History Teaching with ICT: The 21st century's 'gift of Prometheus' ?

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Abstract. The intention of this paper is to put forward a case for using Information and Communication Technology (ICT), and in particular, computers and their software, CD-ROMs and the Internet, to enhance the teaching and learning of history. This proposal focuses on history taught at senior levels in schools in New Zealand, but could also include the history-based units in social studies. The article is comprised of four sections: the first is an historical perspective, the second concerns combining history with ICT to show how it can enhance the content and skills in teaching history. The third deals with the way different teaching and learning styles can be promoted and developed in conjunction with ICT, and the last section discusses the value of a future symbiotic relationship between ICT and history's place in the curriculum. The intention is not to discuss what is available through ICT for history teaching and learning, but to examine the theory associated with its possibilities.

Introduction: An historical perspective

Prometheus' gift to humanity was that of fire, later to be countered by the opening of a box by Pandora which released evils into the world. 'Hope' was all that was left behind as consolation. In the context of this article, can we view ICT as the equivalent of Prometheus' gift, or is it really a Pandora's box? It is interesting to note that the name Prometheus means 'foreseeing', and this in conjunction with 'hope' is an appropriate platform upon which to launch this debate.

Throughout the ages, technology has been at the forefront of human development. Whilst it has brought great benefits, there have also been prices to pay, particularly sociological ones. The advent of the printing press created fears that literature available to the masses would result in the overthrow of the old order, as the common person would become conversant with ideas above his or her station. The Industrial Revolution raised concerns about unemployment and the rampant growth of

capitalism, as labour was replaced by machines and skilled crafts 'died' out in the tide of mass production. The railways and the steam engine brought fears of destruction of the countryside, atmosphere, wildlife and the redundancy of other modes of transport. Queen Victoria herself actually boarded a train in an attempt to allay the fears that were so strongly held by the public. The growth of commercial television was criticised for its effect on the literacy of the population and the possible demise of reading. These worst fears have not always been fully realised, yet still the tide of technological development has not abated.

The developments in ICT have grown exponentially over the last few years and we, as teachers, should look towards its benefits for education whilst cautioning ourselves that it must remain our servant and not our master. There have been many valid criticisms of 'technoromanticism' or the 'Luddite' mind set of some teachers today. It is obvious that there have to be certain parameters around the assumption that ICT, in all aspects, is a good thing. As Bourdieu (in Harker, 1990), has commented, the cultural capital of the school may conflict with the cultural capital of the home and therefore compromise the possible progress of the student.

Having or not having a computer at home illustrates this disparity well. Access to computers in school is fraught with difficulty. There may not be enough computers to go around, some departments may have preferential access to computer rooms, there may be time constraints on computer usage, staff may not be sufficiently trained to use the technology or may fear the challenges it presents and there may not be a skilled technician available to give help in times of crisis. I have had personal experience of all the above and have always harboured 'Luddite' tendencies myself. I realised the importance of becoming computer literate when I started my masters degree and, having bought and learned to use a computer, have not looked back. Much of the material that I have used in this article has been accessed via the Internet and through e-mails sent to various historical associations.

Berenfield & Schrum (1997:158), conclude that 'it is essential that educators take a lead in assuring that the uses of information technologies are pedagogically sound, organisationally strong, and institutionally supported'. Without these considerations, the argument for integrating ICT into history is weak. Cornu (1995) argues that a new integrated pedagogy must be constructed to combine new integrated pedagogical methods with tools. Despite these notes of caution, I shall argue that, we as history

teachers, should view ICT as a tool that can make the teaching and learning of history more stimulating, rewarding and rigorous for all.

History with ICT: Knowledge/content and skills

History, as a subject in senior schools in New Zealand, is a subject under pressure. The allure of new subjects combined with the growing 'market' mentality of the government, parents and schools themselves, has helped reduce the popularity of history in an increasingly crowded curriculum. There is a low public perception of history as a vocational or academic subject (Stenson, 1990). In many schools it is a declining subject and many question its importance in a modern curriculum.

