

**The Le@rning Federation - Sustaining  
Supply of Content for the *Digital  
Education Revolution***

**March 2008**

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## **Executive Summary**

The *Digital Education Revolution* has already begun, with teachers across Australia using digital curriculum content developed through the Ministers' Le@rning Federation Initiative. This content is engaging and motivating students both inside and outside the classroom, re-engaging those at risk of dropping out, accelerating learning and supporting its personalisation.

There is a growing confidence, articulated clearly by many teachers using Le@rning Federation content that it is revolutionising teaching and learning. Students in early years are better understanding concepts previously thought to be too difficult for their age group, Learning is being accelerated, students are motivated and engaged, and teachers can personalise learning in a classroom of thirty students. As a critical mass of digital content is developed, greater flexibility of schooling provision is enabled, whereby students can access their instruction anywhere, any time. Such impacts are what Ministers have hoped for.

In essence, The Le@rning Federation is charged with procuring, or if necessary developing educationally effective digital resources, specifically for Australian and New Zealand curriculum and making these available free to all teachers, students and parents within those countries with no further copyright remuneration payable. The resources are to be discoverable by curriculum relevance, reusable, sharable, adaptable, and taken together, enable the schooling change that is the *Digital Education Revolution*. The Initiative has delivered a valuable national asset that will directly support the national curriculum and assessment agenda for decades to come. Never before have parents, teachers, teacher educators and student teachers in Australia and New Zealand had access to such a vast library of high quality, copyright-cleared, digital content directly related to the curriculum and the needs of all students.

The Le@rning Federation is more than digital content development or procurement. It includes necessary brokered national agreements on technical standards and copyright sharing, as well as the resolution of accessibility, bandwidth management and data transfer issues. Its infrastructure supports ongoing digital content development and procurement, quality assurance, distribution to jurisdictions' portals and, through *Scottle*, direct web access.

The Le@rning Federation digital content is totally exempt from Copyright Agency Limited (CAL) licence payments by jurisdictions, as it is either owned outright or has copyright cleared third-party-owned content. This is a significant strategic goal and outcome of the Initiative. It is calculated, based on current TAFE experience, that the whole investment, on an annual basis, could be eventually recovered through savings in escalating copyright remuneration fees.

The Initiative is funded to June 2009, by which time over 8600 digital interactive learning sequences and single audio, photo and video resources, in six priority curriculum areas for Years P-10, will be available. This library is already providing a kick start for the *Digital Education Revolution*. However, there will be ongoing requirements for digital content to fit specific program needs, to maintain content currency and respond to new and emerging technologies.

Some students currently have greater access than others to the benefits of digital content, however as adequate, affordable, broadband access reaches more schools,

grants for hardware kick in, and teacher training incentives roll out, building on the achievements of The Le@rning Federation will speed the *Digital Education Revolution* for all students.

The Le@rning Federation is set to complete its current phase by July 2009. Ministers have asked for a sustainable Le@rning Federation.

As long as governments remain the major funders (and in many cases, providers) of schooling, they will remain the major commissioners and funders of content to support agreed schooling outcomes.

There are two key considerations for sustainability: the extent to which digital curriculum resources remain an 'add-on' rather than an integral part of all curriculum resourcing; and the extent to which Ministers wish to continue the current level of cooperative federalism in which they pool funds for their own curriculum company to manage content supply in the national interest.

A continuing supply of curriculum-purposed, high quality, copyright-cleared digital content for all schools can be achieved through The Le@rning Federation. It requires commitment of all governments and schooling providers to:

- explicit allocation for digital content within any budget line with a resource component
- an explicitly stated and monitored expectation that digital resources will be a significant part of every student's learning.

## **The Options**

Two options are outlined for July 2009 -30 June 2012. Option 1 outlines two alternatives that return responsibility to jurisdictions in varying amounts. Option 2 continues the current arrangements.

***Option 1 - Pooled funding for a core national structure with a quota of high quality, digital multi-media curriculum content to be contributed by each jurisdiction.***

**Option 1.1** requires jurisdictions to contribute a total of \$4.94 million per annum to cover the national structure, managed by The Le@rning Federation. They also contribute a quota of digital multi-media curriculum content copyright-cleared for the whole of Australia and New Zealand, or cash-in-lieu. The national structure supported by this option is minimal, covering standards, quality assurance, maintenance but not development of repository and tools, and no support for Contact Liaison Officers, travel or teacher networks. This option is valued at \$13 600 000 per annum and produces 4000 items of content over three years.

**In Option 1.2** jurisdictions contribute a total of \$7.79 million per annum to cover the national structure, managed by The Le@rning Federation. They also contribute the same quota as they do in Option 1.1 of digital multi-media curriculum content copyright-cleared for the whole of Australia and New Zealand, or cash-in-lieu. The national structure supported under this option includes, over and above that provided by Option

1.1, further development of *Scootle*, Contact Liaison Officer salaries, some jurisdiction travel and teacher networks. This option is valued at \$16 465 000 per annum and produces 4000 items of digital content over three years.

Options 1.1 and 1.2 dismantle varying amounts of the existing national structure. They rely on jurisdictions for much digital multi-media content. The success of Option 1 depends on all jurisdictions committing to reallocating some internal funds to digital multi-media content development and sharing the resulting digital content nationally.

