by Massey (1996) in her Delphi study identified the need "to keep learning and changing what they do and how they do it" as the prime skill required by the new generation of journalists.

Some of the Internet's influences upon journalism are cosmetic and might easily be addressed with Bandaid modifications to journalism programs. But others go to the very heart of the mission of journalism, rendering

many of the current approaches to the education of journalists anachronistic. This demands a comprehensive re-evaluation of the aim, role and function of journalism education in this daunting new media environment.

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