However, history is a subject that teaches important content and skills, both of which are necessary in the education of informed, knowledgeable, critical thinking citizens who have an understanding of the past, an appreciation of the present and a realistic and balanced vision for the future. Sewell and Brown (1999), argue that social studies aims to promote the development of informed citizens who possess critical thinking skills. These skills are the prerequisites for confident participation in a democratic society. The main arguments for teaching and learning history follow a similar line. 'It is essential for active citizenship in a free society, it provides meaningful contexts for moral reasoning and the development of moral sensibility, it systematically develops literacy and use of language and it develops an understanding of students' own cultural traditions and heritages and an appreciation of others' (Counsell,1997). History is a vital subject in a modern world where different cultures and traditions have to understand and work with each other, and global citizenship is the reality in our 'global village'. There is a vast amount of material available for our use through ICT. Historians no longer rely solely on the written word, but now also have access to film, TV, newspapers, tapes, official papers and access to libraries throughout the world via the Internet. In view of these arguments, the key factor, for history teachers, is to harness the many possibilities that ICT affords to history teaching and learning.

There is little mention of the incorporation of ICT in the current Year 11, Year 12 and Year 13 New Zealand history curricula, except to suggest where data may be gathered from for internal assessment work. There is little mention at all at 7th form level, despite 40% of the mark being made up of course work, in which there is a good deal

of information gathering, processing and analysis and opportunities for various types of presentation (NZQA). Computers could obviously play a significant role in this research work, and some of these possibilities are discussed here.

For history's healthy survival, it must be taught well, and must be seen to be relevant to the needs of students today. Dickinson (1998), emphasises that education should provide students with the best intellectual tools available and history is part of current intellectual technology. The New Zealand Technology curriculum document of 1995, states in its aims, that students become 'confident in using a variety of means to address needs and opportunities and solve practical problems in society, focusing on know how, knowledge, information gathering from a variety of sources, risk taking, lateral and divergent thinking and more.' These aims fit well with those in history and social studies teaching. In conjunction with the new Technology curriculum, and the technology available to schools today, history can look towards a healthier future in its examination of the past.

Grabe & Grabe (1998) emphasise the information processing capacity of the computer for collaborative and reflective enquiry and point out that as, 'mind tools', computers arguably provide the greatest potential for meaningful technology integration. Dickinson (1998), maintains that ICT can help students learn to appreciate distinctions between information, evidence, facts, interpretations, truth and validity. What is also exciting, is that word processors, spreadsheets, statistical packages, databases, simulations, teleconferencing, CD-ROMs, and the Internet, can make history come alive in the classroom. Jenkins & Turpin (1999:43), have discussed the merits of using the Internet in teaching history, concluding that 'the Internet is an unparalleled tool and resource for teaching which, when used with discrimination, is of immense value'. These tools combined with the practical skills necessary for the use of computers, may add an exciting new dimension in the teaching and learning of history.

A new kind of literacy is required to use information networks effectively, but an awareness is also required of the pitfalls this can present. There is need for informed debate on the role that technology can play in history teaching. As Counsell (1998:1), in the editorial of 'Teaching History' points out, 'ICT in the curriculum is about purposeful information management and communication. It can teach students to offer a critical edge to all they encounter as they process information, evaluate it and

make it into new knowledge shapes. They must learn how to convert information into knowledge and to understand conditions under which valid claims and assertions can be made.' Counsell goes on to discuss certain dangers inherent in using ICT inefficiently. Printing off vast screeds of information is not enquiry learning, and beautiful presentation needs to have some rationale behind the choice of format used. Discrimination is an important part of the process and being able to use the equipment efficiently, and productively, is vital. Thus, selecting, criticising and transforming information can be enhanced by the use of a computer.

This new literacy is not just the domain of the Information Technology (IT) teacher. In teaching IT across the curriculum, IT can be made more relevant and provide opportunities for skills to be developed and reinforced. There is no reason why history teaching shouldn't take a leading role in the partnership with the new Technology Curriculum. 'We have, for one of the few times in history, a convergence of pedagogical thought and technological breakthroughs that fit like a hand in a glove' (Thornburg, 1991:7). This could be viewed as a timely cue for history teachers to take action.