### ***Option 2 - Shared National Digital Curriculum Content Supply***

**Option 2** continues the current arrangement of digital content development and procurement as a national collaboration for a further triennium, using the current model of collaborative development, procurement and distribution. It delivers everything delivered by Option 1.2 plus an additional 1000 items of content. This option costs \$16 465 000 per annum and delivers 5000 items of digital content over 3 years.

Option 2 continues full national collaboration through pooled funds and procurement, copyright-licensing and curriculum-fit managed on Ministers' behalf by the curriculum company they own. It maintains and develops the existing asset. It requires, however, continuity of commitment to the national in the face of local pressures, cultural, financial and political, to retain funds within states and territories.

Commitment by Ministers, whether to pool funds for specific digital content procurement/development or to reach internal targets for digital content which they then share, is necessary to achieve sustained revolutionary change, just as the original commitment to the vision of The Learning Federation necessitated unprecedented levels of specific national investment and collaboration.

Unless digital curriculum content becomes a mainstream component of curriculum content provision we do not have provision for digital education. Either we shift current local print resource budgets to digital content with formal sharing commitment (Option 1), or we continue a budget for national digital content procurement. (Option 2)

The Ministers' investment in The Learning Federation is now poised to bear fruit in light of the Australian Government's, *A Digital Education Revolution* policy. The digital content 'roadway' and first fleet of vehicles has been built. The key to sustainability of this national asset is the guarantee of an ongoing supply of content to travel on it - digital content that responds to the emerging needs of teachers and students in the implementation of new national curriculum requirements, learning challenges, and technological possibilities over the next decade and beyond.

The cost of any one of Option 1.1, Option 1.2 or Option 2 is a modest per annum investment but the benefits to generations of Australian students are of immense national and future importance.

## **The *Digital Education Revolution* has begun.....**

Denise, a grade 1/2 teacher at a South Australian Primary School spent 30 minutes last night checking her students' progress, updating their individual learning programs and choosing her online teaching resources. Today she has set up her electronic whiteboard with a digital resource called 'Night of the Bilby', a game about animal habitats. Her students are focused, confident and engaged as they enthusiastically discuss ideas about the meaning of 'habitat' and 'grid', talk about notions of 'more' and 'less' in relation to the weight of food and discuss the various functions and symbols employed in the game. They are engaged in determining the level of threat to the bilby and ways in which its survival might be encouraged. The inclusion of some counting and number activities don't interrupt the flow. After this activity, they're back to their desks to create their own bilby games and to work on today's learning program. If they wish, they can continue their work at home and show their parents their progress via the school's web access. They begin every day in a similar way.

Across the country, in Queensland, Mary is supervising her two children's work at the Cairns School of the Air. Once she had trouble understanding some of the underlying concepts of the maths program and finding suitable resources to engage her students. Now, she is more confident. She is using a mathematics digital resource called 'Wishball' to help the children understand and work with place value. The Grade 3 student is working on tenths through level 1 while the Grade 5 student is doing more advanced work with thousands through Level 5. Both are practicing estimating, strategy devising and using arithmetic functions while receiving online feedback. The students are active and purposefully engaged. They like the number line and the abacus and they are describing the impact of their moves and are happy to discuss their strategies. learning maths was never this much fun.

In a small rural school in NSW, Jenny is using the TaLe portal and has discovered resources for counting and number work. She is using these to stimulate learning for a student with intellectual disabilities in the moderate to severe range. Annie, who is nearly 11 years old is practicing counting from one to ten. She finds a pencil difficult to hold. Instead she is touching the interactive whiteboard to move the ladybirds when the answer is correct. When all are counted, they dance on the screen and she dances on her mat.

Meanwhile, students in John's Year 9 Japanese class in a Catholic Secondary school in ACT are immersed in the digital resource, 'Moshi Moshi' a virtual mobile phone experience. They are receiving SMS text messages and voicemail in Japanese from Japanese 'friends'. The students are working in threes around the computer interpreting these messages, listening to conversations in Japanese and reading before they reply themselves, sending addresses and making calendar entries. Along the way, they are receiving guided visual support during each task and feedback in the form of extra phone messages.

These are teachers, parents and students in Australia in 2007. They are not alone. They are amongst a growing body of teachers, students and parents who are now applying the digital curriculum content developed by The Le@rning Federation to twenty-first century schooling.

Use of digital content is supporting new models for delivering schooling. It is being used for distance learning and in virtual schools, parents and students are accessing it to assist with homework and it is capable of providing full subject choices to schools that have not been able to provide them before.

### **The Le@rning Federation's success**

The Le@rning Federation was conceived in 2000 in the context of preparing Australia for an information economy and schooling for the digital world. Ministers agreed that no single jurisdiction could afford the required investment in digital resources and that such resources were necessary to drive the required widespread changes to infrastructure and professional practice. New Zealand joined the Initiative for the same reasons. (Attachment 1)

The Le@rning Federation's achievements are unique and strategic. It is the only digital repository for Australian schools in which all content is free from Copyright Agency Limited (CAL) remuneration. There are no ongoing payments incurred by jurisdictions. The content is quality assured and aligned to Australian curriculum content. Teachers can easily search these curriculum resources by grade, topic and curriculum topic and have immediate and direct access to the content. These resources are now being taken up enthusiastically and effectively by teachers, students and parents in all jurisdictions.

