

A HISTORY OF INFORMATION MEDIA

This paper was presented as a keynote address at the Australian Computers in Education Conference, 1993 at Penrith. Some minor changes, reflecting a shift from oral to print and electronic-based information media have been made.

INTRODUCTION

Within the next decade Australia will either have an educational crisis — or a great export market. We can just let things happen: We can let the electronic media become more the communication channel of young people's lives — to the point where they won't need to go to school for information. We can let the majority of teachers feel increasingly deskilled as their traditional role as information provider is reduced, and increasingly anxious as their inability to participate in the new electronic culture becomes obvious. We can have an educational crisis on a grand scale as traditional forms of grading, assessment, evaluation are found to be no longer relevant or effective.

Alternatively, instead of the crisis, we could have a great market. We could take advantage of the present window of opportunity and start to make provision for the electronic future. We could export product, packages, programs that will be in demand around the world. Australia commands great respect as a leader in distance education — which is about the best model for the future. We really could take the initiative and become the clever country — though I am not convinced that we are currently doing that.

Until this week I would have put my money on the educational crisis outcome. But now I am not so sure. While I suspect that everyone at this conference could point to some anomaly — where the new technologies are simply being used to promote some old, tired, and appallingly inappropriate values — what has been in evidence here is visionary; it is state of the art, well informed and educationally and socially sound theory and practice. There is much to be proud of, and much that the rest of the world would be genuinely interested in.

But there are also areas where more attention could be directed. For example, Australia does value its traditions of social justice, of a fair go. In fact, much of our social and educational policy is based firmly on egalitarian principles and a sense of fair play. However, the new technologies, like the old, raise issues related to a fair go — issues of access and equity.

I want now to talk about some of our goals for the future. To do this I am going to begin with a 'lesson' from the past. I am going to outline what happened in an earlier period when a new technology replaced an old — to make comparisons, to have some idea of the pitfalls, and possibilities that are now before us.

WRITTEN MEDIA: SCRIBAL CULTURE

The invention of the alphabet and the introduction of the written word was no less a revolutionary development than the one we are currently witnessing. The ability to keep records transformed the way people thought, through to the way they organised society. Once information could be written down, the very notion of distance changed.

It wasn't just that the information could be carried from one place to another, it was also that information could be transmitted from one generation to the next. Information could be recorded, it could be fixed, made permanent, and become a source of authority for centuries. This was very different from the way meanings had been exchanged in oral communities.

Not everyone welcomed the change to the written form. There were those who suggested that the move away from human-to-human communication was alienating, and that having to learn an abstract, symbolic system — such as the alphabet — was a barrier to communication and meaning.

The philosopher Socrates was among those who objected to the written medium. He argued that human thought and communication were fluid, that they were constantly moving. He insisted that understanding was based on an exchange of information, where constant modification took place in the light of what others were saying.

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Writing, he warned, didn't allow for this critical dynamism. It fixed ideas and forced you to follow an argument rather than to engage with it. Because he thought that this was such a distortion of intention and meaning, he would not put his ideas in writing.

But writing managed to take hold without his contribution and the high point of the written medium came in the 14th and 15th centuries, with the wonderful achievements of the manuscript era. By this time in European history, the Church and the nobility, were in charge of the written word, and just as Socrates had predicted, the meanings were well and truly fixed.

Manuscripts were produced by scribes, who were in the main, monks and priests. And the information they copied in the Scriptoria was primarily of a scared nature. They produced beautiful manuscripts of the Bible, of prayer-books and of religious commentary, etc.

These texts were in Latin, which was the language of the Church and the aristocracy. By using this code the establishment was able to prevent the lay community (who did not know Latin) from having access to information. Because the Church controlled education (through the convents, abbeys and monasteries, etc.) it could choose who would learn the language and gain access to the texts — and the secrets of the universe.

Of course there could be no disagreement with the Church's interpretation. You had to go to specific people to get it. Knowledge was completely controlled. Priests decided on the meanings. The world was made in six days and the clergy were God's favoured representatives on earth. These truths were preached from the pulpit and enforced within the community. Anyone who dared to question the correct nature of the meanings was declared a heretic and punished accordingly.