A number of projects have been undertaken in Australia which evaluate the potential of the new learning technologies, for example the Australian History WWW Project. Similar studies are being conducted world wide, indicating the interest historians have in using ICT to enhance their research and the teaching of this subject. The 'Riccarton Project' has put forward a multi-pronged plan to embrace Teaching and Learning, Staff Professional Development, Community Project Management, Infrastructure and Facilities and Sustainability (Good Teacher 1999). The initiators of this project are aware of the 'technoromanticism' that prevails in some quarters today and realise that ICT will do little unless more time and money are spent on staff development and developing students' learning, reading and critical thinking skills. Those involved in the project feel it won't revolutionise learning but may contribute some innovative and useful examples.

Initiatives in Britain, such as through the DfEE funded 'History Using IT', have had a good deal of success supported by the Historical Association's Body for Educational Technology. Future initiatives have been put forward by The British Communications and Technology Agency. The Teacher Training Agency has provided history specific examples for the new ICT initial teacher training National Curriculum. Realistic

examples of ICT have been given by Linsell (1998), through which trainees could learn to choose, use, and evaluate ICT as a history teaching resource. All schools in Britain will be connected to the National Grid for Learning by 2000. The underlying principle has been that history always comes first, and that ICT should be used to make students learning of history better. This is a philosophy that history teachers in this country could focus on, should they embark on a programme of integrating history with ICT.

In New Zealand, the Ministry of Education in 1998 announced an Information and Communications Technology Strategy for Schools, though as Sewell and Brown emphasise (1999:8),'it is only a first step'. These initiatives, along with many others, serve to show us what is possible and desirable as we move into the 21st century.

History with ICT: Teaching and learning styles

A partnership with new educational technology, will be employed, 'if it is anchored in a rich ocean of contemporary learning theory' (Sewell & Brown 1999:4). These authors have written recently about computers and social studies education in New Zealand, maintaining that two dominant theoretical perspectives, constructivist and sociocultural, influence effective learning in this curriculum area. The constructivist view underlines that new understandings are built on existing knowledge structures, emphasising the cognitive processes that occur within the individual. The socioculturalist premise, is that, students best learn through social interactions where cognitions are distributed in a collaborative and reflective enquiry. A number of parallels can be drawn between social studies and history, and these theories can be applied to both subjects. The focus is on using the computer as a tool which can add value to history or social studies, emphasising the change from 'what students can learn from a computer to what they could do with a computer' (Ryba, 1991).

These are crucial pedagogical considerations for any teaching programme. However, in examining the benefits that ICT can bring to history teaching and learning, we can re-assess our own practice and evaluate to what extent we cater for the constructivist and sociocultural perspectives in the humanities education that we are involved with.

How much can ICT enhance the quality of history teaching and learning? Dickinson (1998), asserts that ICT can help students learn to appreciate distinctions between

information, evidence, facts, truth and validity. Students can have wider access to data to learn about these distinctions and in testing claims. In addition, transferable skills will be gained or developed through the experience of putting these learning experiences into practice. A growing body of literature describes the dissonance between students and teachers, as teachers suppress the students' cultural habits of communication and knowledge (DeVoogd, 1996:1). Using computers can help to promote different learning styles in the classroom. In our multi-ethnic society, this has to be given serious consideration. 'A genuine multi-ethnic education system would not only have various knowledge codes in operation…..but there would be a variety of ways of transmitting these knowledge codes using culturally appropriate pedagogical methods' (Harker, 1990:39).

Ideas have been put forward, some from the U.S.A., on how promotion of these different learning styles can be achieved. The 'Small Group Technological Model' has learning defined by the student and not the teacher. The 'sage on stage' (Dwyer et al, 1991), moves the focus of the classroom away from the teacher and the one way flow of information flow of teacher to student. (Cuban 1984). Teachers have noted lack of student engagement and curiosity as they listened to teachers, read textbooks and completed assignments (Goodlad 1984). Learning can be made more difficult for students who come from a culture where the style and content of ideas are communicated differently. Friere's (1970) 'banking concept' of education puts this into perspective. He stresses that this concept does not allow for emancipatory education but smothers creativity and is oppressive. Effective use of ICT may enable students to work in a form congruent to their culture and learning style, and allow them to explore their own creativity. Exploiting ICT may also help students improve their historical understanding and reach those students who need such help most of all. Constructivist theory would lend credence to Friere's view; that building on existing knowledge is preferable to imposing knowledge into students' minds.