In the first six months of the 2007 school year, the Queensland Department recorded 3,921,038 hits on their Le@rning Federation content. Access to the content from the Tasmanian's Department of Education's portal increased from approximately 16,000 items per month in 2005 to 75,000 items in 2007. These figures do not include use of DVDs distributed to teachers or downloads to school networks. It is clear that uptake of Le@rning Federation digital content is rapidly expanding across the country.

Over the course of the Initiative, The Le@rning Federation has adapted to new and emerging technologies, hardware and bandwidth requirements and shifted digital learning from a radical idea – the effectiveness yet to be proven - to something understood as mainstream.

### **Digital learning works**

Teachers across Australia and New Zealand have been actively involved in the development, testing and use of the digital learning resources, in addition to subject area specialists, instructional designers and students. They have used them in pre-schools, primary and secondary schools, urban and regional schools, special education settings and schools serving indigenous communities in city and remote areas.

Feedback indicates that use of Le@rning Federation digital content is changing the way teachers teach and students learn.

*'For the students I teach, learning objects were the perfect package because everything in them relates to the curriculum; they have animation, automatic positive feedback; auditory support and create high levels of engagement'.*

Teacher, Kensington Gardens PS, Vic

*'Even the younger students have more exposure to more types and complexities of characters than I could possibly enable in the limited time available in the non-digital learning environment. This will have a positive long term outcomes for students learning of Chinese.'*

Teacher, Salisbury Heights PS, SA

*'I reckon I've taught it in half the time I would usually take to teach exponents thanks to the learning object. They are an alternative way of presenting information and knowledge and can be used to reinforce learning in an interesting way... They make Science look modern.'*

Teacher, Hamilton Secondary College, SA

*'The main limitation of this unit previously has been the lack of relevant and accessible information regarding Indigenous Australians that interest a diverse range of abilities and integrate with technology. The Le@rning Federation learning objects and digital resources have changed that.'*

Teacher, Darwin High School NT

*'Being able to hear the spoken word is a great support for students with low literacy levels. And it's step by step, simple and clear. Another thing I liked was that it wouldn't let you go on until you'd got the right answer. That's a great thing for our kids.'*

Teacher, Fitzroy Crossing District High School, WA

These teachers know that digital learning works, that it is opening the door to new ways of managing and mediating learning by moving from a 'one size fits all' approach to one which best suits their students' abilities, learning styles and interests. They know it enables them to do things they could not otherwise do, making it possible for their students to understand in much shorter periods of time, re-engaging those who have dropped out and taking formal learning into the fast, digital world of contemporary students.

And these teachers want more.

### **How much digital content is enough?**

The Le@rning Federation content currently spans six priority areas for years P-10; Science, Mathematics, Languages (Chinese, Japanese and Indonesian), Literacy for students at risk, Australian History and innovation/creativity and enterprise.

The 8600 items of digital content that will be completed by June 2009 range from interactive, game-like sequences designed to teach a specific concept, to single audio, photo and video resources which can be aggregated and aligned to curriculum frameworks.

The digital content to date does not cover all curriculum areas, all year levels evenly or all aspects of course content. Initially digital content was developed particularly for hard to teach concepts for Years P-10, so there is little content, as yet, for Year 11 and 12 courses or for Vocational Education in schools.

There will always be new requirements for digital content to meet specific program requirements and to maintain content currency. Learning-effective digital education content, free from copyright costs, is rarely found on the internet. Maintaining a continuing supply of high quality, Australian (and New Zealand) curriculum-related

content is therefore crucial, particularly to enable jurisdictions to deliver the *Digital Education Revolution*.

The content developed to date has provided a 'kick start' to the application of digital technology in the classroom. The teachers now using it have their own ideas about where more digital content is needed.

New social networking technologies such as blogs<sup>1</sup>, podcasts<sup>2</sup> and vodcasts<sup>3</sup> are progressively adding to the notion of what constitutes shareable digital curriculum content. With the increasing use of electronic whiteboards and mobile devices and the integration of videoconferencing and interactive TV services facilitated by improved bandwidth, the demand by schools to provide digital resources to engage learners and improve and accelerate skills and understanding is just beginning.

### ***Digital Education Revolution* policy**

Three elements of the Australian Government's *A Digital Education Revolution* policy are:

- the development of online curriculum content that will support the national curriculum and conferencing facilities for specialist subjects such as languages;
- working with states, territories and the Deans of Education to ensure that new and continuing teachers have access to training in the use of ICT that enables them to enrich student learning; and
- the development of web portals which will enable parents to participate in their child's education.

Taken together with the Australian Government's commitment of \$1 billion over four years towards a National Secondary Computer fund and the provision of fibre-to-the-premises broadband connections to Australian schools, these elements will create increased demand for Australian digital curriculum content.

### **A valuable national asset**

The Le@rning Federation was initiated because Education Ministers in 2000 believed Australian schools had to adopt digital practices and content. Their investment and persistence through the long years of leading-edge research and development, infrastructure construction, difficult national agreements on technological standards, curriculum consistency, intellectual property sharing, support and distribution structures – all in a context of political and technological change – has delivered a valuable national asset that is now ready to bear fruit in the light of the Australian government's new policy, *A Digital Education Revolution*.

Much of the difficult ground work has been done. Australian education would be well behind its current level of technical interoperability and alignment with global digital

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<sup>1</sup> Personal websites combining text, images and links to other web pages and media related to a topic where readers can leave comments.

<sup>2</sup> Digital audio distributed on the Internet for playback on portable media players.

