

**THE LE@RNING FEDERATION'S DIGITAL RESOURCES:
A PRELIMINARY STUDY OF ACCESS, USE AND VALUE**

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INTRODUCTION

In 2001 the Ministerial Council on Education, Employment, Training and Youth Affairs of the Australian Government established The Le@rning Federation (TLF) and charged it with producing online curriculum materials and making them available to education systems in the states and territories of Australia and New Zealand. Specifically TLF aimed to:

- produce a repository of online materials in priority curriculum areas;
- develop online materials that
 - represent cutting-edge best educational theory and practice, and
 - engage teachers and students in active learning and in creative and critical thinking;
- support and reinforcing the increased priority given to innovation, enterprise and knowledge by governments in Australia and New Zealand;
- support teachers in developing enterprising education;
- engage students in innovative learning environments;
- equip students to live competently and proactively in an environment increasingly characterised by online communication, learning and work; and
- stimulate the growth of a marketplace for quality public and private online curriculum content.

While a major component of TLF has been the development of a repository of Learning Objects,¹ a second component has been the development of a bank of Digital Resources. A Digital Resource consists of an item, such as a photograph, painting, poster, map, moving image, or audio file of, for example, a broadcast or speech, that is in a digital format and that thereby may not be readily accessible otherwise to students and teachers. TLF licenses such items from a range of cultural institutions including the National Film and Sound Archive, the National Archives of Australia, the National Library of Australia, the Museum of New Zealand Te Papa Tongarewa, CSIRO and other scientific organisations and private individuals.

Each Digital Resource (DR) typically includes a description, an interpretation of its educational value, and an acknowledgement of its source. For example, 'The *Britannic* leaving Sydney' (Figure 1) is a photograph currently held in the National Library of

¹ Learning Objects are modules of learning materials that are reusable in multiple settings for multiple purposes; that are usable in classrooms as components of units of work accompanied by digital and non-digital materials; and that are accessible from digital repositories. Reviews of TLF's Learning Object program are contained in Freebody, P. (2005). *Does the use of online curriculum content enhance motivation, engagement and learning?*; Freebody, P. (2006). *Early-stage use of The Le@rning Federation's learning objects in schools*; and Freebody, P., Muspratt, S. & McRae, D. (2007). *Evaluating The Le@rning Federation's national online digital learning program*; all available at <http://www.thelearningfederation.edu.au/tlf2/showMe.asp?nodeID=891>

Australia. It shows the *Britannic* about to depart from Circular Quay in Sydney in 1901. Figure 2 shows the description and the educational value statement attached to this DR. The educational value statement points to details that might not be immediately obvious and provides additional background and contextual material for the DR. Thus, in contrast to the Learning Objects, a DR comes with an informational background but not with a pre-set 'instructional design' so that it can be used by teachers and students in a range of flexible ways to suit immediate curriculum needs.



Figure 1: Example of a TLF Digital Resource (The Britannic leaving Sydney, 1901)

In this report, we summarise the results of an interim, small-scale evaluation of the use of these Digital Resources (DRs). The evaluation involves a survey of teachers and a round of school visits. This interim evaluation forms part of the broader, ongoing evaluation of the implementation of TLF's online curriculum content project. The general questions addressed in this report concern:

- teachers' accessing of appropriate Digital Resources;
- teachers' use of the Digital Resources; and
- teachers' evaluations of the Digital Resources.

Description

This is a black-and-white photograph, measuring 9.5 cm x 12 cm, of the scenes surrounding the ship 'Britannic' as it departs Circular Quay, Sydney, with Imperial troops on board. Hundreds of people have gathered to watch, with some standing on their horse-drawn vehicles to gain a better view.

Educational value

- This asset features the 'Britannic', a ship requisitioned from the White Star Line by the British government to transport troops to and from the Boer War in South Africa between November 1899 and October 1902; two of its ten voyages as a troop ship were between South Africa and Australia and New Zealand.
- It shows the 'Britannic' as she was when representing Great Britain in a review (a formal military inspection) in Sydney Harbour, one of the events that marked the inauguration of the Commonwealth of Australia - her passengers included an honour guard (a military group performing drill exhibitions on ceremonial occasions) made up of 1,000 representatives of six British regiments that participated in the Federation procession through Sydney on 1 January 1901.
- It is described in the National Library of Australia's catalogue as possibly showing the departure of Boer War troops - while this is almost certainly untrue, the 'Britannic' is known to have carried troops of the 6th Queensland Imperial Bushmen and re-enlisting NSW troops to South Africa, and the 4th South Australian Imperial Bushmen home from South Africa during a later voyage in 1901.
- It suggests that only invited guests or ticketed spectators were allowed to get close to the departing vessel as there are two crowds of people watching the 'Britannic' depart, with the largest number gathered along the shoreline and a second line of people apparently separated from the grassed foreshore by an unseen barrier.
- It shows various horse-drawn vehicles - a coach driver waits for his passengers near the P and O building; other than a jinker or gig (in the centre) and a phaeton (the four-wheeled vehicle on the left), the other horse-drawn vehicles in the foreground are mainly two-wheeled drays, commonly used for both transport and haulage.
- It illustrates a range of men's and women's clothing typical of the Victorian era, when hats were an essential accessory for both sexes - suits were popular daywear for men; one man standing on a dray displays a pair of braces used to hold up his trousers; the women are all wearing long skirts and blouses or long dresses, which were often actually a separate bodice and skirt, with some wearing the fashionable 'leg-of-mutton' sleeves (with very large puffs covering the upper arm).
- It shows part of Circular Quay, near Bennelong Point as it was in 1901 - the brick building with a sign reading 'P and O' (the Peninsular and Oriental Steam Navigation Company) was one of many along Circular Quay housing shipping companies; the Quay was most developed at its centre, with many brick buildings of three or more storeys; the rough corrugated iron clad shed and undeveloped grassy land indicates that the photo was taken near the end of Circular Quay where it was less developed.
- It depicts a tall gas lamp-pole (centre, in front of a funnel) - individual gaslights were first introduced to Sydney in the 1820s; electric street lights did not commence operation in Sydney until the night of 8 July 1904.

Figure 2: Example of an educational value statement (attached to the Digital Resource shown in Figure 1)

SURVEYS AND SITE VISITS

Methods

The survey used in this preliminary study contained questions about teachers' use of the DRs, in particular, questions about accessing the DR, using the DRs in teaching and learning activities, the usefulness of the DRs in supporting teaching and learning

activities, and advice for TLF's future development of the repository of DRs. The survey, shown in full in Appendix 1, was web-administered and voluntary.

Six observational site visits were conducted, involving lesson observations and interviews with teachers. Exemplary classrooms were selected according to teachers' responses to the survey, in particular, their responses to free response questions. In addition, classrooms were selected so that schools from urban and rural areas with high proportions of low SES students and with large Indigenous enrolments were represented in the sample. Reports on the site visits are contained in Appendix 2.

Participants and their Schools

Survey

Across all systems and sectors in Australia and New Zealand, responses to the survey were received from 78 teachers representing 72 schools. More than half of the sample (68%) of teachers were female, and, as shown in Figure 3, the teachers had, on the whole, high levels of professional experience (57% of teachers have had more than 20 years teaching experience, and 76% have had more than 10 years teaching experience).

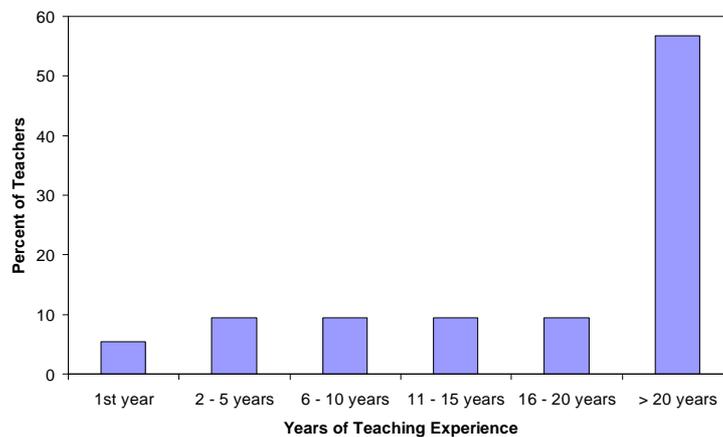


Figure 3: Years of teaching experience

Regarding characteristics of the schools represented by the teachers, Figures and 5 summarise the kinds of schools and characteristics of school enrolments according to the teachers' reports. Figure 4A shows the distributional pattern according to jurisdiction (state or territory of Australia and New Zealand). It is clear that the distribution is far from even. There were no responses from schools in the Northern Territory (and only one or two responses from schools located in Tasmania and New

Zealand), but a large number of schools represented were located in Victoria; in fact, Victorian schools make up a little more than a third of the sample of schools. Other school characteristics summarised in Figure 4 show more predictable patterns. Specifically:

- a little more than half of the schools (56%) are administered by the government (Figure 4B);
- a large majority of schools (81%) are located in urban areas (Figure 4C); and
- a large majority of schools (80%) are co-educational institutions (Figure 4D).

In addition, there were 40 primary schools classrooms (56% of schools) and 30 secondary schools classrooms (42% of schools) in the sample, with two teachers from P-12 colleges teaching across primary and secondary year levels.

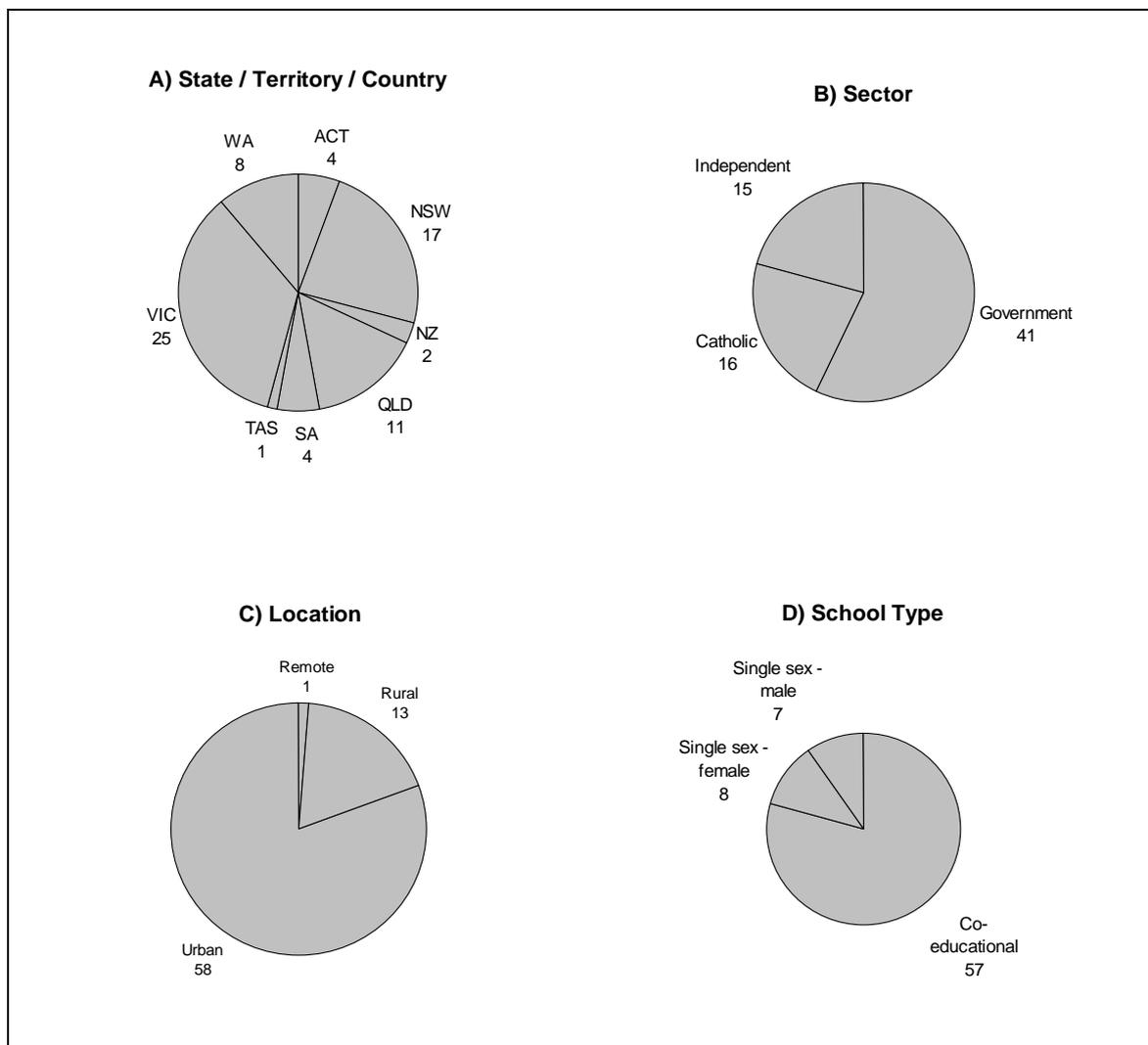


Figure 4: Characteristics of schools based on teachers' reports (Number of schools = 72)

Figure 5 shows characteristics of the schools' enrolments. The majority of schools have small enrolments of:

- LOTE students (62% of schools with fewer than 10% LOTE students), and
- Indigenous students (95% of schools with less than 10% Indigenous students).