In this context where knowledge was set, where meanings were fixed and recorded in code, it was possible for an elite group to own information, learning, and ideas about scholarship. The highest standards were attained by those who learnt Latin, who pored over the sacred manuscripts, who studied the same texts over and over, and who could recite whole slabs of them from memory. These were the intellectual leaders, the elders, the wise persons of the community who possessed the key to the meaning of life — and a great deal of power and influence.

Then came the printing press and an information revolution.

Print Culture
One of the most useful ways of thinking about the effects of the printing press is to see it as producing a knowledge explosion. Throughout the scribal era there had been relatively few manuscripts and they had been controlled by a powerful elite who had subscribed to a limited world view — a religious dogma. The ruling class allowed only those whom they initiated into their circle to have access to information sources and to decree meaning. Then, almost overnight, the printing press ended this form of organisation.

For instead of information being copied in the Scriptoria under the strict supervision of the clergy, printing presses suddenly sprang up all over Europe — and unsuitable, unscholarly, opportunistic persons of the worst sort began producing books at an unholy rate, and without any consultation with the Church. Fevre and Martin (1984) give some idea of the change: "Assuming an average print run to be no greater than 500, then about 20 million books were printed before 1500." (p. 319)

Worse, these books were printed in local languages, with all the lay people could understand. By referring to this as publication in the vulgar tongues, the Church made it very clear what it thought of the practice of abandoning Latin.

Almost overnight the Church lost control of information, and began to lose power to the professional classes and the state. Because it could no longer regulate the access to information, because people could find out things for themselves without the mediation of the Church, its authority, power and prestige began to decline. It's role as the custodian of knowledge, as the source of what was right and wrong, as the educational authority, was completely undermined.

The Reformation
The printing press helped to make the Reformation possible. Martin Luther was not the only disenchanted cleric who nailed his protest to the Church door, but at the time that he raised his objections, the printing press was able to play a role in promoting a popular movement. For within days Martin Luther's criticisms had been translated into the local languages and were being circulated in their thousands throughout Europe. And so began the first poster war in history as the Church tried to counter the Protestant revolution with its own forms of propaganda.

One can well imagine the impetus that this gave to previously illiterate individuals to learn to read. In order to participate in these great changes, in order to have access to information, to read the posters and know what was happening, it became necessary to acquire new skills which had until then been denied them. Not surprisingly thousands upon thousands began to get the hang of this new medium and became enthusiastic about reading. They weren't formally taught: like so many of today's computer wizards, they worked it out for themselves.

Objections to Print
Because from the outset printers were concerned to make a profit, there were those who condemned the new information being produced as crass, commercial, and appealing to the lowest common denominator, as coarsening the talents and tastes of society.

One of the reasons printers began publishing in English, and other mother tongues, was that they were always looking for ways to extend their markets — and there was a limit to those who could read Latin. Printers wanted manuscripts that would sell to the widest possible audience, and in this sense they were not so very different from today's media barons. Anyone who professes to look back to the good old days of print when quality not profit was supposed to be the determining factor, is ill informed, mischievous, and most definitely misled.

Instead of confining themselves to the old religious texts, printers also started to look for new material, and turned their attention to some of the old manuscripts from Greek and Roman times. These histories and legends, and commentaries on the world, proved to be extremely popular in translation, and so the humanities were born. And of course the learned men, the leaders of the Church, objected strenuously to these pagan stories, and insisted that the study of history,
philosophy and literature, would be the ruin of all. The humanities they warned, would lead to the end of truth, the downfall of civilisation — and the loss of the immortal soul.

Everywhere fears were expressed by the establishment about the lowering of standards as Latin was no longer revered. Learning by heart and reciting information which was the highest standard, was replaced by knowing where to look things up. As students abandoned the close study of the set and sacred texts in favour of voracious reading of numerous titles, it was widely proclaimed that no one could process information so quickly, that such habits would result in superficial understandings — and that this little knowledge was a dangerous thing.

