

Focus: Professional development

An intergenerational approach to teaching technology-based literacy

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In this article we report on a Griffith Institute of Higher Education (GIHE) funded project designed to enable students in the Bachelor of Education, Secondary English strand, to become familiar with and use the Internet. The target for initial use was the site — <Oz Literacy Links> — <<http://www.gu.edu.au/gint/ozlit/homepage.htm>> constructed by the writers of the article. Additionally, the project provided opportunities for students to identify relevant criteria for evaluating and using literacy resources located at other Internet sites. While the project is about preservice training, many of the issues raised apply to teachers in schools who are seeking ways to integrate technology-based literacy into the curriculum.

The case for teaching technology-based literacy

A fundamental issue in literacy education is the growth of new types of literacy that come with new forms of electronic text, such as email and Web pages. Just as we have to learn how to meet the requirements of well-established genres such as business letters, academic essays, reports and so on, nowadays it is increasingly important to learn how to read and write in new hypertext genres.

For Bachelor of Education students in the literacy area, these developments on the Internet, as with all recent developments in mass- and multimedia, mean that expertise in reading print is not enough. A starting point for these students is learning how to access the vast range of literacy and language resources already available on the Web (Garton and Heimans, 1995; Javed, 1996).

While self-access use of the Web is highly desirable, the project team works from the position that the computer is not a replacement for the critical dialogue between teachers and students. Technocentric approaches, in which the computer is seen as a teacher, are inadequate. Rather, the role of the Web in our project is to provide extra opportunities for critical appraisal of literacy education resources. The role of the computer is to provide connections to a global virtual library, and to global communications, with the teacher or lecturer in facilitator role.

Snapshots of students as Internet users

While no one is surprised if academic staff admit to problems with computer literacy and unfamiliarity with the Internet, it is often assumed that undergraduates are members of a generation who are all 'Net' literate. While our faculty has students who are Web experts, on the whole our observation is that the computer literacy of many undergraduates does not extend beyond basic word-processing skills. This is evident in our WorldWide Web (WWW) workshops, and in two snapshot surveys conducted in 1995 and in 1996. The 1996 snapshot involved 43 third-year Bachelor of Education students enrolled in Secondary English Curriculum Studies. The results of the survey showed that 51% had never used the Internet before the workshop sessions (described in the following section); 28% of the sample had used the Net up to five times; and 21% claimed frequent use, defined as several times per month. Similar results were shown in a

second 1996 snapshot of 47 students enrolled in a literacy subject offered in the first year of the degree program. Of this group, most of whom were in the 18 to 20 age bracket, 52% reported no prior use of the Net, 23% had used the Net up to five times, and 25% claimed frequent use.

These two sets of findings are consistent with those from a 1995 survey of Internet use among 60 first-year Bachelor of Education students. Once again, over half the students reported no prior use of the Internet, even though access was readily available on the campus and incurred no direct cost to them. Also consistent was the observation that, generally speaking, students' use of computers was restricted to word-processing and to accessing library information about text availability for borrowing purposes.

While restricted use of computing was reported by both male and female students, our surveys and workshops also brought to light gender differences in attitudes to information technology, with several female students reporting reluctance to develop their levels of computer literacy. This may be a response to the high-tech, masculine discourse currently common in educational computing.

If the survey responses and observations reflect a general situation with undergraduates, then it is imperative that universities do not underestimate the amount of training that students will need in information literacy if subject-based Web use is to develop. In particular, Education faculties cannot assume that students in preservice programs will automatically transfer their knowledge about teaching literacy to the online mode. Similarly, schools cannot assume that practising teachers will easily be able to incorporate technology-based literacy opportunities across the curriculum.

The Griffith findings are significant on two additional counts. First, they suggest that explicit provision needs to be made in English literacy- and curriculum-related courses at university level for students to develop the conceptual and technical 'know how' necessary for using the Net as a literacy resource and thinking tool. If this does not occur, then it is likely that beginning teachers may encounter considerable difficulty when they undertake the task—as they inevitably should—of integrating the Internet and other technological tools, such as email, in the classroom in ways which enhance planning, teaching, learning and assessment. Second, the findings provide a foundation for challenging the assumption that students have considerable opportunity to develop knowledge, skills and expertise in using media technologies and that this opportunity is provided early, that is, before schooling and outside the classroom. Luke (1995) operates on this assumption when she writes:

In fact, the increasing availability and affordability of domestic media technologies (Camcorders, home computers, photo CDs, and so on) mean that children's first contact with media technologies is increasingly outside the classroom. In other words, most kids enter the classroom already literate in various media conventions or 'grammars'. (p. 15)

In this statement Luke points to availability and affordability as powerful determinants of young people's out-of-school use of some forms of electronic media texts. Further, she signals a need for teachers to come to terms with increasing access opportunities in re-designing forms of pedagogy. Green and Bigum (1993) similarly draw attention to the current explosion of digital multimedia combining computer software, CD-Rom databases, and consumer and educational service networks. They argue that this explosion is transforming education and communication. In elaborating on this, Green and Bigum identify a widening gulf between new generations of media-wise technologically competent students and luddite teachers who, they claim, are faced with 'aliens in the classroom'.