That is, in Figure 5, for LOTE students and for Indigenous students, there is a peak at 1-10% of school enrolment, but there is a rapid decline in the number of schools with proportions of LOTE and Indigenous students beyond 1-10%. Similarly, the peak for the percent of school enrolment who are students from low SES backgrounds occurs at the 1-10% level, but there is a more gradual decline such that only 40% of schools have fewer than 10% of students from low SES backgrounds.

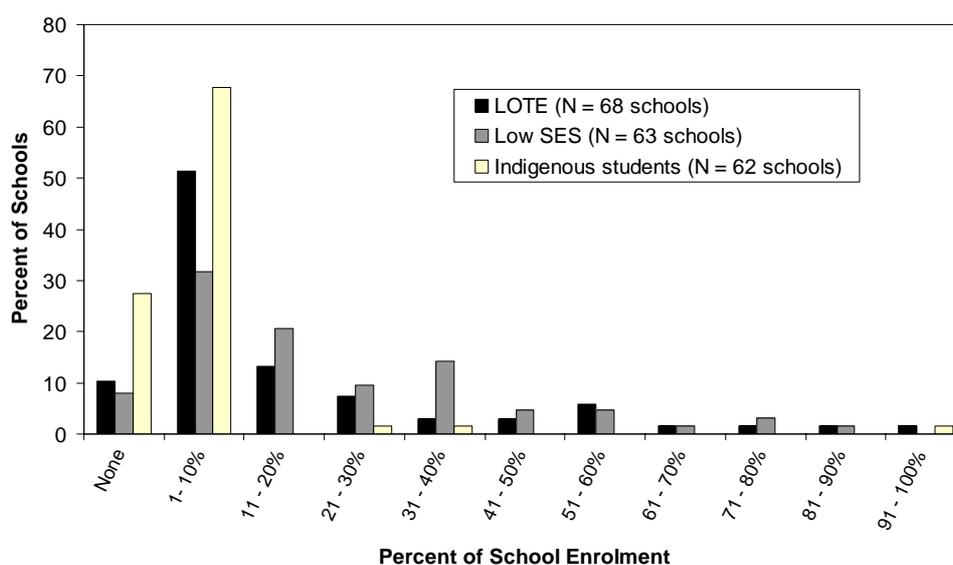


Figure 5: Characteristics of school enrolments: LOTE, Low SES and Indigenous students

Site Visits

The six schools in which classroom observations and interviews with teachers were conducted were drawn from three jurisdictions: Victoria – 3; South Australia – 2; New Zealand – 1. In addition, the sample included two secondary schools, one Catholic school, two schools from rural areas, one school with a large proportion of students from low SES backgrounds, and one school with a comparatively large proportion of Indigenous students.

The following give a flavour of the six activities observed:

- A female teacher with more the 20 years teaching experience (and a teacher librarian), teaching a Years 6 and 7 composite class on the topic of 'Immigration';
- A female teacher with more than 15 years teaching experience, teaching a Year 5 class on the topic of 'Natural Disasters';

- A female teacher with more than 20 years teaching experience, teaching a Year 10 English class but who were commencing the Year 11 syllabus, on the topic of 'English Visual Language'.
- A male teacher with more than 20 years teaching experience, teaching a Year 6 class on the topic of 'Famous Australians'.
- A male teacher with more than 20 years teaching experience, teaching a language lesson to a Years 4, 5 and 6 composite class; and
- A male teacher in his first year of teaching, teaching a Year 11 ESL class.

Findings

In this section, we present major findings from the two data sources. The findings draw more heavily on the survey data, but the site-visit reports, which give summaries of classroom observations during which TLF DRs were used and summaries of interviews with teachers, are cited where appropriate.

Accessing the Digital Resources

Most of the teachers (74%) reported that they accessed the DRs from a CD or DVD supplied by TLF, and three-quarters of these teachers reported that the CD was loaded onto individual computers. A much smaller percentage (12%) obtained access from a searchable digital repository, and 14% reported that they accessed DRs from both the CD and a repository. That there was such a large percentage of teachers reporting that they access DRs from the CD should not be surprising given that the CD was distributed to schools specifically for the purpose of gathering data for the survey.

On the whole, teachers experienced few difficulties when searching for appropriate DRs. A selection of comments follows:

Easy to use, highly successful; engaging

The resources were excellent – in quality and accessibility

Functioned well allowing easy access

Access to the resource was clear and easy

Very user friendly and easy to navigate. Links worked well. Subjects categorised in an easily accessed manner

Of those who had difficulty, their difficulties can be traced to one of two problems. First, some teachers commented on inadequacies of the search engine's capabilities. Typical comments include:

Search results were too broad and couldn't [be made to be] more specific.

I found the actual finding of appropriate images difficult ... I [gave] up on the images as I could not afford the time needed to do the search for an appropriate resource.

We found some of the search results obscure.

The one issue found was the problem with the menu after into page. All the menus on left-hand side do not accurately reflect the underlying resources. You don't get a narrow enough search from these menu titles.

Second, some teachers commented on the limited range of available DRs, claiming that they could not locate resources appropriate for a particular learning topic or year level. Typical comments included:

Some fantastic resources for the junior and middle school, but limited resources for senior school environment.

Not enough science or maths resources.

Some great images but I cannot as yet make connections to the curriculum I am currently teaching.

I checked what was available but could not use resources for the specific content I had to cover.

The CD did not provide enough resources. A Google search provided a greater number of quality resources though it did take more time to sort the good from the bad.

[Using the CD] I did not find that the content was able to be used with my programs.

[Using the CD] there were no resources that matched what I was covering in class.

Clearly further development of the scope of the repository and further refinement of the search engine is needed. The CD distributed to schools contained only a limited selection of DRs and the search engine had not been fully developed.

In addition, there were comments such as:

Have found some images would not load.

We found the navigation a bit slow. You need to be able to skip through the images a bit easier to make it more user friendly.

Difficulties such as these could be attributed to older technology available in schools, or not having appropriate software loaded onto their computers. As with the evaluations of the Learning Objects, the general response to the DRs was positive and technical issues and scope of available materials made up the bulk of the negative responses.

Using the Digital Resources

From the survey data, the DRs were used across both secondary and primary year levels (Figure 6), but they were used more frequently with upper primary and lower secondary year levels. There were only a few teachers using the resources with lower primary year classes. The DRs were used in a range of curriculum areas (Figure 7), but mostly for in the English / Literacy and Social Studies / SOSE / History curriculum areas. Additionally, a large number of primary teachers indicated that they used the resources in an integrated or cross-disciplinary curriculum area. Given that the content

of sample CD distributed to schools was limited mostly to Australian History, it is not surprising that teachers were using the resources mostly in Social Studies / SOSE / History curriculum areas.

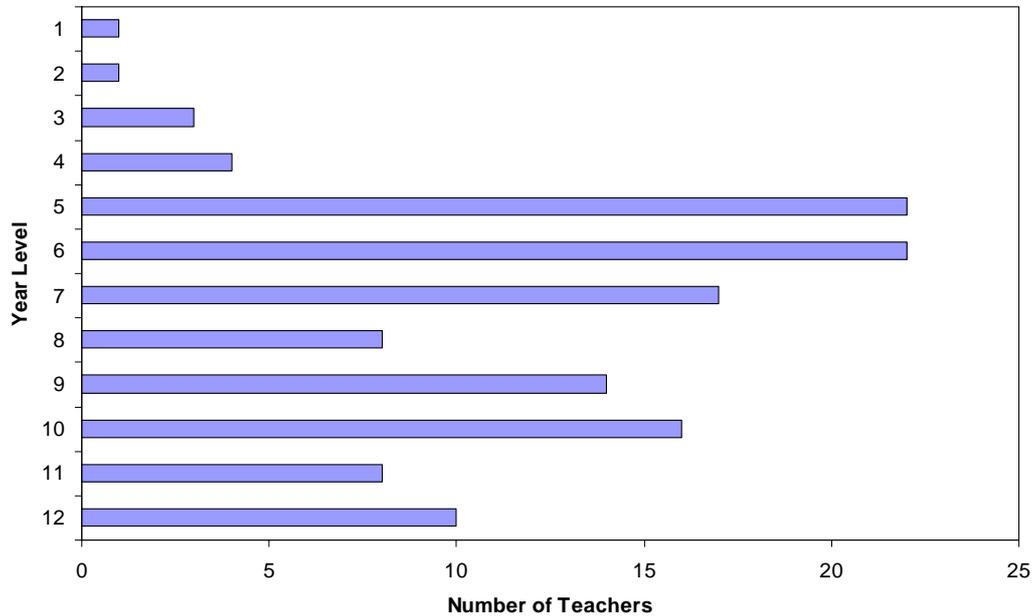
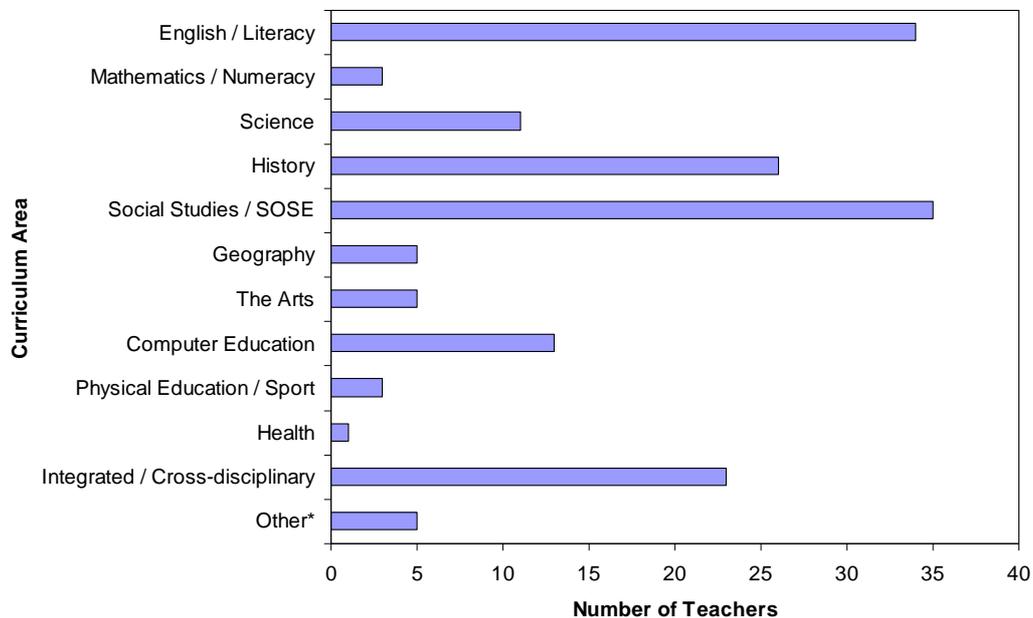


Figure 6: Year level in which teacher was using Digital Resource (Note: Teachers could nominate more than one Year Level)



* Demonstrating, or viewing content. Two teachers reported using the resources in a "Media" unit.