<sup>3</sup> Online delivery of video on demand.

education best practice without the Ministers' investment in The Le@rning Federation. Through collaboration with jurisdictions, it has brokered national agreements on technical standards, curriculum priorities, the identification of hard-to-teach concepts, curriculum mapping and copyright sharing, as well as the resolution of issues of accessibility and data transfer – the hard, essential, ongoing enabling work to achieve digital education.

In The Le@rning Federation, Ministers now have the capacity and the national structure to cost-effectively share, access, exchange and license quality digital curriculum resources.

The Le@rning Federation's digital content library continues to expand and evolve as technology, hardware and bandwidth capacity change. Many of the learning resources have been developed from scratch with educators and instructional designers working in partnership. This content is highly interactive and draws on classroom research and curriculum expertise. It covers what teachers consider to be the most difficult areas of the curriculum to teach and is mapped to state and territory curriculum frameworks.

Most audio, photo and video resources that have been selected and digitised are the result of close partnerships with many key private and public cultural and collection agencies in Australia and New Zealand. Licenses and copyright are negotiated once on behalf of Ministers and managed efficiently, providing greater economies of scale than the open market with multiple, individual procurement arrangements. Currently The Le@rning Federation is working with over twenty-five government and cultural agencies across Australia and New Zealand. This is expanding rapidly and is building capabilities, infrastructure, capacity and partnerships with education to connect and tailor open digital resources to curriculum use.

All Le@rning Federation content is exempt from Copyright Agency Limited (CAL) remuneration by jurisdictions as it is either owned outright or has copyright cleared third-party-owned content. Effective business rules and standards are used to manage copyright which will not only reduce Ministers' liability, but will limit and control copyright costs as they threaten to overwhelm the sector, now and into the future.

The Le@rning Federation is a lot more than the development and procurement of digital content. Its development and maintenance of a standards regime for learning design, technical infrastructure, metadata and rights management has created a national operating environment and uniform quality and performance of both the content and infrastructure. Without this, use and sharing of digital content across Australia, and internationally, would be impossible.

National collaboration across Australia's school, training and higher education sectors has facilitated the sharing of resources and expertise and leveraged existing initiatives.

The Le@rning Federation's national structure supports digital content development and quality assurance. It transfers the digital content into jurisdictions' portals and systems. Where local access is not available and the jurisdiction approves, the digital content can be accessed by students, parents, teachers, teacher educators and student teachers through The Le@rning Federation's secure web interface called *Scoutle* (a type of school Google). Through this interface, teachers can search, choose digital content and organise it for individual students, groups or the whole class to use and share content reviews and content resource collections with other teachers. Students are able to

access the digital content from anywhere and parents can assist their children at home. User needs and feedback is at the heart of all Le@rning Federation content development and procurement.

The diagram below illustrates the content procurement and distribution process.

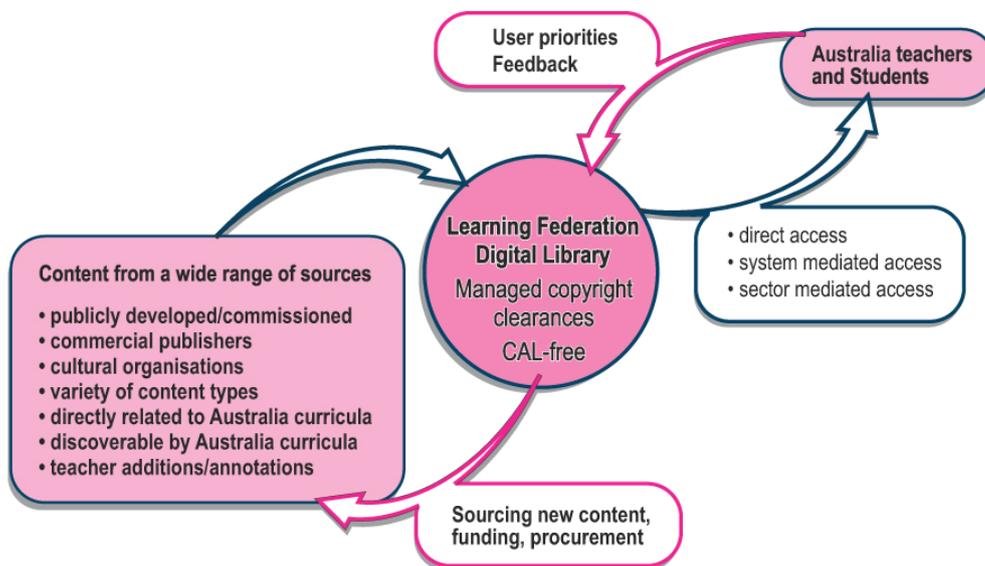


Figure 1: Content Procurement and Distribution

### Driving national curriculum and assessment and teacher quality

The Le@rning Federation is a key component of the national teaching and learning infrastructure which also includes national assessment and national curriculum. Like a three legged stool, each component requires the support of the other.

The digital content and delivery infrastructure provides immediate support for the emerging national curriculum, while also allowing for local curriculum content variation. The infrastructure includes tools for jurisdictions to assist teacher selection of curriculum content, organisation of learning sequences and the sharing of these nationally.

The digital content is easily searchable using both local and national curriculum terms and it is developed in the national curriculum areas of mathematics, science, literacy and Australian History, as well as Asian languages (Japanese, Chinese and Indonesian) and innovation/creativity and enterprise.