The survey findings mentioned earlier provide an opportunity for rethinking the broad descriptor, media-wise technologically competent. Specifically, the findings indicate that

technological competence is a rather nebulous term for something that tends to be multi-faceted in nature. The point is that Net literacy involves reading and writing practices that are quite different from those required for effective use of other forms of electronic media texts, including video, television, Sega, Power Ranger and Nintendo, word-processing packages, and CD-Roms. In an effort to develop Net literacy, staff and students in the Bachelor of Education program at Griffith University engaged in a staged approach to intervention.

A staged approach to intervention

The intervention to develop students' Net literacy was planned to occur in three related and complementary phases. Phase One was designed primarily as awareness raising, while Phase Two was evaluative in nature, requiring that students collect from the Net and evaluate a range of literacy resources from which to construct activities for use in the secondary literacy classroom. Phase Three of the project is currently in progress as first year students in a literature subject are designing reading and writing activities to encourage a wide range of literacy practices for readers of fiction written for children and young adults. The focus in this article is on Phase One and Phase Two.

Phase One: Establishing the Literacy Links site

The project began in 1995, and so far a prototype Web page renamed <Oz Literacy Links> has been added to our Griffith University Home Page, at <<http://www.gu.edu.au/gint/ozlit/Homepage.htm>>. Lectures have been given on aspects of information literacy and Web workshops have been conducted on accessing <Oz Literacy Links>. Additionally, students undertaking English Curriculum Studies have been required to use resources on the Web Page and at other sites for assessment items. So far, student responses to the use of Web resources have been very positive.

<Oz Literacy Links> guides students to resources used in lectures and assignments. At the time of writing, the site has been expanded from four to fourteen secondary pages leading from the Home Page: (1) <About Oz Literacy Links>; (2) <Online literacy>; (3) <Literacy Curriculum and Policy>; (4) <Literature on the Web>, offering sites related to a wide range of literary texts and authors; (5) <News Media>, providing sites for *The Australian Online*, overseas newspapers, and the ABC; (6) <Women Online>; (7) <Kids' Writing and Web Projects>, with examples of student writing at primary and secondary levels; (8) <Schools on the Web>, showing the range of texts and other media that schools are publishing; (9) <Australian Aborigines Online>; (10) <Language Learning>; (11) <Technology Enhanced Education Learning>; (12) <Student Web Pages>, a site which is under construction; (13) <Your Own Web Pages—A Simple Model>; and (14) <Web Tips and Resources>, giving Web and hypertext mark-up language (HTML) information, including Internet writing resources. Workshops using these sites are supported with traditional print-based worksheets and assignments.

Our approach to Web use in this project has grown from some initial lectures to Bachelor of Education literacy education students about the new information literacies in Semester 1, 1995, to workshops in Semester 2, 1995, where students were shown the Web and taught navigation strategies, to our present stage of development this year. We have moved on to an emphasis on content, rather than technology, but we are still at an early stage in the development of our WWW resources. Currently <Oz Literacy Links> is mainly a listing of relevant sites for students to explore, so that in effect students are given a focus for their searches, derived from print-based assignments (see Appendix 1). The role of the Web in these activities is to act as a virtual library, bringing resources into the classroom which would usually only be available in a traditional library, or would not be available at all.

Evaluative feedback on Phase One

Student responses to a written survey indicated a high level of enthusiastic engagement with the <Oz Literacy Links> site. Further, a sample of six students (three females and three males) agreed to be video-recorded as they talked individually about their experiences of navigating the Net. Each talk session was approximately five minutes' duration and took the form of a reflective commentary. Analysis of the recorded talk brought to light three main issues.

The first issue was control. The students' talk revealed their acute awareness of the need to develop navigational skills or the know-how to use signposts, backtracking tools and anchor points as they explored Net sites. Interestingly, the students consistently relied on journey metaphors when talking about control. They talked of 'riding a wild horse and waiting to fall off', 'getting lost', 'going off track', and 'going on a mysterious journey but not knowing or controlling where'. Another student commented positively on the discovery element, saying 'It's all only a button away! Knowing more means being able to do more with what is clearly a rich source of current, on-tap information'.