DeVoogd (1996), discusses that the passive learning process in schools trains students to be dependent learners who need teacher direction to progress. This prevents students from constructing personal divergent thoughts that are important to a liberal education. Using computers helped students manage their own learning whilst teachers spent more time helping students access, organise and present information, rather than the teacher giving the information herself. Students were able to choose

their style of working, whether it be individual or small group work. However, this method may not always be applicable in the teaching of senior history, but could be of value in the production of internally assessed course work. Despite this note of caution, Thornburg (1991), maintains that research on multiple intelligences and the functioning of the human brain, can link well with the potential that computers provide and enables teachers to transform education for the benefit of all students. He goes on to argue that, computer technology is designed to 'allow education to reach the dominant intelligence of each child' (p45), and that students can set their own pace with computer software matched and developed to cater for their dominant intelligences.

Walsh (1998), argues that IT should not be used to make students better at IT. The aim must be more rigorous and enjoyable history. He maintains that the word processor brings these advantages to more students, without watering down the more sophisticated demands of historical study. The computer can 'annotate, organise, classify, draft, re-organise, re-draft and save that fundamental of the historian the written word' (Walsh,1998:6). He cites an interesting case study of 'Gerry', a Year 11 student, and a visual learner, who found answering long lists of questions or making notes amounted to copying and working blindly through a lot of complex material. His teacher used the various facilities of the word processor to structure a more appropriate task for him to attempt. Gerry was eventually able to locate information and reduce it to manageable forms and, finally amend, adapt and review his work. These strategies provided him with transferable skills that he could use during his G.C.S.E. exam. A full account is published in *Teaching History* (1998).

The potential for such work is endless, with the proviso that teachers are well prepared and trained, there are no major time constraints and the students have easy access to a computer. These structures and strategies can be used at many levels, within a variety of topics. Introducing new pedagogical approaches will inevitably result in new roles for teachers. Rather than teachers being the 'sage on stage' they may become facilitators, managers, team guides and creators of new interactive learning environments. For these roles to become reality, there must be in-service and pre-service training provided for teachers, to allow them to acquire the relevant skills and knowledge to 'realise the power of technology-supported learning' (Sewell & Brown, 1999). The aims of the Riccarton Project support this view, indicating there needs to

be a great deal of commitment and training for all involved (Good Teacher, 1999). Butler & Clouse (1994), state that technology is an agent for change, causing schools to re-structure themselves. Teachers will adapt their roles from dispensers of knowledge to facilitators of learning. This is something that some teachers may find challenging, but from evidence reviewed so far, it appears that this is the direction in which many educators are moving as we enter the next century. Akbaba & Kurubacak (1998), found that teachers seem to have positive attitudes to ICT, but need encouragement and support to integrate it into the curriculum. Butler & Clouse (1994:15), go further, stating that a huge transfer in paradigm is required for teachers to move towards a perspective that 'integrates the various technological mediums into what they do in classrooms and what students do in school'

History with ICT: A symbiotic relationship for the 21st century?

The rationale for teaching history combined with the technological ideology of present times, would make for a very powerful combination that would meet the needs and expectations of history teaching today; a liberal education combined with a vocational training. Sewell & Brown (1999:6) assert that 'if social studies is about educating for successful participation in an information-rich competitive society, then students need to be able to use and keep up with computer technology in the work place and at home. Students need information, interpersonal and co-operative skills to solve problems, make decisions and be constructively critical. Computers can facilitate growth of all these skills'. As has been discussed earlier, history has its own central place in the curriculum as a content-rich and intellectual subject that stimulates critical thinking and informed discrimination.

How can the symbiosis of ICT and history have relevance to the curriculum today? The marketisation of education means that knowledge is not only structured to be economically productive, but itself becomes wholly a commodity under market conditions (Halsey et al, 1997). That the school curriculum reflects the current political philosophy of the time is underlined by Ashton and Sung (in Halsey et al, 1997) who imply that 'the almost total subordination of the education system to economic utility is becoming a necessary condition for economic prosperity'. The impact on the subjects offered at examination level reflect this emphasis on 'business'