Australian students' achievement outcomes in international testing programs, TIMMS and PISA, have provided the normative base to continuously determine the nature of The Le@rning Federation literacy, mathematics and science content, with the express purpose of improving areas of national weakness.

The infrastructure also has the potential to progressively house all the calibrated assessment items developed from the National Assessment Program, maximising the benefit of the \$35 million recurrent annual expenditure devoted to national testing and reaping a larger return. Accompanied by collaboratively-developed tools, this content could be made available to jurisdictions so that teachers could access a variety of tests and create their own tests tailored to the needs of their classes or individual students.

Assessment feedback could link automatically to digital content that would further assist student learning. This would support high quality teacher decision making and the teaching and learning cycle of assessment, diagnosis, targeted intervention and further assessment, for each individual student.

These enabling technologies are especially important for school education in the face of challenging labour market changes. As with all industries, education must accommodate changing work practices and ensure business continuity by supporting its workforce. Teacher shortages in key curriculum areas are already impacting on many school systems and the true potential of e-education may be realised in overcoming these constraints. Increasingly teachers require professional support to meet skill demands. Curriculum and assessment digital content is needed by teachers to support sound teaching and learning decisions and to accelerate teachers' knowledge of what students can do and their capacity for immediate follow up. Students need easy access to technologies to integrate classroom learning in new ways to prepare them for working in the future. Parents increasingly expect informed school relationships and active participation in their child's education. A critical component of a national approach to supporting these areas has already been created by Ministers

Hardware alone cannot improve teaching and learning or support teacher quality. The Le@rning Federation digital content, national structure and its capacity to drive national curriculum and support teacher decision-making has been designed to ensure the fusion of education and digital in a digital education revolution.

### **Cost offsets**

Costs to sustain the national asset developed through the collaborative Le@rning Federation initiative will be substantially offset, and eventually covered, by the savings jurisdictions will make on copyright licence fees. Potentially, in the short term, revenue from international licensing of content developed to June 2009 will also contribute to services provided.

The current Copyright Agency Limited (CAL) payment relativity between print and electronic use is around 15:1 (fifteen times as much photocopying as electronic content use). The relativity is likely to fall from 15:1 to within the 5:1 and 1:1 range in the next few years, especially with improved bandwidth, hardware provision and teacher training stimulated by the *Digital Education Revolution*. Jurisdictions' increasing use of the CAL - exempt content of The Le@rning Federation will reduce their CAL digital content payments significantly. Assuming by 2012 an equivalent amount of digital content will be used relative to print content, the payment under the Electronic Use System (EUS) would be \$70 million per annum. If 60% of the content was accessed through The Le@rning Federation there would be a \$42 million per annum saving. Even 10% at this rate would return a \$7 million annual saving. A rapid shift has already occurred in TAFE which currently pays about \$4 million per annum nationally for photocopying and just over \$3 million for electronic use. If this same ratio of print cost to electronic costs applied in schools now, given the larger student population, the national cost to jurisdictions of electronic use alone would be around \$35 million per annum.

Those jurisdictions that take the most active steps to encourage use of Le@rning Federation digital content will reap the greatest reduction in CAL charges and therefore off-set their contribution to The Le@rning Federation to the greatest extent.

Growing overseas interest and recent license arrangements indicate that there is a potential revenue stream from licensing out Le@rning Federation digital content. Over the past six months, \$60,000 has been received for content license fees and services revenue. With an active marketing program, projected revenue for the years 2009-2011 is expected to be \$172,000, \$410,000 and \$650,000 respectively. This revenue stream would contribute to the costs of The Le@rning Federation and be used for expanding components such as helpdesk support for teachers using digital content associated research and additional quality assurance demands. Revenue from this source will have a limited life if little or no interactive curriculum content is developed and shared post 2009.

### **Bridging the divide**

While teachers such as Denise, Mary and Jenny and John are not alone, they are not yet in the majority. Inconsistency of bandwidth, hardware, support and teacher training across the country means that some students benefit more than others. Our historical principle of all Australian students' right to a similar high standard of schooling has not yet extended to digital resource delivery.

Inevitably, education jurisdictions have rolled out technology in different ways. There is still a substantial gap between the ways many of our students communicate and access information at home and how they are expected to at school, and between what students can access in urban areas and what is available in remote rural areas of Australia.

We are no longer in a world where countries the size of Australia can afford inconsistency and inequality in digital access and application. As adequate affordable broadband access reaches more schools, grants for hardware kick in, and teacher training incentives roll out, building on the achievements of The Le@rning Federation will accelerate the *Digital Education Revolution*, bridging the present digital divide and transforming learning for the twenty first century.

### **Emerging technologies**

Phase One (2001) of The Le@rning Federation focused on the feasibility of the Initiative, Phase Two (2001-2006) on digital content provision, infrastructure systems and standards development and Phase Three (2006-2009) is building a sustainable supply of digital content, free of all copyright licence fees and promoting uptake. Each phase has responded to significant national and global digital technology developments.

Digital technology into the foreseeable future beyond 2009 will incorporate the emerging social networking technologies that support collaboration and sharing of content and ideas. Since 2001, the Web has continued to shift from being a medium in which information is transmitted and consumed, to being a platform, in which content is created, shared, remixed, repurposed, and passed along. The basic elements of this were grasped by Ministers in 2000.