The second issue related to the learning environment. Each student reported that when they were using <Oz Literacy Links>, teacher and student interacted as collaborative learners. Their talk showed an awareness of altered authority relations in the computer laboratory and how, in that context, the knowledge that counted was knowledge that was shared spontaneously among the group as sites were located and examined.

The third issue concerned factors affecting students' future explorations of Internet sites. Most students reported a willingness to further explore the potential and utility of <Oz Literacy Links> in their own time. There was no self-reported sense of being alienated or threatened, even though, as mentioned previously, students were well aware of the need to develop navigational skills. However, students differed in whether they perceived exploration of the <Oz Literacy Links> site in particular, and the Internet more generally, to be a central or marginal concern, especially in relation to study and leisure demands. With regard to the former, students reported that only limited use of the Net had been made in their university studies to date. However, several students reported a peer pressure to participate in leisure activities involving chat lines and email.

Phase Two

In the second phase of the project, third-year Bachelor of Education students in English Curriculum Studies B were assisted in the Faculty computer laboratories to examine <Oz Literacy Links> Web pages for resources suitable for use in secondary literacy programs. The students were encouraged to develop search strategies which would expedite the collection of a range of Internet resources within and beyond the <Oz Literacy Links> pages with two related aims in mind. The aims were namely to develop strategies to read critically and evaluate Internet resources, and to construct literacy activities for classroom use. The collection, evaluation and construction aspects of the students' work in this phase were guided by a task sheet called 'The Resource Folio' as outlined in Appendix 1.

During Phase Two, students engaged in three main activities. Firstly, students collected resources that encouraged a wide range of reading and writing practices. Informing the collection was a concern with challenging conceptualisations of authorship, texts, and how meaning is made. For example, one site offered a collection of several versions of the fairytale 'Cinderella' with instructions to reconstruct meaning by reading horizontally and vertically (see *The Cinderella Project* from the University of Southern Mississippi at <http://www-dept.usm.edu/~engdept/cinderella/cinderella.html> (Salda, 1995).

Words of caution offered in a student's critically reflective response to the collection of Internet resources support our earlier claim that students do not necessarily form part of the Net-literate generation. She offers the view that: 'I personally view the Internet as a sort of X-File. The

resources *are out there* but I often wondered, will I ever find them? I spent far more time collecting three items from the Internet, than the remainder of the traditional non-Net resources. This is due to my inexperience with the medium, limited access, time constraints and also because, upon reflection, much of the data was inappropriate for classroom use.'

Secondly, students produced an initial reference guide for evaluating resources on the Internet. Beginning with suggestions from the site at gopher://vmmsgopher.cua...SSAYS551AAEK12TEXT.txt (Partland, 1996), students addressed various questions: Who created the resource? How was the resource created? When was the resource created? Is it updated regularly? What is the purpose and the intended audience for the resource? Other students added to the reference guide of evaluative criteria for Internet resources with: Is the resource just a print resource online? If so, is it accurate? Is the resource hypertext designed specifically for the Web? Does the resource offer a communication lane?

Thirdly, students constructed classroom activities focusing on technological literacies, and then examined the activities for theory-practice connections. For example, one student made links between critical theory and her approach to teaching practice with the view that 'the Internet in recent times has on occasions been perceived as a symbol of the dream of pluralism. That is, all information on the Internet alluded to other information and there is simply no dominant form. From my experience of using the Internet, I have begun to see it as the great opportunity and the great anxiety.'

Theory-practice understandings such as this can generate technology-related school literacy practices. For example, an activity generated from Item B of the Resource Folio (see Appendix 1) proposes that the Internet resource *The Cinderella Project* from the University of Southern Mississippi, at <http://www-dept.usm.edu/~engdept/cinderella/cinderella.html> (Salda, 1995) can be used as a model for students reading a range of print-based narratives as fragmented texts which position the reader to construct multiple readings.

Two students who used the Cinderella resource reflect on the potential of reading practices that range across Net and non-Net modes as follows:

When one text is deliberately juxtaposed against another, students can easily isolate the ways in which each text performs to create meaning.

The way a narrative appears is the result of the interests it was designed to serve. No text can be considered authoritative, but contains gaps, silences and contradiction. These resources provide fertile ground for exploring poststructuralist concepts of texts, authorship, and meaning making.

Why use WWW pages in literacy education subjects?

The short answer to this question is: because tertiary education students need to learn new literacy practices for study purposes, and for their future work opportunities. In the case of literacy education students in Bachelor of Education courses, they will also have to know how to teach the new genres and new literacies that come with the Internet and hypertext. A major feature of literacy education in relation to new information technology media is that the medium is the message, with the 'how' being as important as the 'what'. The opportunities and anxieties referred to by students must be attended to if teachers are to become 'media-wise technologically competent'.