No doubt students have tried to sit at the feet of their teachers in order to get access to information. With the introduction of the printing press and the book they could become much more independent learners. They could consult books on their own, and draw their own conclusions. The result was that the entire practice of education was transformed: those who had been the teachers were not always seen as knowing anything of worth. What was taught, how it was taught, and by whom, was transformed with the advent of the new information medium.

Those who were displaced were very critical. They even made pronouncements about the way the book would mean the end of conversation in the family and the demise of a sense of community. When everyone could go off on their own and read a book, and form their own opinions, the predictions were that this would lead to a society of individuals and a breakdown in communication. It was nothing other than a recipe for anarchy and disaster!

Unable to stop the printing presses from pouring forth their pollution, a rear guard action was fought by those who had been in power to restrict access to the medium. They tried to stop certain people from getting ideas and becoming dangerous. Just as later in the United States, it became a criminal offence to teach slaves to write and read, so attempts were made to keep books out of the hands of women, children and the 'working classes' throughout the 17th, 18th and even 19th centuries.

As Alvin Kernan (1990) states, by the 18th century there was a widespread fear of a literacy crisis — but it was the exact opposite of ours (now) in that it involved too much rather than too little reading... Reading came to be feared in much the same way that too much television viewing in late twentieth century America has become a kind of cultural bogey. (pp.130–131)

He went on to quote from some of the warnings of the time:

Those who deplored (reading) did not simply condemn its effects on morals and politics: they feared it would damage public health. A 1795 tract listed the physical consequences of excessive reading: 'susceptibility to colds, headaches, weakening of the eyes, heat rashes, gout, arthritis, haemorrhoids, asthma, apoplexy, pulmonary disease, indigestion, blocking of the bowels, nervous disorder, migraines, epilepsy, hypochondria, and melancholy.' (pp. 30–31)

Of course there were additional problems for women. The famous physician Dr Kellogg was of the opinion that novel reading was the greatest cause of uterine disease among young women and advised mothers that they let daughters read — at their peril.

While there is much more that could be said about the print revolution, I think I have covered enough material to make my points. At this stage I want to become a little more specific about the issues of access and equity. Because, although there was an information revolution which had implication for the masses, which allowed more people access to information, and through reading, led to the increased democratisation of society, the benefits were not equally distributed. Not everyone became an independent learner and not everyone was empowered by the print information revolution.

THE POSITION OF WOMEN

Women were worse off after the printing press than they had been before it. Apart from the fact that the emergence of male controlled professional knowledge was closely paralleled by the elimination of women's traditional knowledge, there was the effect of the Reformation, in itself a direct consequence of print. The elimination was accomplished in no small measure by the boiling and burning of nine million witches: '...after 1481 to be precise' (Gage, 1980, pp. 106–107).

Throughout the scribal period there had been women scholars. There had been women in charge of medieval convents which were centres of learning, for example St Radegund, Abbess of Poitiers and the German scholar Hildegard of Bingen (Schiebinger, 1989). But when the convents were abolished, there was no place for women of learning to go. They were not allowed entrance to the universities, although there was no objection to taking their wealth. The 'revenues and lands of the nunnery of St Radegund, an important center of learning for women, were transferred to Jesus College Cambridge' (Schiebinger, 1989, pp. 12–13). It took centuries before the women themselves were included in the assets. They were not permitted to become full members of Cambridge University until 1948, and only recently have they been admitted to Jesus College.

The abolition of the convents in England meant that there were no training institutions for woman teachers. When grammar schools for girls were closed while those for boys were expanded, '...the rift between female and male education grew into a chasm' (Fraser, 1984, p. 139).

So it isn't the case that the cultural and intellectual changes that accompany a new medium benefit all sectors of society. Having documented the extent to which women were excluded from print culture until relatively recently, I tend to look very closely at issues of access and equity when it comes to the electronic media. From my vantage point it seems that women are as effectively absent now as they were when print was introduced almost five centuries ago.2

Information and Influence

And of course it's not just women who are missing out in relation to the new media. As Mike Holderness (1993), a specialist writer in information technology, says: 'To make the most of the information age you need to be male, speak English, and live in an industrialised society' (p. 36). Not even all English-speaking Australian males have the same access, although that is another matter.