Many students are already interacting with these technologies at home. They are playing networked games, sharing videos on *Youtube*, photos on *Flickr* and linking to their friends on *Myspace*, *Facebook* and *Bebo*. They have long ago replaced email with instant messaging.

For students and teachers the use of digital content encourages creative and reflective learning practices that extend beyond the boundaries of the school and beyond the limits of formal education. Digital content shifts pedagogy towards collaboration and participation and creates a learning environment conducive to much needed communication, teamwork and problem solving skills.

As teacher and student use of digital content increases, so does the potential for sharing ideas and collaboration in content use. Teachers are already beginning to network across school and jurisdiction boundaries, developing rich learning sequences of digital content and sharing these with others. Some students are participating in multi-player interactive learning games, sharing simulations, entering into national and global competitions, collaborative research projects and accessing broad geographic information systems. Increasingly parents will access curriculum support systems to help their children with homework and communicate more easily with teachers.

Similar changes in internet use have swept across entire industries. Education has lagged behind in its take-up of these new technologies and is just beginning to feel their impact.

As Ministers in 2000 hoped, The Le@rning Federation has stimulated this take-up and continues to work closely with jurisdictions to adapt new technologies to support teaching and learning.

### **Moving forward**

The current phase of The Le@rning Federation initiative will conclude in June 2009. In 2006 Ministers asked for a proposal for *'A sustainable Le@rning Federation ensuring the infrastructure, agreements, exchanges and protocols to procure and share quality content in the future without the large scale investment by MCEETYA.'*

Maintaining a supply of high quality, multi-media curriculum digital content requires public investment. This is the case in all countries. Although teachers, students and parents can find useful digital content from general Internet searches, there is not a ready supply of digital content designed with specific pedagogical purpose to meet specific curriculum outcomes so that learning is accelerated and maximised. An increasing and reasonable amount of curriculum-effective digital content can be brokered by Curriculum Corporation from cultural organisations, non-for-profits, other countries and public-obligation programs of commercial organisations. Expensive, development-intensive multi-media digital content, however, requires targeted supply-side public investment. The question is where that investment is best made – at a national level (as it has been for some time in Australia through The Le@rning Federation, literacy, boys' education, civics and many other programs), at state levels (where investment in content has also traditionally been made) or, as in the USA, in substantial state and district funding for textbooks and other resources, or, as in the UK, to schools for purchase of nationally-subsidised digital content.

The Le@rning Federation has successfully nurtured a small, but significant educational multi-media industry. As long as governments remain the major funders (and in many cases, providers) of schooling, they will remain the major commissioners and funders of content to support agreed schooling outcomes. At the present time, good digital resources, as well as being more effective, are more costly to produce than print

resources. However, The Le@rning Federation also provides a way for jurisdictions to control and limit the escalation in copyright remuneration costs.

The collaborative model evolved by Ministers in The Le@rning Federation clearly works for teachers switched on to the digital revolution. The mere availability of digital content, however, does not guarantee usage.

A continuing supply of curriculum-purposed, high quality, copyright-cleared digital content for all schools can be achieved through The Le@rning Federation. It requires commitment of all governments and schooling providers to:

- explicit allocation for digital content within any budget line with a resource component
- an explicitly stated and monitored expectation that digital resources will be a significant part of every student's learning.

The current Le@rning Federation structure of national agreements, protocols, standards, tools, content brokering and licences, with a continuing delivery of around 900 items per year of quality, brokered digital curriculum content can be sustained for a very modest cost to Ministers. The expensive element is the development or procurement of further curriculum-specific, digital multi-media content. This is the area that is proving to be of highest learning-outcome value, and is unlikely to be available in areas of demand without specific investment. It can either be procured nationally, through pooled investment, or procured by jurisdictions and shared through the national structure

Option 1 delivers a pared-down national structure of quality control, copyright management and continuous content brokering from cultural and other not-for-profit agencies. It returns the substantial responsibility for digital multi-media content procurement to States, Territories and the Australian Government, and responds to funding concerns of those trying to sustain content development units<sup>4</sup>. This option introduces a quota system for the contribution of digital multi-media content by jurisdictions who develop or procure digital content relevant to national curriculum areas, calculating a cash-in-lieu payment for other jurisdictions or for items not delivered. Option 1.1 represents a basic level of provision. Option 1.2 a standard level provision. In both options some of the national structure is dismantled.

Option 2 continues the shared national procurement program, based on cash contribution for both national structure and digital content. It suggests jurisdictions explicitly off-set their contribution against mainstream curriculum programs to ensure that digital resources become embedded in every program from now on. Option 2 continues the MCEETYA 2000 principle that only by sharing the multi-media costs across the country would jurisdictions be able to afford the best educational digital content on a sufficient scale<sup>5</sup>.

In both options copyright clearance for free use in all schools, with no Copyright Agency Limited (CAL) remuneration, is essential. All contributed content must, from the

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<sup>4</sup> Many states no longer regard content development as their core business, or a cost-effective use of public money, preferring to *ensure* a supply of content. They are accommodated by a cash-substitution formula.

<sup>5</sup> This belief received confirmation in two independent cost-effectiveness studies.

specification stage, factor in and budget for Australia and New Zealand-wide copyright clearance for free use in all schools. Total costs in both options will be initially offset, and eventually covered, by Ministers' savings in Copyright Agency Limited (CAL) remuneration fees for digital copying and use that are predicted to rise steeply in the future.