Figure 7: Curriculum area in which Digital Resource was used (Note: Teachers could nominate more than one curriculum area)

Teachers objectives for using the DRs were varied. First, a large number, particularly of History and SOSE teachers, claimed that they require their students to

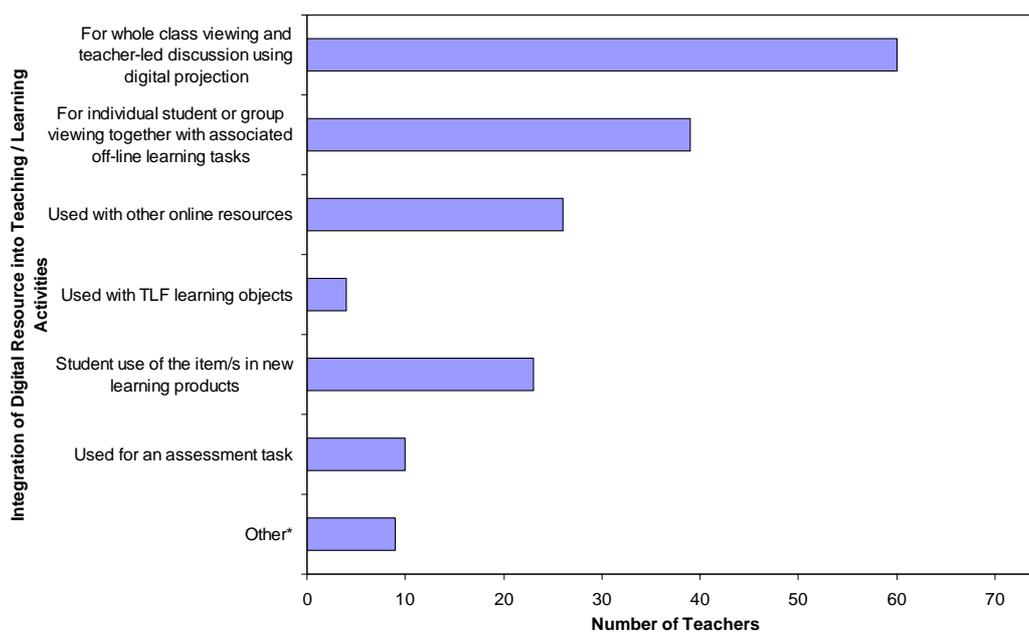
access diverse sources of information, including primary sources. For these teachers, the TLF repository was a convenient source. Some of these teachers mentioned particular topics or units of work, including: World War One and Two, conscription, gold rush, Australian Prime Ministers, work practices, convict life. Second, teachers used the resources, presumably with other sources of information, to compare or contrast an aspect of a past social environment with current circumstances (specific topics mentioned were: past and present advertising, changes in Australian identity, past and present schooling practices, changes in immigration policies). Third, teachers were not so concerned with content of the resource; but rather with its motivational effects. They were concerned with using the resources as '*a visual*', '*a stimulus*', '*a tuning-in activity*', '*a springboard for discussion and further research*', or '*to engage*' students. Fourth, teachers reported using still images in visual literacy units, either in a critical literacy context (for instance, '*To make apparent the use of visual elements to position the viewer*') or as a writing exercise in which students explored the use of descriptive language.

Although it was not possible to count precisely the number of teachers using the different media types (still images, moving images, and audio files), there is evidence to suggest that the sample of teachers were using a range of media types. It is noted, however, that only still images were used in the classroom observed during the site visits. Teachers used a range of methods to make the DRs available for students; PowerPoint and Word being the most popular. A large number of teachers, in turn, placed these electronic files on their schools' intranets or into MyClasses pages or a similar space. A substantial number of teachers provided access to the resources directly off the CD or through a repository, and a few teachers allowed their students to search the CD independently (for instance, one teacher wanted students to find appropriate images to insert into a report). Many teachers mentioned the use of Interactive White Boards and data projectors for whole-class viewing, but few of them elaborated. It was not clear if they had first placed their selected files into a format for viewing or if they were accessing the files directly off the CD. There was also a small group of teachers who wanted their students to access images only, and most of these simply printed and copied the images. Finally, there were teachers who had the technical knowledge and skills, and resources to explore different methods before deciding on one or multiple methods. As one teacher explains:

The 'Aeroplane Jelly' cover was added as an image and text box to a MyClasses page and the other two files (Announcement of victory, and Billycarts near Rockhampton) were added as files in a Files Box. I had already made an Electronic Learning Folio on Boy [for a study on Roald Dahl], and I originally added them to it. However, it slowed the loading of this too much. So I removed them from the elf and put them on the actual

page as text/image and then as files. I put the lesson details on the elf and then referred them back to the page. I added all the URLs to the elf.

Figure 8 shows teachers' responses to a question concerning the integration of DRs into teaching and learning activities. Most teachers displayed the resources to the whole class, and a little more than half the teachers arranged for individual or small group viewing. Most of the teachers in the latter group also reported whole-class viewing, suggesting a sequence: they begin with a teacher-led discussion with the whole class, and then they allow students to work individually or in small groups. Approximately one-third of the teachers used the DRs with other online resources, and one third of the teachers reported that students used the resources in a new learning product. In addition, there were no significant differences between primary school and secondary school teachers' preferences for any one of these ways of integrating the resources into teaching and learning activities.²



* Demonstrating; viewing content; did not use any.

Figure 8: Integration of Digital Resources into teaching and learning activities (Note: Teachers could nominate more than one)

Evaluating the Digital Resources

Teachers were asked to rate the usefulness of the DRs in supporting both their teaching and their students' learning, and the usefulness of the educational value statement attached to the resource. Figure 9 shows the number of teachers responding at each point on a four-point scale to the questions concerning teaching and learning,

² In a series of crosstabulations, the largest value for Yates' corrected χ^2 was 1.78 with a p-value of 0.18

and Figure 10 shows teachers' responses on a four-point scale to the question concerning the educational value statements (see Figure 2 for an example) attached to the DRs. Both Figures show that, on the whole, teachers rate the usefulness of the DRs and the educational value statements highly. Teachers ratings of the usefulness of the DRs in supporting teaching and in supporting students' learning were highly correlated (Spearman's $\rho = 0.80$, $p < 0.001$), indicating that high ratings of the usefulness for supporting teaching go with high rating of the usefulness for supporting students' learning. Also, it is noted that there is no detectable difference in the ratings of the usefulness of the resources between primary school and secondary school teachers (Usefulness in supporting teaching: Mann-Whitney $U = 592.0$, $p = 0.975$; Usefulness in supporting student learning: Mann-Whitney $U = 472.5$, $p = 0.362$; Usefulness of educational value statement: Mann-Whitney $U = 575.5$, $p = 0.373$). There is, however, a tendency for female teachers to rate the usefulness of the resources more highly than do male teachers, although the difference reaches statistical significance for teachers' ratings of the usefulness of the educational value statements only (Usefulness in supporting teaching: Mann-Whitney $U = 379.0$, $p = 0.096$; Usefulness in supporting student learning: Mann-Whitney $U = 308.5$, $p = 0.081$; Usefulness of educational value statement: Mann-Whitney $U = 353.0$, $p = 0.005$). This teacher gender effect may reflect minor differences in the gender distribution among subject areas and the disproportionately large number of DRs relating to humanities and arts related subjects.

Teachers were asked to comment on their responses, and we turn now to a closer examination of patterns among the responses. First, there was a small number who claimed that the DRs were 'Not Useful' either in supporting their teaching or in supporting students' learning. From their comments on the ratings or from their comments to other questions, it is clear that most of these teachers could not locate resources that were relevant to the topic of the lessons. Similarly, most of the teachers who rated the educational value statements as 'Not Useful' did not access the statements and thus could not comment with any first hand validity on their usefulness.

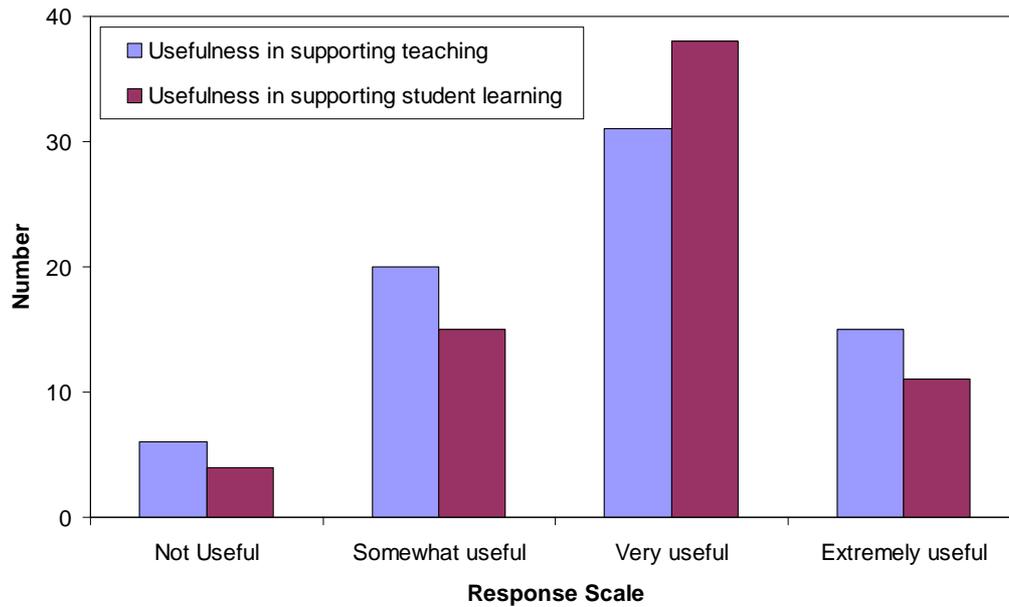


Figure 9: Teachers' ratings of the usefulness of the Digital Resources in supporting teaching and student learning

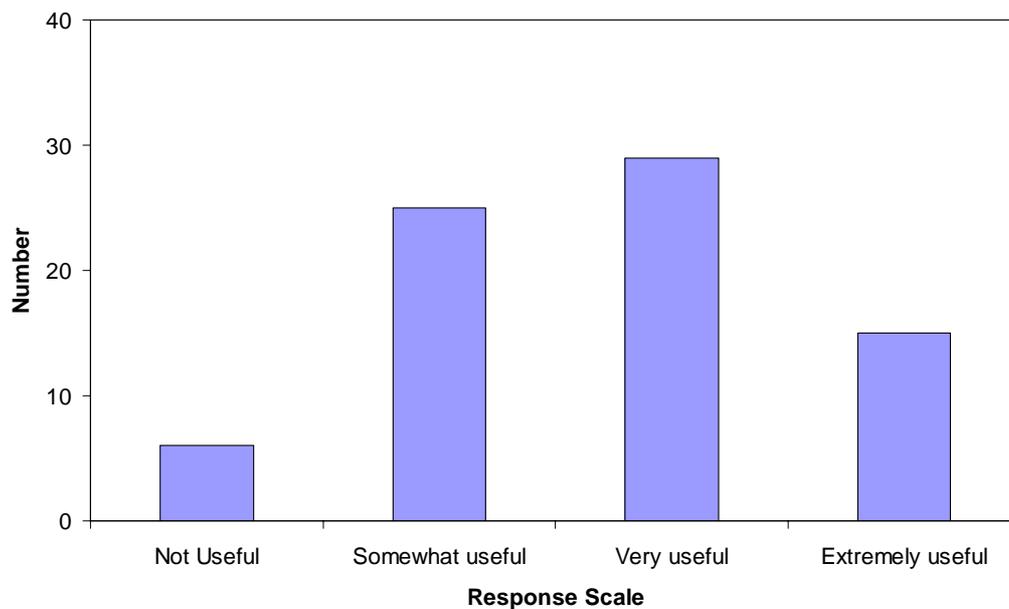


Figure 10: Teachers' ratings on the usefulness of the educational value statement in providing background information about the digital resources

The comments by teachers who rated the resources as useful included:

It saved me an enormous amount of time trying to search for relevant digital resources.

Videos were short, well storyboarded and give the class the opportunity to watch, discuss and internalise in a short space of time.