But when it comes to women, the picture is pretty bleak. While print has been the primary information medium for more than four hundred years, it is only in the last three decades that women have been able to exercise any influence in the medium. It was only with the advent of women's publishing houses that women were able to enjoy the same power over their own words.
that men had had since the invention of the printing press. For while throughout the centuries of print culture women had been in print, and sometimes in greater numbers than men (e.g. the novel, Spender, 1986) women held few, if any, decision-making positions. As so many writers have commented (Virginia Woolf among them), women got into print in so far as their words met with the approval of men.

'No male writer has written primarily, or even largely for women, or with the sense of women's criticism as a consideration when he chooses his materials, his theme, his language' says writer Adrienne Rich (1980). 'But to a lesser or greater extent, every woman writer has written for men even when like Virginia Woolf, she was supposed to be addressing women.' (p. 38).

As with so many of the issues raised by women, if you want to appreciate the significance, just think in terms of a role reversal. For whenever I have asked aspiring male writers how they would feel if all the publishing houses were owned or controlled by women, most of them have expressed shock and horror at the prospect. 'But we would never get a fair hearing' they have protested. 'We would have to censor our words to meet women's requirements.' My point precisely! That's what it has been like for women until relatively recently.

Women in Print

Women's presses of the last few decades are one of the greatest success stories there has been. In contrast to my undergraduate days when you could have passed through Sydney University genuinely believing that the only women writers to have existed were the exceptional three: Jane Austen, George Eliot and Charlotte Bronte, today we have an abundance of women's books. They are not just products of the women's presses. For by publishing books by, about and for women, the women's publishing houses changed the market, to the extent that where they led, the mainstream publishers had to follow. This was partly because women are also more avid readers, and greater book buyers (Australia Council, 1990).

But if women writers came into their own once women were decision makers in the medium, there is yet another dimension to this undeniable saga of success. It is that women were only able to start publishing houses at a time when the power of print was on the wane. It was because print was losing its place as the primary medium that women were able to get a foot in the door. It was because men were moving off to the exciting, and powerful area of the new electronic media, and not contesting the area of print as they once did, that women were able to gain unprecedented access.

I would not want to undermine the achievement of women's presses, but I do want to make it clear that it is a bit like becoming the best manuscript producers after the invention of the printing press. I do want to emphasise that women have encoded all this wonderful information in print — at the precise time that books are ceasing to be influential as the repositories of knowledge.

Exclusion of Women

Many women of my generation comment, despairingly, on how young women today seem to know nothing about feminism. They don't know the history or the contemporary context. But this is not because young women today are puerile or perverse. It is because in the sources that they go to for information, feminism isn't there.

'It's not in the usual girls' magazines. It's not in the videos. It's not on the radio stations, the television channels, or in the news. It's not in software programs and it's not in Hollywood films. On the contrary, the misogyny of Hollywood has to be seen to be believed. The number of women's films that have been produced in the last ten years could be counted on the fingers of one hand. It is self evident that if there were as many women's films as there are women's books — if there were as many films by, about and for women as there have been women's books — the world would be transformed.

Women simply have no representative role as culture makers in the new medium. Women are once more being reduced to the status of consumers of male values, as they were for four centuries while print prevailed. When it comes to access and equity in relation to the electronic media — women don't even have a starting place. (Madonna excepted, I hasten to add, a point I will take up later.)

There are no mainstream women's radio stations, no women's television networks and no international women's software companies. Just as it was in the days of print, women only get a hearing in the electronic media, when their presence is approved of by men.