***Option 1: Pooled funding for a core national structure with a quota of high quality, digital multi-media curriculum content to be contributed by each jurisdiction.***

Two levels of shared national structure are outlined. Option 1.1 has the minimum core structure possible to retain any national system. Option 1.2 adds to the national core some of the current modest supports for teachers and jurisdictions. In both options, jurisdictions contribute the same quota of digital multi-media curriculum content, or cash-in-lieu.

**Option 1.1**

Jurisdictions contribute a total of \$4.94 million per annum to cover the national structure and a quota of digital multi-media curriculum content.

**Included in the national structure**

- maintenance of existing national repository, and *Scootle*
- upgrading of standards and specifications covering educational soundness, technical, accessibility and metadata, and administration of quality control systems
- continuing expansion of partnerships with public collection agencies, non-government agencies, other education sectors and statutory authorities for educational purposing of our cultural treasures, with all copyright licence fees paid up front
- brokering national licences on behalf of jurisdictions for commercial digital resources, where required, with all copyright licence fees paid up front
- licensing The Learning Federation content internationally and brokering reciprocal exchanges of curriculum-relevant digital content with other countries with all copyright licence fees paid up front
- a total of 900 new items of content per annum from the above activities.

**Excluded from the national structure**

- further development of *Scootle*, and the repository
- Contact Liaison Officer salaries
- travel costs for jurisdiction personnel
- teacher support and help-desk
- secretariat and governance support

- any DEEWR administrative allowance
- new curriculum-specific multi-media content.

All excluded services would need to be accommodated internally by each jurisdiction.

### **Digital multi-media curriculum content contribution**

To close the gap between current levels of The Le@rning Federation digital content supply and that procured through the funding for the national structure, all contributing governments, in the spirit of collaborative federalism, will make a formal commitment to share a quota of digital curriculum content procured within their mainstream-funded curriculum programs or contribute cash-in-lieu.

Contributed digital multi-media content would be high-quality, targeted to nationally agreed curriculum, comply with the nationally agreed standards developed through The Le@rning Federation and licensed for use in all schools in Australia and New Zealand with no further copyright remuneration payable<sup>6</sup>.

The Le@rning Federation would manage a quality assurance process, using currently agreed standards and systems. The Le@rning Federation will determine technical and licensing compliance. An external online panel of curriculum experts nominated by jurisdictions will determine curriculum and pedagogical compliance. All adjustments of content to meet standards remain the responsibility of the contributor.

Quotas required to ensure a supply of digital content similar to current Le@rning Federation levels have been calculated using the current MCEETYA project formula.

It is now possible to obtain feedback from users of all content, so, over time, the rates of usage of each item could be factored into future directions and development.

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<sup>6</sup> Some jurisdictions are already developing and sharing a range of digital content and the capacity for all jurisdictions to share could be considerably enhanced through the framework of negotiated agreements constituting the National Education Access Licence for Schools (NEALS). It should be noted, however, that NEALS does not guarantee exemption from Copyright Agency Limited remuneration, and all contributed content *must* have a licence for free use in all schools in Australia and New Zealand, so additional work will need to be done on this front by contributing jurisdictions.

Tables 1a and 1b summarise the per annum costs to jurisdictions of Option 1.1

Government	%age	Contribution (\$)
Australian	50	2,470,000
NSW	16.5	815 100
Vic	12.42	613 548
Qld	9.83	485 602
SA	3.81	188 214
WA	4.93	243 542
Tas	1.2	59 280
NT	0.51	24 206
ACT	0.82	40 508
<b>TOTAL</b>	<b>100%</b>	<b>4 940 000</b>

**Table 1a Annual contributions to the national structure for Option 1.1**

Government	%age	Items of content	Cash* in lieu (\$)
Australian	50	217	4 340 000
NSW	16.5	71	1 420 000
Vic	12.42	54	1 080 000
Qld	9.83	43	860 000
SA	3.81	16	320 000
WA	4.93	21	420 000
Tas	1.2	5	100 000
NT	.49	2	40 000
ACT	.82	4	80 000
<b>Total</b>	<b>100%</b>	<b>433</b>	<b>8 660 000</b>

**Table 1b Annual contribution off/for digital multi-media content for Option 1.1**

\*This column represents the maximum payable should no content be contributed. For the Australian Government it represents the amount payable to commission 217 items of multi-media content to support DEEWR curriculum programs. Jurisdictions may contribute part content, part cash on a pro-rata basis.

## Option 1.2

Jurisdictions contribute a total of \$7.79 million per annum to cover the national structure and a quota of digital multi-media curriculum content.

### Included in the national structure

- further development of *Scootle* and the national repository
- Contact Liaison Officer salaries
- travel costs for jurisdiction personnel to quality assurance and collaborative meetings
- online teacher support and help-desk
- all elements included in Option 1.1.

### Excluded from the national structure

At this level of annual funding the national structure does not include:

- secretariat and governance support
- any DEEWR administrative allowance
- new curriculum-specific multi-media content (such as learning objects).

Tables 2a and 2b summarise the per annum costs to jurisdictions of Option 1.2.