Very useful in providing materials that would otherwise not be available.

I often spend a lot of time looking for resources and then writing my own material to go with them. This is a great resource in that there is a huge variety of resources that are appropriate for student use.

Students gained a lot from accessing digital resources that were real and about Australia as it made it all relevant to their needs.

Most teachers who were more critical of the usefulness of the resources did not elaborate on their rating, but there were some comments worth noting. First, there were teachers who were, again, critical of the range of content, both in terms of content across the major curriculum areas and in terms of content relevant to Australian contexts at the expense of New Zealand contexts. Second, there were teachers who noted that the TLF repository of DRs was one of a range of sources (both digital and non-digital) that they accessed. However, some of these teachers appeared to be arguing that, unlike other digital resources, the usefulness of the TLF repository to teaching would have been enhanced if there were internal hot-links contained in, say, the educational value statements. A typical comment was:

It was one source of images that I could use. There are many other sources of images, including text books, the internet and other reference books. This was an easily accessible resource similar to Encarta or The World Book but without links to alternate sources.

Third, there were teachers who, it appears, were using the resources for the first time or at least were inexperienced in the use of digital resources, and the frustrations associated with their inexperience influenced their ratings of the usefulness of TLF's DRs. Nevertheless, many of these teachers stressed that they would consider their use in the future now that they were familiar with the workings and content of the resource. Typical comments were:

May be more useful next time I complete this task with a class as I am now more aware of what this resource involves and may be used for.

If I had more time to explore and found the index then I would use it all the time.

Time is always a precious resource in a school – I would have loved to have unpacked these further.

It was used as a class discussion stimulus. If I was doing it again, I would like to enable it to be networked to provide more validity to its use.

With respect to the usefulness of the educational value statements, teachers on the whole rated its usefulness highly, and in their comments, they wrote that the statements gave information about the resource's origins, its context, and pointed to detail not readily evident. In addition to explaining the content and context of the resources, teachers commented that the statements also contained information on how the resource could support learning activities. With a couple of exceptions, teachers' comments were positive. Some typical examples were:

The statement was useful in providing background detail and suggesting ways students might respond to the material. The statements were useful as discussion starting points and often enabled the discussion to go beyond the surface features of the resource.

The education value statement really focussed me onto different ways I could use the image with the students. It allowed me to target their needs more explicitly.

Puts you in the picture of what's going on. Gives you discussion points you may not have thought about.

Great assistance in setting the context of the resource. Also, with the [resources] I chose to use, the statement referred to the government policy of the period.

When browsing the resources, it jolted my memory and made apparent links that I had not made, suggesting other areas where I could use the same image. [It allowed] opportunistic browsing rather than the focussed searching I had been doing.

Twenty-five teachers (approximately one-third of the sample) reported that they encouraged their students to refer to the educational value statements. Even among those who said that they did not refer students to the statements, there were teachers who claimed that they might do so in the future given a different context or with older students. When asked to comment on their answer, typical comments included:

Still in the early stages of development but will definitely use these as we progress our understanding in using [digital resources] to enhance our teaching.

I was not actually interested in the students actually looking at the statements. But I can see how I can use it in the future.

Not in this particular case, but it was written in such a way that it could easily be included in the lesson.

For some of the [resources], but not all. If they were used by individual students, they were referred to the statements. In teacher directed sessions, students did not read the statement, but I ensured the context was set through discussion.

If the students wanted more information, especially when they finished the class discussion and were looking for further depth for the task, I gave them access to the file ... not all students needed / wanted the extra information.

In the future when students become more familiar with this resource and have more time to explore I may direct them to this.

Would certainly consider this in future use, especially if it was for historical investigation primarily, rather than English.

In addition, there were teachers who claimed that the statements were not relevant to students because of pedagogical reasons or because they were not relevant to the topic of the lesson:

The relevance of the pictures was not integral to the students using descriptive language to show what they were seeing.

Was not relevant as they were used to generate discussion.

Students at Year 6 level need to draw their own conclusions.

It is noted, however, that these teachers do not rule out the possibility of referring students to the statements in a different context. Thus across the sample, there is,

potentially, a large number of teachers (more than a half) who did or would in the future encourage their students to refer to the educational value statements.

Whether or not teachers referred students to the statements, there were a number of comments about the difficulty experienced by students in comprehending the statements:

The information was quite detailed and difficult for some Level 2 students. While teachers did refer the students to the information it was not expected that the students would read it independently.

They were too wordy and of little interest to the children ... Perhaps older students would get more out of them.

For those students who were capable I referred them to the statement as it lets them guide their own inquiry.

I had to tailor, adapt and add to what was supplied in order to make it relevant.

There was only a small number of teachers who explicitly stated that the educational value statements were written with a teacher audience in mind. Thus, given the large number of teachers in the sample who referred or would refer students to the statements and given a number of comments about the level of language used in the statements, they could be an obstacle to the widespread use of the DRs.

Nevertheless, there were a number of teachers who encouraged their students to use the statements, largely because the statements were integral to the content of the lesson, but, crucially, found no difficulty in doing so, and perceived little difficulty among their students in comprehending the statements. Typical comments were:

Most students enjoyed the new medium and found the statement useful.

Most found it interesting and some could relate to work done previously.

The students were able to use the educational value statement to add to their annotations after they had discussed with another group doing the same image. This provided clear explanations, was a useful reading activity and stimulated further discussion.

The children were encouraged to read the information to gain a better understanding of the events and the effect on the Australian people.

Students were very keen to see if their guesses were correct and led to more enquiries about people coming to Australia from England.

It is noted that teachers ratings of the usefulness of the educational value statements (Figure 10) were not influenced by whether or not they encouraged students to refer to the statements (Mann-Whitney U = 501.0, p = 0.345).

Ways Forward

Many teachers' comments indicated that they were not familiar with using these types of digital resources, or with integrating them into their teaching programs. Few teachers used the DRs with other resources, whether digital or not, and few teachers indicated

that they integrated the DRs into a learning sequence. For many teachers, their participation in the study allowed them to 'explore' the content, but they nevertheless were prepared to continue using them, or encourage colleagues to use them:

I hope to have a better 'go' of the resource next term.

I can see great potential for the further use of these resources in the future and will use them for professional development of other teachers within my school.

As staff see and use the resources, they are very quickly converted as they see them as high quality and pertinent to their curriculum content.

When asked what types of support would assist them to make best use of the DRs, there were two major areas of uncertainty. First, most teachers stated that they would like to see examples, illustrations, or guidelines for designing learning sequences that integrated digital content:

My experience with integrating digital content into the curriculum is that other staff members need to have practical examples of how they can authentically incorporate the resources and technology into their classroom practice.

Perhaps some guidelines for this [models of learning sequences] would be useful.

Second, teachers stated that they needed assistance with the teaching of visual literacy. Given that these two areas were given as examples in the question asking about support, it should not be surprising that most teachers nominated one or both. In addition, some teachers indicated that they needed support with negotiating the technology:

I would like to learn about using the resources as prepared on-line activities. I can create web tasks but need to be more skilled so that the preparation is less time consuming.

Mostly need greater technical / organisational skills to have resources classroom- and student-use ready.

I would like to learn more about using the resources as prepared on-line activities. I can create web tasks but I need to be more skilled so that the preparation is less time consuming.

Finally, in response to a question about themes for DRs that would be of interest to teachers, the following lists major topics:

- War
- Indigenous issues (Stolen Generation, health)
- Natural disasters
- Religion
- Advertising
- Maps
- Environmental issues

- Prominent Australians and New Zealanders (explorers, Prime Ministers, pioneers, immigrants)
- Australia in the Pacific

A few teachers nominated curriculum areas (maths and science) and file type (audio and video files).

Summary

A number of prefatory points need to be made by way of summarising these findings. First, this is an interim report, and the study conducted was on a small scale, and should be taken to be indicative rather than definitive. This is partly reflective of the fact that TLF was, at the time of writing, aware of the patchy nature of take-up and usage patterns for the DRs. This is understandable; while the Learning Objects component of the project has received most evaluative attention and most labour- and cost-intensive focus, the DRs aspect has received, in comparison, less attention and, in general, less publicity in schools and systems.

Second, the DRs relate to curriculum programs, schemes of work, and individual lesson activities in potentially quite different ways from those relating to the Learning Objects, the major focus of evaluative attention on the part of TLF. The resources that are the focus of this study call upon the teacher (or perhaps the student) to do almost all of the contextualising work whereby the DR might become meaningful within the conduct of the lesson or unit of work. The DRs are, in almost all cases, not stand-alone materials, but rather quasi-library materials, and in that regard are not amenable to the same kind of pedagogically evaluative attention.

The respondents to the survey described here were, by and large, an experienced group of teachers with more than average exposure to the educational uses of ICTs through professional development programs than most. With respect to the access question, in general, this sample of teachers found the DRs accessible and easy to use. However the following qualifications were raised by some respondents:

- The search engine needs refinement to allow more precise location of relevant materials;
- The range of materials in a number of areas potentially relevant to curricular use is limited;
- Some technical difficulties made access or extended use difficult.

With respect to the *use* of the DRs, the following summary generalisations seem warranted:

- As would be expected from the current composition of the repository, most school use is in the Humanities / History area;

- The DRs are generally used as 'primary sources' in History;
- Teachers and students often engage in comparisons of past and present conditions using the DRs;
- Use of the DRs is claimed to have strong motivational value in classrooms;
- Teachers often use the still-shots in the DR repository to engage in 'critical visual literacy' work with students;
- For the most part the DRs seem to be used in whole class teaching settings.

Major features of these teachers' *evaluations* of the DRs can be summarised in these ways:

- Teachers find the DRs to be useful and educationally valuable;
- The educational value statements accompanying the DRs are a crucial aspect of their usefulness and are in general positively evaluated.

RECOMMENDATIONS

Bearing in mind the small scale of the study reported here, the following recommendations are put forward for confirmation in subsequent evaluative activities:

- Write additional statements to support the use of the resources with a student audience in mind, in particular around the 'hot topics'.
- Make it clear that the original educational value statements are for teachers.
- Since teachers used the resources to replace 'teaching' rather than as a new and different tool to enhance learning, there needs to be some pedagogical support for the use of these resources, perhaps with a focus on multi-literacies in light of the work to which teachers in this sample put the DRs.

APPENDIX 1: SURVEY

[Exit this survey >>](#)**TLF Digital resources - school trials Term 2, 2006**

Remember, the questionnaire is designed to capture your experiences of using one or more digital resources within a single learning task, a unit of work or learning sequence. If you used digital resources for different topics, curriculum areas and/or year levels, please complete a separate questionnaire. Further details are available in the Teacher Guide.

What is your name?

What is your gender?

Male

Female

What is the name of your school?

State/territory of school

School sector

Government

Catholic

Independent

School setting

Remote

Rural

Urban

The school is

Co-educational

Single sex - female

Single sex - male

Does your school include proportions of students who are:

Language backgrounds other than English

Indigenous

Low socio-economic

How long have you been a teacher?

- 1st year of teaching
- 2 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- more than 20 years

Access to the digital resources

Please indicate how you accessed the digital resources when preparing for this trial

- From the TLF sample CD only
- From a searchable digital repository only (see Teacher Guide for explanation if not sure)
- From both the TLF sample CD and a digital repository.

If you accessed the digital resources from a searchable repository, please indicate the name of the repository.