Sexual Harassment and Discrimination

In a recent edition of Sassy — an unusual girls' magazine — there is an article 'Hi girls, see you in cyberspace.' It documents the sexual harassment that women are experiencing on the computer bulletin boards and networks. In commenting on her introduction to the new medium, Margie (1993), the author says:

I started to learn more about the social rules of this community. Such as 'roasting the newbie'. It's a charming tradition, like fraternity hazing (initiation ceremonies) or getting jumped when you join a gang. If you weather the attack, you're accepted. If you whine and flee, later for you. And I learned that the level of sniping, swearing and personal insults is higher than in real life, since you aren't face to face. The nasty mode known as flaming. What I experienced was a veritable flamefest. (p. 73)

and she documents the harassment and discrimination directed against her.

All the problems of access and equity that occur in the oral and print media, are just as pervasive in the cyberworld. The networks are dominated by men, and the level of intimidation is often horrific. Cheries Kramarac and H. Jeanie Taylor (1993) have taken up the issue of mixed sex conversations on the nets. In their article 'Women and Men on Electronic Networks: Conversation of Monologue?' they indicate that:

the problems that women experience in other conversations may be intensified on the nets. Beth Kieves, a user-services consultant at the Massachusetts Institute of Technology, says that 'people do things on computers that they wouldn't dream of doing on any other medium.' Obscenities, racial slurs, and vicious personal attacks are recorded from people who might not say such things in face to face interaction. (pp. 52-61)

The message is loud and clear. Again and again women are told that they are wasting time and pursuing trivial issues and are ordered off the nets. Even the bulletin boards that are supposedly set up for women are male dominated. There are also other problems — such as the way that the networks are being used for pornographic purposes. As yet, these are not the problems of school networks, although they are increasingly reported as issues in female university communities.
WOMEN AND COMPUTERS
This hostility to women on the nets is not the end of the inequities. At every level women are seen to be experiencing discouragement and discrimination in relation to the electronic media. They might not be physically excluded from the halls of learning these days, they might not be legally prevented from entering the professions as they were when print appeared, but they are still being effectively locked out of the medium and with not dissimilar consequences.

First of all there is the cultural attitude that girls are not as competent with computers as boys. Girls, along with many educationalists, are instructed in the patterns of computer anxiety — just as girls were once taught that they couldn’t do mathematics. Add to this the matter of girls’ socialisation, whereby they are directed towards responsibility, while boys — well, ‘boys will be boys,’ and they are rewarded for risk taking. Which is not only a distinct advantage with new technology, but is also consistent with the mode in which software is being encoded.

Much of the software, be it games, or for educational purposes, is constructed with boys’ interests in mind (even the language — with its instructions to abort, execute and buck etc works to alienate and exclude girls). Then there is climate of the classroom itself: it is no coincidence that most co-ed schools now have to have a computer use policy (which generally means a ‘girls only’ period) to allow access for girls. Even three year old boys have been videocamera-barring girls from the computer, and accompanying their intimidatory tactics with the verbal taunts that girls are no good at computing.

The position is grim. Here we are in the middle of an information revolution which holds out the promise of new and greater egalitarianism, while the reality is that all the old forms of discrimination are being exercised with a vengeance. As one young woman put it in a post on what it is like to use the computer:

We’re women in a society that has given us a claim to certain territories and tried very hard to remove us from others. If you’re a girl on the net (network) you get sexual advances, you get told you’re not as good as the guys. This world is seen as a private men’s club (or boys’ as the case may be). Maybe we deal with enough s_t on the street that the last thing we want to do when we get home is turn on the computer so some 15 year old boy can proposition us for MUD (Multi-User Dungeons: interactive computer games) sex. The thing is, despite all the crap, some of us all still want to turn on the computer. Some of us still want to explore. Some of us still believe that technology can help break down our barriers rather than find new ways to put them up. (Sassy, 1993, p. 80)

Women are currently being set up to become the 21st century’s information poor. Not that they will be on their own. The new technology is also exacerbating the differences between industrialised and third world countries, between English speaking societies and those of other cultures, and between those who are resourceful and those who are for example, homeless, in our own community.