and ‘market’. History tends not to feature at the top of the list. Apple (in Halsey et al 1997) argues that in the universities, technical and commercial knowledge is at a premium and the university’s role is moving from an induction into a liberal education to one designed to enhance economically effective knowledge. If this is so, where does it leave history? Can history be seen as a viable subject to complement these new initiatives? The ‘increased insecurity confronting middle-class families has profound implications for the education system. They want subjects that bring success to children getting into universities or jobs’ (Halsey, 1997). Governments, in the western world stress the vocational component of education. The danger is that skills may become outdated before they can be used. If taught out of context, skills will only be of limited value. For example, a trained engineer can build a railway across a desert but an educated engineer will have some concept of what impact the railway might have on the local population. Educators must decide whether they want to provide an education or a training for their students, or perhaps a mixture of both. ‘Is education a matter of narrow job training rather than a personal development which requires expanding knowledge and critical disposition?’ (Counsell, 1997). These are fundamental questions to be addressed by any teacher, of any subject, in New Zealand today.

Making history a core subject, at least at one of the senior levels, would ensure some balance in the education of our students, as history is not a vocationally oriented subject as such, but a crucial area of study within a liberal education. The rationale for teaching history has already been made clear, but is highlighted by Counsell (1997), ‘it is questionable therefore, whether a school which ignored or underrated knowledge of change over time or the historical contexts of moral dilemmas, would be providing an acceptable education’. Her main thrust in a later article is to show how history’s role in the curriculum will be strengthened in its relationship with ICT, rather than let ICT remain the province of the ‘techno-teacher’. In view of these assertions, ICT’s central role in history must be demonstrated to reinforce history’s key role in the curriculum. Combining history with the thrust towards a more technological society will enhance its position in the perceptions of students, parents and educators alike. The link with ICT will give history the competitive edge it needs in the curriculum today and at the same time allow it to focus on the traditional skills and knowledge that make this subject so essential. Emphasising the role of history in

the wider curriculum and its link and support to other subjects is also vital. Butler & Clouse (1994:21) argue that, 'if we do not embrace technology and use it to restructure the educational process, the public may well remove their trust from us and create new vehicles for socialising young people'. Whilst this comment could be seen as excessive, it is something for teachers of history to consider in planning for the future. History and ICT together can meet the need and desire for a liberal education and a training for young people today.

Using ICT to help anchor history to its central place in today's curriculum, and to promote its popularity and perceived value in conjunction with ICT's own intrinsic worth, will ensure a powerful and productive symbiotic relationship. Young historians may leave school with sound critical thinking skills, a wide, relevant and contextualised knowledge base and an adept and discriminatory use of ICT.

Conclusion

The combination of history and ICT can be seen in terms of Prometheus' gift only if it is used in an informed and discriminatory fashion. Fire is a powerful, and at times, destructive force that needs to be harnessed to work for the good of human kind. As historians we should consider embracing the potential of ICT as a valuable instrument to enhance history for all. The end of this millennium will turn many of us to history, in order to put the present into context, to make sense of what we have achieved in the last 2000 years, and to create a vision for our future aspirations. History's central role in our lives may become clearer, more vital and relevant as a result.

'Hope', as in the remnant of Pandora's box, is far too nebulous a concept to be applicable here. What is required is something far more concrete. For the proposals put forward in this article to work, teachers and students will require sound and on-going training in ICT and there will have to be a commitment from all those involved in the educational process to see this translated into a tangible reality for all. All schools will have to be funded equitably, and that funding must come from the government. A shift in educational paradigms on the part of all educators will be crucial. As we exit the second millennium, a confident and rational belief that history with ICT can have a successful future symbiotic partnership, is vital, if educators want to see such change eventuate. It is up to the history teachers and all those involved in

education to seize this ‘gift of fire’ and ensure that its possibilities benefit all New Zealand students as we herald the third millennium.

References.

Akbaba, S. & Kurubacak, G. (1998). 'Teachers' Attitudes Towards Technology'. http://www.webcom.com/journalakababa.html. Retrieved 30.5.99.

Ashton, D. & Sung, J. (1997). 'The Transformation of Education and Society: An Introduction'. p8 in *Education, Culture, Economy, Society*, edited by Halsey, A. Lauder, H. Brown, P. & Wells, A. (1997). Oxford: Oxford University Press.

Apple, M. (1997). 'The Transformation of Education and Society: An Introduction'. p25 in *Education, Culture, Economy, Society*, edited by Halsey, A. Lauder, H. Brown, P. & Wells, A. (1997). Oxford: Oxford University Press.