The concept of hypertext has been the focus of a great deal of hype about the dawn of a new age of non-linear reading and learning (Lemke, 1996; Tuman, 1992). There has also been a healthy dose of more pessimistic approaches to the negative effects of technology on literacy

practices (Bigum and Green, 1993). Despite the promotion of the intuitive features of hypertext, there is nonetheless a lot to learn when we encounter hypertext for the first time on a Web page.

In terms of hypertext demands, the user in the Griffith University project is required to use hypertext in an exploratory mode, with no opportunity to engage in constructive use of the Web site (Snyder, 1996). 'Constructive' uses of hypertext would include opportunities to add to or change the shape of the Web resources that students access. These constructive uses of hypertext are envisaged in future development of <Oz Literacy Links>, budget permitting, with students being given opportunities, this year, to submit Web resources and Web pages of their own for inclusion in the site. This approach has proved successful with Garton's postgraduate students in the MA in Applied Linguistics, some of them producing successful assignments in the form of Web pages, one being published in a journal Web site (Heimans, 1996).

Better still, we are looking for ways to engage Griffith University and school students interactively while they are using this resource. We also wish to add mailing list facilities for students to use to communicate with lecturers and each other during courses. All these developments are aimed at integrating Web resources into the literacy education curriculum, with opportunities for students to publish additions to the virtual library.

Conclusions

The implications for our project are clear: before we can hope to introduce preservice teachers to literacy resources on the Web, we have to deal with their generally low levels of 'Internet literacy'. There are fundamental issues of access and equity here, with some students and some schools and colleges having less access to computers than others. There is now an enormous amount of cultural capital associated with expertise in the new information technologies, and students without ready access to the Net are disadvantaged (Emihovich, 1990). Generally speaking, if you are a female, poor university student, with English as a second language, you are less likely to be computer literate than if you are male, Anglo-Australian, and attended a private school. (Private schools are well represented, demographically speaking, on the Web). University policies and curricula should address these inequities.

Further, the project has shown how Web pages offer exciting teaching and learning resources, and are well worth the effort we have to make, in the early stages, to include them in literacy education subjects. What Web pages will not do is to provide an easy, cheap means of 'delivering' educational 'products' to student 'consumers'. What they do provide, however, is a vital means of challenging assumptions about how texts construct meanings through different reading and writing practices.

Appendix 1

STATEMENT OF TASK

You are asked to prepare a RESOURCE FOLIO which will be useful for you as a beginning English teacher. The collection of conventional and online resources is as important as your critique of these items expressed as lesson ideas and written rationales. You will be assisted to find curriculum resources on the Internet. Your critique and evaluation should address issues of inclusivity. Please refer to the attached guide. YOUR CRITIQUE AND EVALUATION MUST COMPARE NET AND NON-NET SEARCHES FOR RESOURCES.

- Item A:** A review of one (1) SHORT STORY collection (reviews suitable for a guide to books written for a professional audience). (500 words)
- Item B:** Five (5) activities for each of two (2) NOVELS and one (1) PICTURE BOOK you have read (published since 1990). These activities can be teacher-directed/facilitated or students can do them alone. A list of titles will be distributed for you to make a selection. Explicitly state the literary theory or theories underpinning practice. (500 words)
- Item C:** A collection of four (4) different MEDIA GENRES, one from magazines, newspapers, television, film, or computer and CD-ROM. For each genre explain in 100 words how it is constructed for a particular purpose and tenor. Name and explain the generic structures in relation to the context/text model of language. (500 words)
- Item D:** A collection of POETRY (at least twelve (12) poems). These may be selected either thematically (e.g. love, war, death, identity, drugs) or by author or as examples of the use of literary styles and forms (e.g. imagery, satire) or ideologies and discourses. Write a rationale for your choice explaining why and how you would use two (2) of these poems in the classroom. (500 words)
- Item E:** A collection of TRADITIONAL and CONTEMPORARY DRAMA suitable for use in the senior English classroom. Choose one play and explain in 500 words (i) what the play is about (that is, theme, plot, discourse, ideology, etc.) and (ii) how you would introduce the text in the classroom.
- Item F:** Samples of student writing. Discuss how you would use five (5) writing samples to enhance student writing in English. Explain the approach to supporting writing practice.

A section (at least one resource) of each of your three (3) items MUST include resources collected on the Internet. These resources, along with your critique and evaluation, will be shared with peers during workshop sessions. All resources must be referenced.

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