Access to the digital resources - sample CD

	Yes	No
Was the CD loaded onto individual computers?	<input type="radio"/>	<input type="radio"/>
Was the CD loaded onto the school network?	<input type="radio"/>	<input type="radio"/>
Did you add the selected digital resource/s to a curriculum area folder or to a class page on an Intranet or Learning Management System?	<input type="radio"/>	<input type="radio"/>

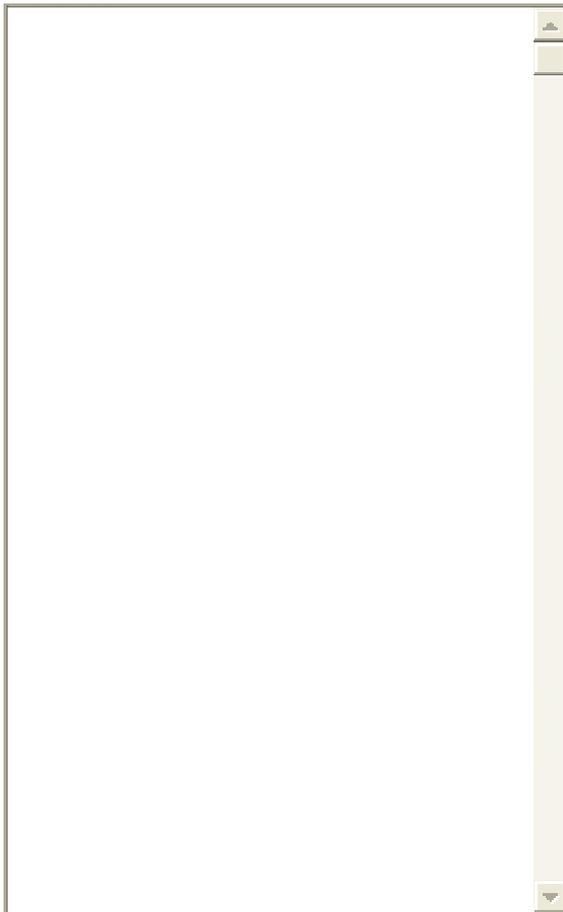
Access to the digital resources - repository

What terms/keywords did you use when searching for items in the digital repository (eg World War 1, Indigenous Australians)

Did you add the selected digital resource/s to a curriculum area folder on the school network or to a class page on an Intranet or Learning Management System?

Yes No

Please comment on any issues regarding access to the Digital resources you may have had.



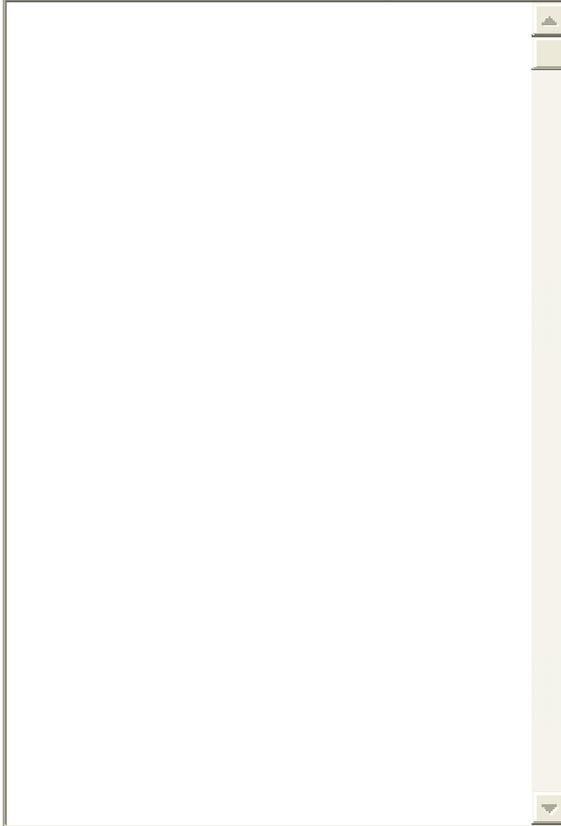
The teaching/learning tasks

What was the title of the learning activity/unit of work/learning sequence in which you integrated the digital resource/s?

For which curriculum area/s did you use the digital resource/s?

- English/Literacy
- Mathematics/Numeracy
- Science
- History
- Social Studies or SOSE
- Geography
- Commerce/Accounting
- The Arts
- Design and Technology
- Computer Education
- Physical Education/Sport
- Health
- Integrated unit or cross-disciplinary learning sequence
- Other (please specify)

Please explain how you made the different types of files - still images, audio files, and moving images - available for students to view eg inserted in a word document; added to a web page or powerpoint presentation

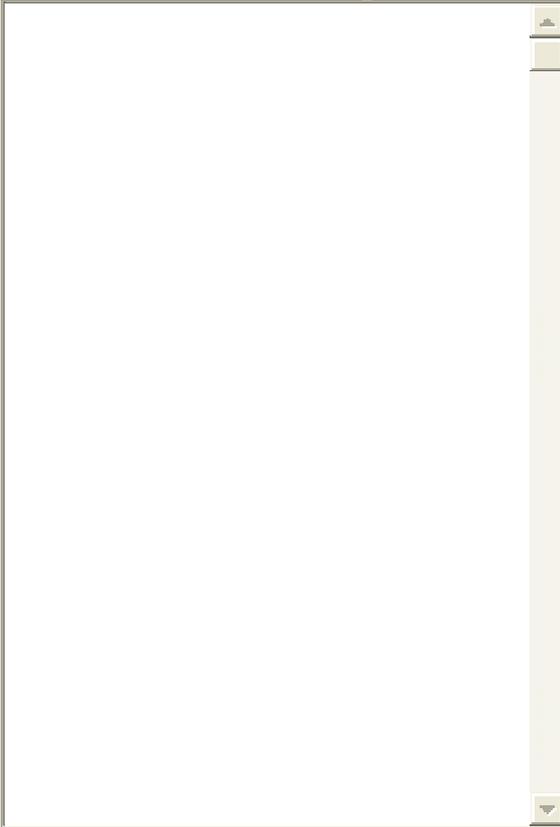


Indicate the way/s in which you integrated the digital resource/s into your teaching and learning activities. Tick all that apply

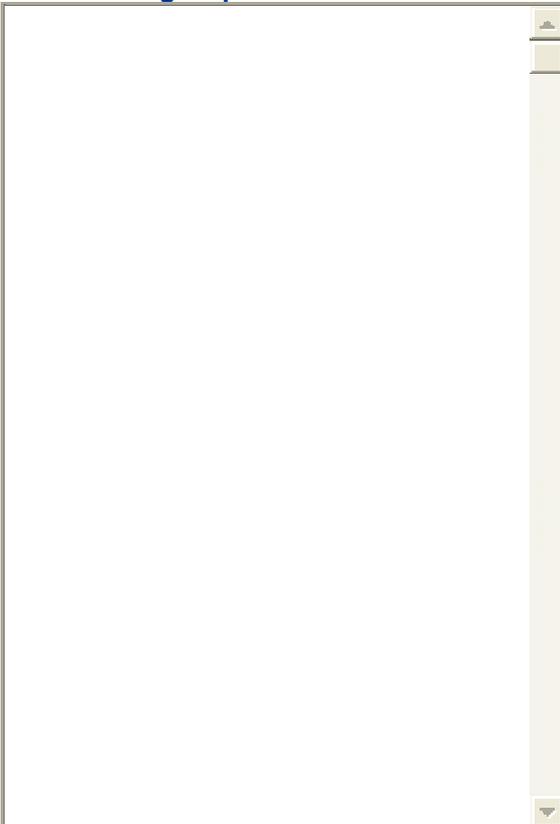
- For whole class viewing and teacher-led discussion using digital projection
- For individual student or group viewing together with associated off-line learning tasks e.g. inquiry or problem-solving tasks; questions on worksheets
- Used with other online resources e.g websites
- Used with TLF learning objects
- Student use of the item/s in new learning products e.g. embedded in a printed report or digital presentation
- Used for an assessment task
- Other (please specify)



If you used a TLF learning object/s in addition to the digital resource/s please indicate the title/s and ID number/s eg Norman Dean: The Great Depression (LO ID 371)

A large, empty rectangular text box with a thin black border. On the right side, there is a vertical scrollbar with a small upward-pointing arrow at the top and a downward-pointing arrow at the bottom.

Briefly describe the teaching/learning task/s associated with the topic/unit of work/learning sequence.

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Educational value statement

How useful was the Educational value statement in providing background information for you about the digital resource/s?

not useful

somewhat useful

very useful

extremely useful



Please comment on the usefulness of the Educational value statement.

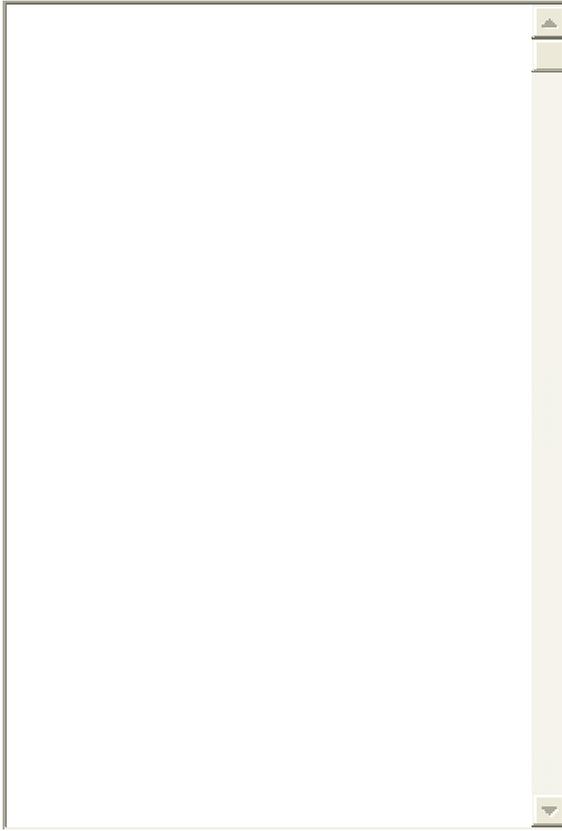
Did you encourage your students to refer to the Educational value statement?

Yes

No



Please comment on your response.



How useful was the digital resource/s in supporting your teaching of the unit/topic/activity?

not useful



somewhat useful



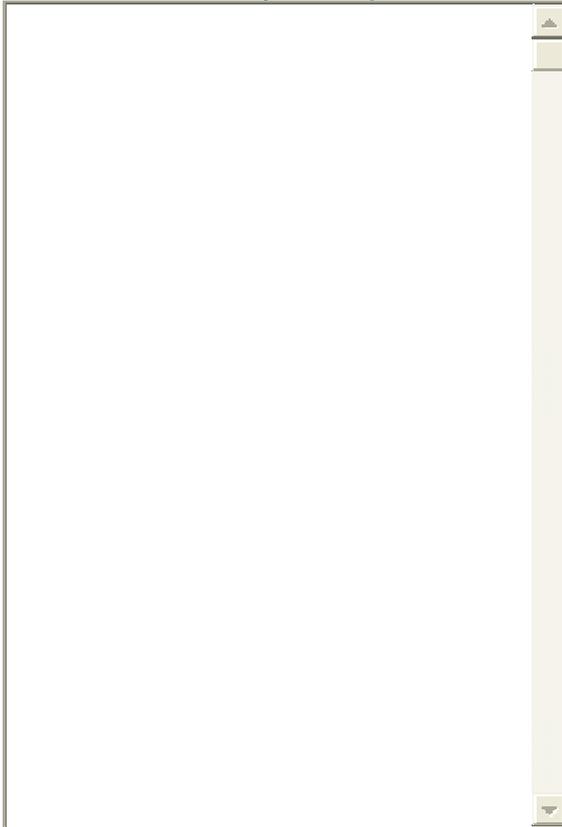
very useful



extremely useful



Please comment on your response



How useful was the digital resource/s in supporting student learning in the unit/topic/activity?