Information Rich and Poor
‘Global division — between the “information rich” and the “information poor” — is now more sharply defined than ever.’ states Mike Holderness (1993). He goes on:

Three kinds of barrier deny the majority of the world access to new information sources. Broadly these are economic, technical and political. Economic factors are the most fundamental. Many people live and work in places lacking the necessary communication to make links with other users. It can take three days to place on international phone call from say, India or Bangladesh — and then the connection is often not good enough for computer communications. Of the technical barriers, by far the most excluding is language: (just like Latin in the scirbal era) most of the world’s population cannot use computer communications in their own languages. And finally there are the political questions which centre on access to effective education and training to use the technology — in particular, the notion that computer technology has a gender bias towards men. (p. 36)

CONCLUSION
One of the reasons that these grave and divisive issues are not being addressed more systematically and seriously is that we still have far too many members of our community resisting the changes that are taking place, who are putting their energies into reacting against change itself rather than examining the very real problems that the changes are ushering in. We also have to acknowledge that there are groups, such as white, English speaking, and educated men, who are doing very well in the new medium and who are antagonistic towards any suggestions about injustice and to scrutiny of their influence. The term feminazi has been used to discredit and distort the criticisms of feminists in this area, an electronic backlash, no less.

At the moment we have the mindset whereby the print proficient, like priests of the manuscript period, castigate the younger generation for not using reading and writing as it has been used throughout the print period. Virtually no attempts are being made to see how the young do use writing and reading. This is because the skills that are cultivated by the screen are qualitatively different from those that are associated with the page. Even when the electronic generation do read and write, it is very different from the practices employed by those raised on print.

Instead of careful examination of the power configurations, of the barriers and inequities, we are more likely to have as many prophecies about gloom and doom, about the end of civilisation and the lowering of standards, as there were when print first made its appearance.

There is a pressing need to look at the issues of access and equity in relation to the electronic media. Multimedia, the use of all media (print, visual, sound, etc.), on a networked screen is not a sci-fi possibility of the future. It is happening now and we would be using all our critical faculties to appreciate the social, political, and economic impacts that these new developments will have on our view of the world and quality of life.

Already we are beginning to understand that the new media with its entry to cyberspace and virtual reality probably has more in common with the oral cultures than it does with the print period. As we look for models for communication, and interaction, for ways of understanding and making sense of the information that surrounds us, we could begin to take note of the Dream Time and Aboriginal notions of space, time and community, as more relevant to contemporary purposes. It would certainly change some of the understandings about access and equity if we were to value Indigenous culture, and women’s communication patterns, as the models for the 21st century.

I must acknowledge that at the moment I am not optimistic. The history of information media shows clearly how groups can be locked out, deprived of influence and a way of encoding their experience of the world, when
there are technological revolutions. I suspect that despite the gains of the past, despite some of the inroads that have been made into ending harassment, discrimination and foul play, despite all the achievements of print, that with the new medium we are back to square one, and we must start to fight injustice all over again.

I see few signs that the educational establishment, or the print proficient older generation, are even beginning to tackle the issues of electronic information, access and equity in the 21st century.

The only positive features that I can see at the moment are Madonna (after all, it is a woman who has obtained the most lucrative contract in the electronic media and WISE (Women's International Studies Encyclopaedia) which is an attempt to electronically encode women's knowledge of the last 30 years. But these are not sufficient to allow me to revise my analysis. I see the electronic media creating a new hierarchy where women, Indigenous people and already disadvantaged members of our society, will be information impoverished. Unless of course we do something now to ensure access and equity.

REFERENCES


Endnotes
1 Gage also points out that 'the word "witch" formerly signified a woman of superior knowledge' (p. 102).
2 See Dale Spender, (forthcoming 1993) Nattering on the nets: Women, power and cyberspace, Spinifex Press Melbourne, for further discussion about intellectual and cultural changes associated with the information revolution with particular reference to women.
3 For further discussion about the way technology/softwares favours male values and socialisation see, Dale Spender (1993), Nattering on the nets: Women, power and cyberspace, Melbourne: Spinifex Press.
4 See the research of Nola Alloway, Education, James Cook University, North Queensland.

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