Berenfeld, B & Schrum, L. (1997). Future Directions and Final Thoughts' in Teaching and Learning in the Information Age: A Guide to Educational Telecommunications. Massachusetts. Allyn & Bacon. P 158

Bourdieu, P. (1990). ' Schooling and Cultural Reproduction.' p. 36 in *Political Issues in New Zealand Education*, eds J. Codd, R. Harker and R.Nash. Palmerston North: Dunmore.
Butler, J. & Clouse, R. (May 1994). 'Educational Technology and the Teaching of History: Promise, Practice and Possibilities.' P21.ED 373 005.

Cornu, B. (1995). ' New Technologies: Integration into Education. Pp 3-11 in *Integrating Information Technology into Education*, eds D. Watson & D. Tinsley. London: Chapman and Hall.

Counsell, C.(1997). 'The Place of History in the Post-14 Curriculum'. *Briefing for Secondary Heads of History*. Historical Association.

Cuban, L. (1994). 'How Teachers Taught': *Constancy and Change in American Classrooms, 1890-1980*. New York: Longman.

Dickinson, A. (Nov 1998). 'History Using Information Technology: Past, Present and Future'. *Teaching History*. Issue 93: p16-20.

DeVoogd, G. (1996) 'Cultural Congruence in the Technology Literate Classroom.' *Technology and Teacher Education Annual*. A.A.C.E. Charlottesville, V.A. http://www.webcom.com/journal/devoogd.html. Retrieved 30.5.99

Dwyer, D., Ringstaff, C., & Sandholtz, J. (1991). Changes in Teachers' Beliefs and Practices in Technology-rich Classrooms. *Educational Leadership*. May 45-52

Friere, P. (1970). *Pedagogy of the Oppressed*. New York: Herder & Herder.

Gawith, G. (1999).'The Riccarton Project'. *Good Teacher*, Term Two: p7.

Goodlad,J. (1984). *A Place Called School: Prospects for the future*. New York: McGraw-Hill.

Good Teacher. (1999). G. Gawith (Ed.), Auckland: Kilkenny Communications (Term 2).

Grabe, M. & Grabe, C. (1998). *Integrating Technology for Meaningful Learning* (2nd ed). Boston: Houghton Mifflin.

Halsey, A. Lauder, H. Brown, P. & Wells, A. (1997). ' The Transformation of Education and Society: An Introduction'. p23 in *Education, Culture, Economy, Society*. Oxford: Oxford University Press.

Harker, R. (1990). 'Schooling and Cultural Reproduction.'p 39 in *Political Issues in New Zealand Education*, eds J. Codd, R. Harker and R.Nash. Palmerston North: Dunmore.

Jenkins, I. & Turpin, M. (Nov 1998). 'Super history teaching on the Superhighway: the Internet for beginners.' *Teaching History*. Issue 93: p 40-44.

Linsell, D. (Nov 1998).'Subject exemplification of the Initial Teacher Training National Curriculum for ICT: How history examples were developed. *Teaching History*. Issue 93: p 33-35.

Ministry of Education. (1995). *Technology in the New Zealand Curriculum*. Wellington. Learning Media. p8

NZQA (1998) *School Qualifications Handbook*. Curriculum Prescriptions for History at 5th, 6th and 7th form levels. pp163-595

Patterson, S.& Swanson, L. (1997). 'Proposed Project from Australian Universities'. http://www.xs4all.nl~swanson/history/chapter02e.html. Retrieved 6.6.99.

Ryba, K. (1991) 'What we've got- is it right? ' *Computers in New Zealand Schools*. 3 (3), 12-16.

Stenson, M.(Oct, 1990). 'History in New Zealand Schools'. The New Zealand Journal of History. Vol.24, No2, p168-181.

Sewell, A. & Brown, M. (Mar 1999). 'Computers and Social Studies Education: Towards a Meaningful Partnership.' *Computers in New Zealand schools* .p 3-9

Thornburg, D. (1991).'Education, Technology and Paradigms of Change for the 21st Century'. USA Starsong Publications.p7 and 43-46.

Walsh, B. (Nov 1998). 'Why Gerry Likes History Now: The Power of the Word - processor.' *Teaching*

History, Issue 93: p 6-15.