not very useful



somewhat useful



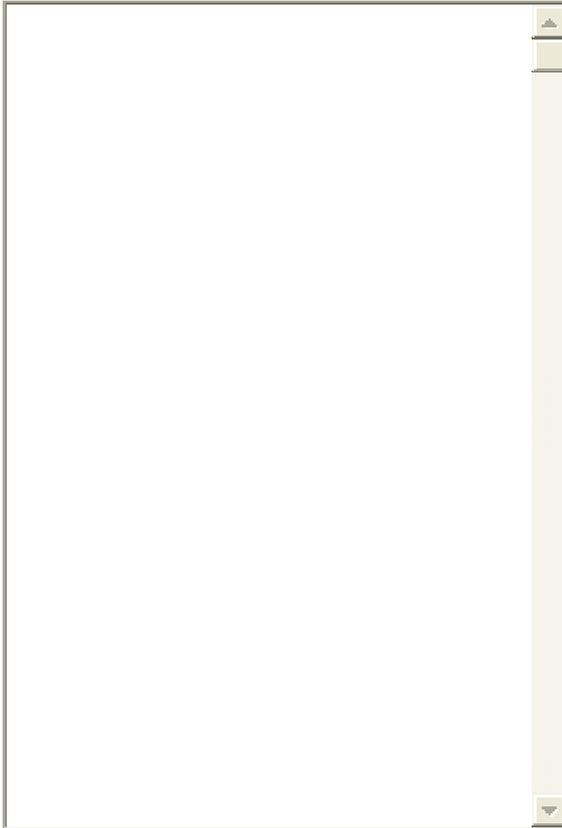
very useful



extremely useful

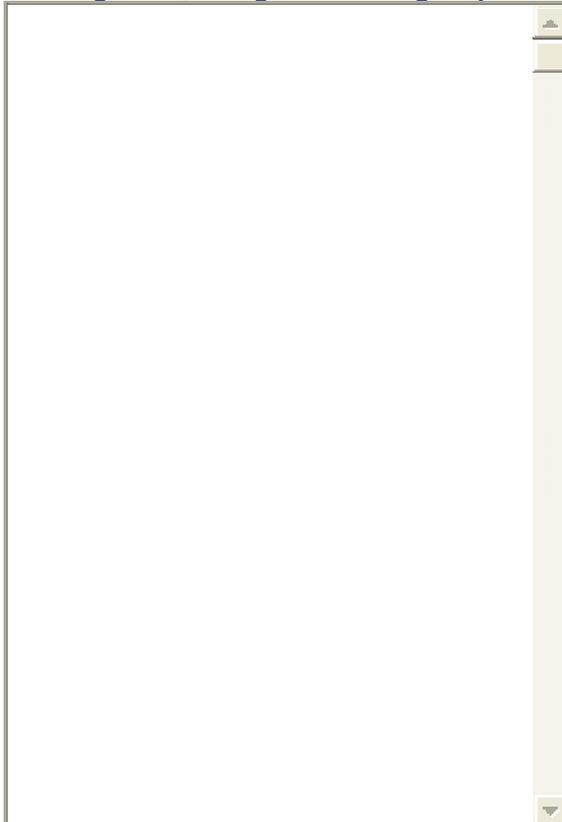


Please comment on your response

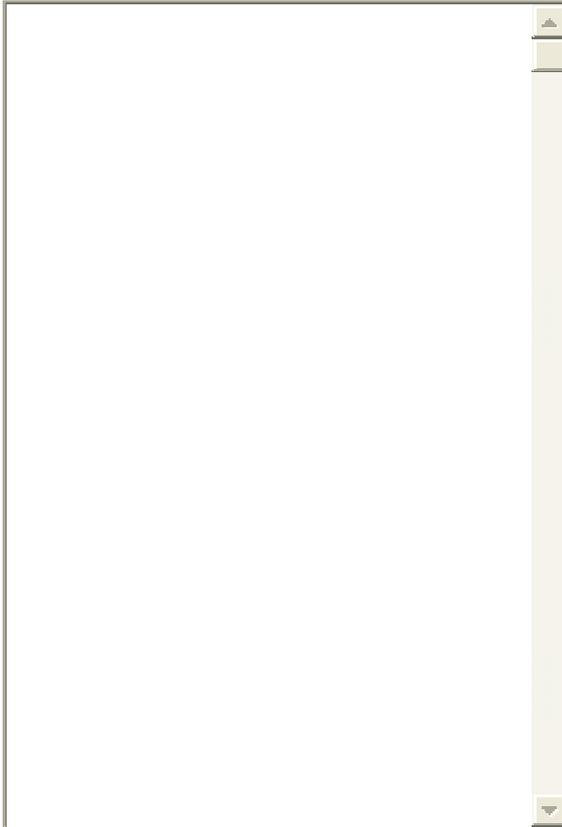
A large, empty rectangular text box with a thin black border. On the right side, there is a vertical scroll bar with a small upward-pointing arrow at the top and a downward-pointing arrow at the bottom.

Support

What types of support or skill development would assist you to make best pedagogical use of digital resources? For example: teaching visual literacy; structuring higher order thinking skills; design of learning sequences integrating digital content etc.

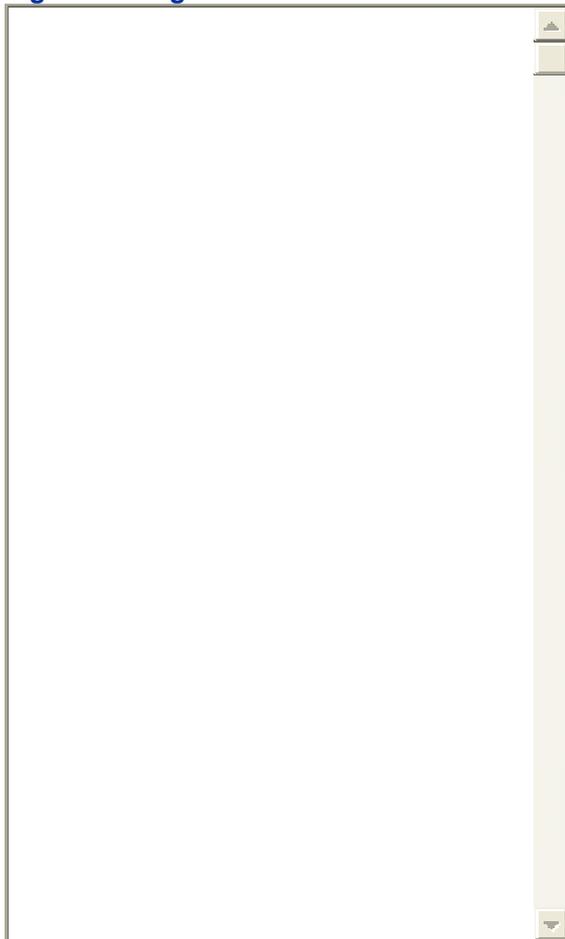
A large, empty rectangular text box with a thin black border. On the right side, there is a vertical scroll bar with a small upward-pointing arrow at the top and a downward-pointing arrow at the bottom.

Please add any other comments you have about accessing and using the TLF digital resources.

A large empty rectangular box with a vertical scrollbar on the right side, intended for user comments. The box is white with a thin black border. The scrollbar is located on the right edge, with a small square handle and a track.

Future digital resources

TLF is continuing to acquire digital resources from a range of partner institutions in Australia and New Zealand and is seeking ideas from teachers about the type of digital content that would be of most use. The list of items currently available can be browsed in the Digital resources catalogue. The December 2005 catalogue is included on the sample CD and the April 2006 catalogue can be viewed on the TLF website. Please indicate topics or themes that would be of most interest to you and your faculty. The teacher librarian in your school might also provide advice. (eg more video footage about the Commonwealth games; more audio of significant speeches in Australian history; digitised images of Australian and NZ inventions).



To allow us to communicate with you after the trial, please provide your email address.

APPENDIX 2: SITE VISIT REPORT

BRIDGEWATER-ON-LODDON PRIMARY SCHOOL

Context

Bridgewater-on-Loddon school is a three teacher school (including a teaching Principal), located west of Bendigo in Victoria. The school has 43 students in Years prep to six. The students are all from English speaking backgrounds with over 50 per cent from low socio-economic backgrounds. There are very few Indigenous students in the school.

The observed teacher, Jim Fredrick, has been teaching for more than 20 years and has been at this school for 13 years. He teaches a class of Years 4, 5 and 6 students in the morning adding the Year 3 students in the afternoon when the principal is released to undertake the school's administration work.

The classrooms contained enough computers to run a whole-class activity with students working in pairs. Access to the digital resources was through The Learning Federation's website, where approximately 30 sample resources are available through links to the different cultural institutions. Whenever Jim had worked with digital resources, he allowed students to navigate their way through these samples and choose which resource they wanted to work with.

Observed Activity

At the beginning of the lesson students were invited to present their work with digital resources from previous lessons. The first task was to construct a fact file on their chosen digital resources. The example we saw was based on 'the perfume bottle'. A Year 4 student copied the image into a word file and then, with the assistance of the description and the educational value statement associated with the image, wrote a short piece about the perfume bottle.

The second task was to write a 'Who/what am I?' quiz for other students. Jim said that he asked the students to write the clues in such a way that the more obscure facts were given first, gradually providing more and more detailed clues. The example demonstrated was by a Year 6 student and written in rhyme. The subject was Phar Lap and she successfully disguised that the subject was a horse until the second last clue.

After the demonstrations Jim commenced the lesson. The students were assembled on the floor. Jim explained that the students were to work in pairs. They were to choose a digital resource by logging on to the computer and going to TLF's website and locate the sample digital resources. Once they had chosen their resource they were to use the description and the educational value statements, along with the actual resource to write who/what/where/why questions and supply the answers. Jim stressed in his introduction that they should look for 'key words and key phrases' to construct their questions which must be accompanied by answers in their own words.

Once Jim was satisfied that all students understood the task, he asked them to move to the computers, which were lined up along the wall at the back of the room. It was cramped for the students but they seemed used to it and quickly got on to the task of finding their resources. Jim spent the remainder of the lesson working with the students, assisting them to complete the task, particularly with understanding the language of the educational value statements. Some of the students completed taking notes for the task and spent some time using a word template Jim had prepared for them.

The class ended without time for Jim to conduct the sharing time he had planned. He said that he would have asked the students to complete the task, writing it up in the word template and then swapping their questions with other pairs of students.

Discussion

Jim said that regularly includes online learning as a component of his literacy program. The school once subscribed to a commercial product but now that the subscription has lapsed he uses other resources including the digital resources published by TLF.

Jim has been directing students to the showcase page on TLF's website and using the sample digital resources available from there. He likes the idea of students choosing the resource they want to use and that the limited number available through the showcase is an advantage when students are sharing their work. He has used the digital resources from the showcase with the accompanying educational value statements and descriptions for cloze activities and for general comprehension activities. He said the digital resources *help develop their reading skills and their understanding of web pages and how to navigate through the net.*

Jim said that if he had access to the entire collection of digital resources he would probably offer students themed collections, such as famous people or sport, but with a sufficient range within each collection that allowed students to 'pick things to suit their personal style'.

When asked about the literacy level of the educational value statements, Jim agreed that they challenged many of the students which was why he asked students to work in pairs and encouraged them to consult with each other about the meaning of various words.

Concluding remarks

The major feature of this school was the emphasis on students choosing their own resources. Jim's lesson was based on the sample provided on TLF's website and hence only a limited number of disparate resources were available for the students. It could be useful to provide thematic packages of resources, similar to the 'collection' idea that could facilitate this type of activity.

The focus of the learning in the Bridgewater class was on comprehension using the textual material that surrounds the resource. The literacy levels of this material proves difficult for many students. If this type of exercise becomes common as it seems to be, then attention will need to be given to providing supporting text at literacy levels appropriate for students in primary schools.

CRAIGBURN PRIMARY SCHOOL

The context

Craigburn Primary School is a large outer-urban school set at the base of the Adelaide Hills at Flagstaff Hill. It is a relatively new school, architecturally designed and catering for students from the middle income bracket. The students are mainly Anglo-Celtic, with no students from a language background other than English and no Indigenous students.

Both staff members observed are experienced teachers and experienced with the use of information and communication technologies (ICT) in the classroom. Jillian Hook, the class teacher, explained that she had been the ICT coordinator in her previous school but has taken on other duties when she moved to Craigburn at the beginning of 2006. Teresa Langdon, the teacher librarian, said that she saw her role as librarian as expanding into finding suitable digital material, along with the more traditional print, video and audio, to support learning programs.

The principal, Jeff Wait, said that the integration of ICT into classroom practice was a major emphasis for the school and that every effort was being made to ensure staff had the necessary hardware, software and professional learning opportunities to ensure good use was being made of the digital world. The school had recently purchased two interactive whiteboards (IWB), one of which was located in the library and the second in the staff room. The strategy behind the staff room location was so that staff could learn to use the IWB by making use of it at staff meetings and for professional learning sessions. Staff could also bring classes to the staff room if they wished. The school is well serviced with computers mainly in labs, and at least one in every classroom.

The sample CD containing 100 selected TLF digital resources has been placed on the school intranet and all teachers in the school were encouraged to use them. Neither Jillian nor Theresa thought that many other staff members had availed themselves of this opportunity.

Observed activity

The observed class was conducted in a computer laboratory by the teacher, Jillian Hook, and the librarian, Teresa Langdon. The 28 Years 6 and 7 students were keen and motivated to engage with the lesson. They all seemed familiar with computers and quickly logged on to the intranet as requested.

Jillian asked the students to turn their screens off and watch while she located the learning object. She worked through the introduction, projecting her movements onto the screen. Theresa then took over and gave a very brief introduction to the content of the learning object. The students were then asked to work through the object, *Earth Rotation – Day and Night*. This learning object was relevant to the space theme that students were exploring this term. Once students had finished the first section, they could move through at their own pace. Students were supposed to write full sentence answers to the questions in their books so they had a record of their learning.

Once it was explained that this research was focused on the implementation of digital resources, Jillian and Theresa asked the students to demonstrate what they had done with some digital resources in the previous topic of Immigration.

We saw a re-enactment of a part of this unit. Theresa projected *Young Immigrants* (R2267). She asked the students questions such as: 'What era was this photo taken in? How do you know? What are the people doing? Who might these people have been? Why were they coming to Australia? Do you know anything about this time in Australia's history?' The students' responses indicated that they had noticed that the people in the picture were all men, that they were on a boat not a plane, indicating the

era. The students also remarked that the subjects had little luggage and wore suits and ties. When asked what the clothing indicated about the men, some students said they must be business people and this led further to a discussion about clothing of the time and stereotyping.

The students found the images engaging and said that they enjoyed learning about the past. They added that the pictures gave them better understanding of the time than they would have had by simply reading about it.

Discussion

The discussion with Jillian and Theresa started with their planning of the unit on immigration in which they used the digital resources. They explained that they started by projecting one of the resources, a poster entitled *There's a man's job in Australia* (3172) on to the interactive whiteboard and holding a class discussion about the poster. Theresa said they did this because 'we thought it really showed up what they know or didn't know with our questioning, especially their understanding of Australian history...we needed to know what they did and didn't know before I planned any further' Theresa and Jillian went on further to discuss how this constructivist style of planning ensured the students were engaged. 'The kids were really interested because the questions built on their answers.'

The digital resources used in the Immigration unit – *Young Immigrants* (2267); *Southern Cross Immigration* poster (2648); *Future citizens* (1320); and *There's a man's job in Australia* (3172) – were photos, posters and short films based on migrants coming to Australia.

During the unit students had discussed the resources as a whole group, talking about their assumptions of what was happening and who the subjects were, before exploring the educational value statement and descriptions to see if they were right. Students also completed a Who/What/Where/When/Why activity on three resources of their choice. The concluding activity was for students to create a poster to encourage immigrants today to come to Australia.

Jillian and Theresa were both positive about the digital resources and their usefulness. Jillian claimed that she thought they were 'invaluable', with Theresa adding: '*Where else do you get little movies to actually see these things?*'

When asked about the educational value statements, both teachers said they thought that they could be helpful but preferred not to use them in the initial discussion. Theresa said *I didn't use it with the students, it was more for my benefit because you don't know all the information yourself.* However, Jillian said she did use the statement

with some of the students after the initial discussion. She commented that the literacy level was too difficult for some of her students and this proved to be problematic.

Concluding remarks

This lesson highlighted how a small, well chosen, selection of resources could bring to life a period of Australian history. The students were fascinated by the difference between Australia then and today. The lesson incorporated aspects of critical literacy by promoting discussion of stereotyping and analysis of visual texts for the message they were promoting.

MT MAUNGANUI COLLEGE

Context

Mt Maunganui College is located in a small tourist town on the Bay of Plenty, on the East coast of New Zealand's North Island. The school is classified as decile 4 on the New Zealand Ministry of Education's scale for socio-economic status, and hence has significant additional funding. The school has an enrolment of approximately 1000 students, with a high percentage of Indigenous students, but not many classified ESL students.

The College is well equipped with computers, with several labs. Most labs have older-style Macintosh computers. There is one pod of new PCs used for subjects such as media. One of the labs has an interactive whiteboard (IWB) however this was too small to be used for the observed lesson, a class with 31 students.

Sharon Harper was originally employed at the College as a drama teacher, but now teaches English and media studies. Sharon works part-time at the College and also works as a consultant for the Ministry in media studies. She has published assessment guides for Senior English courses in the New Zealand Certificate of Educational Achievement (NCEA). Sharon feels confident using technology in the classroom, and encourages students to use blogs, wikis and the internet more generally. She also often uses these tools for assessment purposes. Everything Sharon does with the class she puts onto the class Moodle site, a learning management system to provide easy access for absent students and curious parents.

Observed Activity

Of the 31 students enrolled in the observed Year 10 class, only 25 were present on the day. It is a disparate class in terms of ability level, but not a highly motivated class. Being so close to the end of the Year, all Year 10 English work was finished so students are beginning Year 11 work, with the aim of finishing the first unit of work before the end of year.

In this Year 11 unit of work, 'English Visual Language', the aim was for students to explore language and think critically about static images. In the sequence of lessons, of which the observed lesson was the first, students were to explore an example of a film poster from the 1920s, chosen by the teacher and compare it with a poster from today, chosen by the student.

Prior to the lesson, Sharon had placed all relevant resources on the class Moodle site. These were:

1. A link to a Harry Potter puzzle site where students had to choose from a jigsaw (with differing levels of difficulty) or a quiz. This was used as a warm up.
2. The *Dinkum Bloke* film poster digital resource, with the accompanying notes.
3. A Word document of comprehension questions that students had to answer using the digital resource.

Sharon wrote directions on the whiteboard asking students to log in to the class site, complete the warm up activity, and then undertake the *Dinkum Bloke* activity.

There were technical problems with the network and a significant number of students could not download the resource or the comprehension questions. Sharon attempted to resolve the technical issues, but only managed this in a small number of cases. Of the students who could access the work, only one managed to complete the task by the end of the lesson. Many of the students found the language used in both the educational value statement that accompanied the resource, and the comprehension questions assigned by Sharon too difficult.

The warm up activity, which was designed to engage students with computer use before the English task, had no apparent relevance to the actual task or the unit of work. It became a distraction, particularly for the students who could not access the English task.

Discussion

Sharon had previously used the digital resources in a unit on advertising. The resources used included *Happy Little Vegemites*, *The Jansen Swimwear Poster*, and the *Health Stamps Poster*. Students discovered for themselves the *Billy Carts in*

Rockhampton resource which Sharon then used as a context for the era of the other resources. She said 'One of the things we struggle with is audio resources, so the good thing for me was finding audio resources.' The jingles and other resources were used so the students could make comparisons with modern-day examples. She commented that present day examples were easy to find, but the digital resources collection was invaluable for access to past examples.

Sharon said she had no trouble finding useful resources that were relevant to her lessons. However, she suggested that it would be useful for media studies if there were a larger bank of film clips.

Concluding remarks

The combination of technical difficulties and behavioural problems in the observed lesson makes it difficult to draw any conclusions from the observed activity. However, the lack of any direct teaching or orientation to the task contributed to the lack of engagement by the students. The idea of using the digital resources as historical artefacts, then asking students to locate their own resource from the present day is of merit. The literacy requirements demanded by the educational value statement was a significant factor in the lack of progress of the students.

MOUNT WAVERLEY NORTH PRIMARY SCHOOL

Context

Mount Waverley North is a medium-sized primary school in the Eastern suburbs of Melbourne. The school is described as a middle socio-economic status with approximately 30 per cent of the students from language backgrounds other than English.

The school prides itself on its work on the integration of Information and Communication Technologies (ICT) within the curriculum. The school runs a whole-school network and intranet for all classrooms, with 4 to 5 Pentiums in each room linked to the library, each with Internet and email capacity.

The principal, Robyn James, is keen that all teachers in the school make use of ICT and is prepared to support teachers to attend professional learning sessions and to

work together to design and conduct lessons that capitalise on the use of the digital medium.

Maureen Campbell, the teacher participating in the trial, is an experienced teacher with more than 15 years standing. She teaches one of the three Year 5 classes in the school, with 26 students present the day of the case study visit.

Maureen described herself as a teacher interested in trying new things. She has used TLF's learning objects extensively in many areas of the curriculum. She particularly likes *Wishball* and *To catch a thief*, using these and other learning objects in literacy and numeracy rotations. The *Gold rush* and *Ned Kelly* learning objects have also been used in her SOSE classes. She said 'I just think anything that's digital that we can use the computers for engages the students. They just love it, and it enhances the program.'

Observed activity

The lesson commenced by asking the students if they know of any natural disasters that had happened in Australia. The first response was Cyclone Tracey, at which point Maureen showed them the resource she had chosen for the focus of the lesson. Maureen had intended to have a longer discussion about the types of natural disasters experienced in Australia but decided to drop this part of the lesson and move straight to the activity. She did pick up on the idea of discussing natural disasters more broadly at the end of the lesson.

The digital resource used as the focus of the lesson was titled *Prime Minister Whitlam in cyclone-ravaged Darwin, 1974* (R3044). It depicted Gough Whitlam's motorcade as he drove through the ruins of Darwin some time after the cyclone had devastated the city. She asked what the students knew about Cyclone Tracey, if many were killed and when it happened. Some of the students knew that it occurred on Christmas Eve but not much more.

She then explained the group activity. There were to be four groups according to a list on the board. The criteria for structuring the groups is unknown but they were groups that the students were used to. Maureen explained that each group would do a different task and that there would be one rotation this lesson.

Two of the tasks, she had already explained, would be based around 'thinkers' keys' strategy 'to unlocking the analytical, critical and creative thinking abilities of learners'³. One 'key' used was the 'question key' where students were asked to devise a number of questions that could be answered from the resource. The students were required to

³ <http://www.schools.nt.edu.au/larapsch/thinkerskeys.htm> accessed 27 November 2006

provide the answers as well as devise the questions. The second 'key' was the 'alphabet key'. In this task students had to write words starting with each letter of the alphabet that related to the resource. Both of these tasks were completed using printouts of the resource.

The other two tasks were not based on thinkers' keys. One was to assemble jigsaws that Maureen had made by cutting up print-outs of the image. These were graded in difficulty and Maureen assigned the envelopes containing the puzzle to specific students. After completing the puzzle, the students were to paste the puzzle into their book and write a paragraph expressing the emotions evoked. The last task was a comprehension task using the educational value statement and the description of the resource on the computer. Students made notes first and then had to write full sentence answers in their English books.

The comprehension activity involved pairs of students working at a computer. They had to locate the resource and use the image and the text to complete a worksheet (with questions such as: How many people were killed by Cyclone Tracey? When did Cyclone Tracey occur?) The actual date was not given, just Christmas Eve, so the students had to deduce the answer. Thus the worksheet used some high level questioning as well as straight transcription. The literacy level of the educational value statement was challenging for some students but the students managed to work out the meaning by collaborating and, in a few instances, asking for help. Both groups who worked on this activity enjoyed it and when questioned said they liked the idea of using 'real' images from the computer rather than just using worksheets. All said they enjoyed computers, particularly being able to find out about things that happened in the past in Australia.

The jigsaw activity, on the surface, appeared to be a time filler. However, it forced the students to examine the image and as such they were more engaged with the detail. This facilitated the writing of the paragraph that was to describe how they would have felt if they were in Darwin at the time. Many students were familiar with jigsaws and took very little time whereas some, one student in particular, had great difficulty with assembling the jigsaw and did not get the paragraph written. This is an example of a simple activity that was appropriate for a range of abilities.

The key task was to identify a number of questions along with their answers that could be written about the resource. Most students drew on the description and the educational value statements to complete the task. Again the language was a problem for many students but they worked out the meanings together. The questions devised by the students were largely factual such as 'how many people died?' and 'how fast

was the wind?'. Again the students were familiar with the activity and seemed to enjoy it.

The last activity, the 'alphabet key' seemed to be the most fun. They competed with each other trying to find the most obscure word for each letter of the alphabet. They really only collaborated on the difficult letters, like 'x' and 'q' but it did provoke discussion about the actual image and the relevance of different words. One girl used her dictionary.

Near the end of the lesson, Maureen drew the class together and used their tasks to discover what they had learned about Cyclone Tracey. The discussion was lively and demonstrated that the students had not only absorbed the facts but could also relate to the situation the people were in at the time. To conclude the lesson, Maureen showed the digital resources showing cyclone-proof houses and discussed what might have happened if this type of housing existed in 1973.

Discussion

Maureen explained that she was a regular user of TLF content and, as mentioned above, was a strong supporter of the learning objects. The digital resources were new to her but as the quality of the learning objects was high, she decided to give this content format a go too.

Her topic for term 3 was Australian History so she decided to investigate if the digital resources could be used in that unit. She was delighted to find a wealth of resources suitable for the topic and for use with her particular class of Year 5 students.

The unit History of Australia fitted perfectly with the use of the digital resources. The ones we used enhanced our unit and provided the students with first hand information and images of early Australia. As part of our unit each student has to write a bibliography and dress up as one of the famous Australians. The images from the digital resources gave them an insight which aided them to successfully complete this project. Part of our unit also included music from the era. The audio resource plus the words to the songs enhanced our unit.

She had started the unit by discussing shearing and shearing sheds. She realised that many of her students had little concept of this topic so she used some of the digital resources to give the students a picture of what the working conditions were like for shearers.

She had loaded the resources onto the school intranet which gave students the opportunity to find resources of interest to them.

One little boy who's a computer wiz, he found it [the audio file of Menzies Declaration of War] and said 'oh listen to this' and the whole class just stopped and listened to it. It was fantastic. And then also they had the vegemite song so we listened to that, and also aeroplane jelly, and then later on I saw even the words to Tipperary. All that is wonderful... it all just tied in beautifully with what we were doing.

The assessment for the Australian history unit was a PowerPoint presentation where students had to present their learning from the unit, using research and images including from the digital resources collection. Maureen's philosophy is to incorporate the use of ICTs with off-line learning tasks including problem solving and inquiry-based learning.

The final activity was the *Night of the Notables* where the students came dressed as an Australian legend. Resources on Kingsford-Smith, Dame Nellie Melba and Burke and Wills were used as stimulus.

Maureen found the educational value statements extremely useful both for herself in planning the activities and for the students.

I think it's just valuable information. I mean if you don't know anything about what you're looking at then it helps you... it depends on what you want them to do. Some of the students could use them unaided, others had to ask for help, either from another student or from me.

Concluding remarks

This lesson was well planned and executed. Maureen used a judicious mix of online and off-line activities that engaged her students and extended their understanding. She had a clear purpose for the lesson, which was for students to understand the impact of Cyclone Tracey on the people of Darwin. Her incorporation of the thinkers' keys and collaborative group work enhanced the lesson. This was obviously common practice for the students who responded well to the activities and remained on task throughout the lesson

It was the final discussion in the lesson where she brought the students back to the idea of the impact of natural disasters, the main purpose of the lesson. Too often teachers let SOSE lessons become literacy lessons and forget to move beyond the basic comprehension tasks. The observation and discussion demonstrated that with fairly simple pedagogical approaches teachers can provide a depth of learning for their students.

ROSTREVOR COLLEGE

The context

Rostrevor College is a boys' Catholic school in Woodforde, an inner North-West suburb of Adelaide, South Australia. The college has approximately 1000 boys from Reception to Year 12. The college provides boarding facilities for 78 students. There are 26 international students in the school. The teacher indicated in the survey that the College included up to 10 per cent of students with language backgrounds other than English, a small number of Indigenous students, and no students from a low socio-economic backgrounds.

The sample CD of TLF's digital resources was loaded onto the school intranet by the College's computer technician. All teachers therefore have access to these resources. The senior school has five computer labs. Andrew Hartigan, the observed teacher, browsed the sample collection to find suitable resources for his classes.

Andrew is in his first year of teaching. He has an English as a second language (ESL) qualification and also teaches English and Community Studies (a humanities-based subject designed to engage students-at-risk). In discussion, Andrew described his approach to ESL and English teaching as genre-based. The observation took place in Andrew's Year 11 ESL class. There were nine students present, a mixture of international students and recent migrants, all of whom fall under the Department of Education and Children's Services (DECS) definition of an ESL student.

The observed lesson

The observed lesson was part of examination revision. The students were practising for the internal South Australian Certificate of Education (SACE) ESL exam in which one of the tasks will be to prepare a formal letter conveying detail of an image from a particular perspective.

Andrew commenced the lesson with a whole class discussion of how to develop a narrative, incorporating the stages of orientation, complication and resolution. This was followed by a demonstration of one digital resource *Future citizens, 1947* (1320) on the interactive whiteboard (IWB). The group was asked to personalise the image from the perspective of the baggage handler in the image or one of the refugees.

Following this discussion, Andrew projected four digital resources onto the IWB: *Women protect Queensland beaches, 1971* (2593), *Vietnamese refugees at sea* (3242), *Soapbox race, Albany* (2785) and *A soccer 'friendly' in 1974* (2917).

The educational value statements were not used with the students, and the descriptions were also hidden at this time. The students had to choose one image and develop a narrative, first written then presented orally, to tell a story about the image, placing themselves in the scene. For example, one of the students used the soccer image. His narrative described a scene where he was the hero in an England versus Italy game with the whole crowd cheering his name. After students had all shared their work Andrew showed the description accompanying each digital resource. They discussed what the description said and whether the students' narratives were consistent with these descriptions.

The task was not one of 'getting it right', rather whether the stories could be evoked from the image. For example one student's narrative described the soccer image as an Australian rules football match involving an Aboriginal player. Andrew's response to this was not to declare it 'wrong' but to discuss with the class the appropriateness of the interpretation. However, the emphasis of the discussion was on the richness of the narrative rather than the accuracy of the interpretation.

The discussion

The observed lesson was the second time Andrew had used digital resources with his ESL lessons. In the discussion, he described a series of lessons earlier in the year where he had used digital resources in conjunction with a poetry unit. For this activity, Andrew was trying to teach the students how to 'show and not to tell' so he chose a variety of digital resources and posted the images around the room. Students had to choose an image and write a one-line poem. When asked to comment on the usefulness of the digital resources in this context, Andrew stated: 'The pictures were very good as some of them provided great visual stimulation from which the students could try to use language to explore.'

Andrew said that having a bank of images, detailed enough to stimulate the exploration of descriptive language was imperative, rather than the specific content of the image. 'The images were adding to the topic. It wasn't vital the types of images that I had as long as they were adding to what I was doing.' Therefore in the poetry unit he used a range of disparate images, all with great detail; whereas in the observed lesson, he chose action images because he thought these would stimulate narrative expression.

In the discussion, Andrew also referred to set-up and technical problems. Although he acknowledged that there are many digital resources that would be useful in his other classes, particularly the audio resources on advertising, he stated 'it's just the set up,

you'd need a projector and speakers ... so next year, with the IWB going, it would be great to use in class'.

Concluding remarks

Andrew used the digital resources as stimulus for a genre-based lesson. His approach was typical of ESL classrooms focussing on the structure of language and textual form. We learned that well chosen digital resources can be used to engage students with a fairly pedestrian task, focused on exam revision. Andrew was the only teacher observed that did not use the resources for their content. It was a successful lesson for its intended purpose, although it was disappointing that the opportunity to explore Australian culture, as a side issue was not taken.

TAYLORS LAKES PRIMARY SCHOOL

Context

Taylors Lakes Primary School is located in the outer Western suburbs of Melbourne in a housing estate established in the 1980s. The school has approximately 600 students declining from an enrolment of over 1000 five years ago. Most students come from families with non-English speaking backgrounds, however none of the students in the observed class are classified as ESL.

The school was trialling an 8GB wireless network and had recently installed six interactive whiteboards (IWBs) in classrooms across the school, including the classroom in which the observation took place. There were also mobile labs, each with six laptops available for use in classrooms to complement the six desktops. When needed, teachers could also use computers in the adjoining classrooms.

The school became involved in the project through the ICT coordinator, Libby Conn. Libby loaded the sample CD onto the school intranet to provide access to both teachers and students. Libby has acted as support person for Mark Colagrande, the teacher observed in this case study.

Mark has been teaching for over twenty years, mainly as a classroom teacher, however he did spend some time seconded to the Department working on a LOTE study involving ICT. Mark considers himself competent with technology, being able to find solutions to most technical problems that may occur in the classroom. Mark

selected a range of resources suitable for the unit he was undertaking with his Year 6 class and constructed a class page on the intranet for use by the students.

The observed lesson took place earlier in the unit than Mark would have liked, but he had moved it forward for our visit. After he has finished with the unit, Mark plans to pass it on to the other Year 6 teachers.

Observed activity

The observed lesson was the first in a unit called 'Life's journey' or 'The X factor', which focuses on what qualities some famous people have that make them great. Students will examine these qualities, and see which of these qualities apply to themselves and their families.

Mark used the IWB to display images of four famous Australians (Dame Nellie Melba, Sir Charles Kingsford-Smith, Sir Donald Bradman and Prof Fred Hollows). Only the images were displayed. The students were asked to examine the images to answer the following questions: I am a great Australian but who am I? What have I done or achieved in my life to be a great Australian? Mark suggested they use the detail of the images such as the clothing, props, and other elements of the images to make educated guesses if they did not know.

The students discussed the images with their friends. Mark then led a whole-class discussion, including asking the students which ones they worked out and how. At the end of this discussion, the descriptions of the four digital resources were displayed on the board so students could check their answers. A significant number of students, mainly boys, guessed Bradman correctly. Some others, who had done a research project on Kingsford-Smith the year before named him correctly. No students identified Dame Nellie Melba, or named Fred Hollows, however some students knew Hollows' work due to some television advertisements that had aired recently.

Students were asked to form pairs and choose one of the four famous Australians. Their task was to search through the digital resources on the class page to find information, pictures, and video that they could then incorporate into a presentation about their chosen Australian's achievements and special qualities.

Students organised themselves into pairs and quickly set themselves up on the computers. The students spent more time deciding who their focus was to be. Mark moved around the room and assisted students who had queries, and focused students who were not on task. The students worked on this activity for the remainder of the lesson (approximately 30 minutes).

At the end of the lesson, Mark asked a small number of students to share work they had completed using the digital resources in a previous unit. Sharing of work is Mark's usual practice and, although this was mainly for our benefit, the students chosen to present had not already done so.

Discussion

The digital resources sample CD was loaded on to the school server in term two. By this time, Mark's class was approaching the end of a unit on Government. Although the timing was not good in terms of introducing new activities, Mark found images, such as the opening of parliament house, and conducted whole-class revision discussions based on what the students saw in the image and what they remembered from the unit.

Term three was focused on Natural disasters, focusing on a different disaster each week. In the week focused on floods and droughts, Mark searched through the resources to see what was available (using the search key words 'droughts' and 'floods'). The students' task was to construct a timeline on either droughts or floods. They had to find at least four images from the digital resources and, using the description and educational value statement, record when, where and what was happening. The students could choose how to present their timeline, and all students chose an electronic form, most choosing to use PowerPoint. Mark used this opportunity to teach himself, and later the students, how to import video files into PowerPoint. The examples observed demonstrated students competence with locating appropriate images and using PowerPoint, but many presentations were not in chronological order and the descriptions ranged in sophistication.

Concluding remarks

The students in Mark's class were obviously accustomed to working with this technology. They organised themselves quickly and were generally engaged with the task. There were varying numbers of resources devoted to each of the four Australians chosen by Mark, so that students who chose Fred Hollows, with only one resource available, quickly abandoned their search of TLF's digital resources, deciding to search the internet instead for extra information. Far from seeing this as a disadvantage, the fact that there was at least one resource provided a starting point for the students and gave their internet search direction.

Mark's use of the digital resources shows their ability to be used for more than straight-forward comprehension. Once the students had completed their research activity Mark plans to use this work to unpack the students' interpretation of qualities common to famous people.