Government	%age	Contribution (\$)
Australian	50	3 895 000
NSW	16.5	1 285 350
Vic	12.42	967 518
Qld	9.83	765 757
WA	4.93	384 047
SA	3.81	296 799
Tas	1.2	93 480
NT	0.49	38 171
ACT	0.82	63 878
<b>TOTAL</b>	<b>100%</b>	<b>7 790 000</b>

Table 2a Annual contributions to the national structure for Option 1.2

Government	%age	Items of content	Cash* in lieu (\$)
Australian	50	217	4 340 000
NSW	16.5	71	1 420 000
Vic	12.42	54	1 080 000
Qld	9.83	43	860 000
SA	3.81	16	320 000
WA	4.93	21	420 000
Tas	1.2	5	100 000
NT	.49	2	40 000
ACT	.82	4	80 000
<b>Total</b>	<b>100%</b>	<b>433</b>	<b>8 660 000</b>

Table 2b Annual contribution of/for digital multi-media content for Option 1.2

### Digital multi-media curriculum content contribution

The digital multi-media curriculum content contribution is the same in Option 1.1

### ***Option 2 – Shared national digital curriculum content procurement program***

This option continues the current arrangement of digital content development and procurement as a national collaboration for a further triennium, using the current model of collaborative development, procurement and distribution. To address the issue of ensuring digital content is used by all teachers within normal curriculum activity, jurisdictions will ensure mainstream curriculum programs include digital resources, and content will be developed with a view to improving coverage. The Australian Government in particular, might consider ways in which The Le@rning Federation could provide components of mainstream curriculum initiatives.

Given improvements in production processes, capacity to manage copyright efficiently, further simplification of governance, a three-year investment of \$16.465 million per annum, the cash equivalent of Option 1.2, could be expected to produce a further 5000 items of content, a 20% increase in volume over Option 1.2. This is achievable because of concentrated expertise and economies of scale, elements sacrificed in Option 1. All elements of Option 1.2 are covered, research work is continued and teacher support networks are extended and ramped up.

#### **Included**

- all Option 1. inclusions
- an additional 1000 items of content
- continuing research
- extended and ramped-up teacher networks.

## Excluded

- secretariat and governance support
- any DEEWR administrative allowance

Table 3 summarises the per annum contributions required for Option 2.

Government	Percentage	Contribution (\$)
Australian	50%	8 232 500
NSW	16.5	2 716 725
Vic	12.42	2 044 953
Qld	9.83	1 618 510
SA	3.81	627 317
WA	4.93	811 725
Tas	1.2	197 580
NT	.49	80 679
ACT	.82	135 013
TOTAL	100%	16 465 002

**Table 3 Total annual contributions for Option 2.**

Option 2 is especially responsive to developments in national curriculum, assessment and the *Digital Education Revolution*. Additional content can be quickly focused in areas identified as weak by international and national assessment within the key national curriculum areas of English, mathematics, science and Australian history. Additional content could also supplement current P-10 course materials in these national curriculum areas in order to provide more comprehensive course coverage. This would be especially attractive to those jurisdictions planning to establish more flexible modes of schooling involving distance learning, digital homework support and online extension and remediation services to be accessed within and outside the classroom. Content specifically effective in indigenous schools can be developed and national language priorities supported. There is evidence of demand in a range of these areas from teachers already using Le@rning Federation content. No content has yet been developed for Years 11 and 12, areas of emerging national expectation.

Unless digital curriculum content becomes an embedded component of curriculum content provision we do not have provision for a digital education revolution. Either we locally procure, from existing budgets, in an agreed and rigorous way, nationally-relevant, standards-compliant, pedagogically-effective resources and share them in a formal and disciplined way (Option 1), or we allocate a budget for further national digital content procurement (Option 2), accepting this as recurrent expenditure for national curriculum resources relevant to all.

The digital content 'roadway' has been built. The key to sustainability of this national asset is the guarantee of an ongoing supply of learning-effective, affordable content to travel on it - digital content that is copyright clear and that responds to the emerging

needs of teachers, students and parents as new national curriculum requirements and technological possibilities kick in over the next decade.

### **Building on the investment**

Option 1 builds cautiously on the existing national content and digital infrastructure and ensures the digital content supply chain to schools has a substantial and controllable component of copyright licence exemption provided all jurisdictions do the right thing in terms of quality content contribution and copyright negotiation for the country.

It dismantles a significant part of the content procurement component of the national asset and sacrifices economies of scale. It gives weight to individual state's powers in provision rather than collective responsibility. There is risk that the impetus will dissipate and states will assign a low priority to meeting their content quota, will provide little or no internal support or will not agree with verdicts of the peer reviewing panel. This is largely out of the control of MCEETYA.

Option 2 uses more fully the company owned and managed by Ministers, in order to gain competitive advantage and cost-effectiveness. It is more responsive to Australia as a whole in the global education market. As Law Professor and Barrister George Williams comments:<sup>7</sup>

*Today, the economy does not consist of discrete and insular sectors of commerce within each State or even within Australia, but exists within a world of global markets that foster competition and interdependence with the economies of other nations.*

National commitment by Ministers is necessary to achieve revolutionary change. The original commitment to the vision of The Le@rning Federation necessitated unprecedented levels of national investment and collaboration and achieved substantial change in interoperability, sharing, digital application and learning-effectiveness. To achieve ongoing revolutionary change requires again either a national commitment to a minimum structure and content sharing (Option 1), or to further national investment in digital content procurement (Option 2).

### **Benefits too important to lose**

There is a growing confidence, articulated clearly by many teachers using Le@rning Federation content that it is revolutionising teaching and learning. Students in early years are better understanding concepts previously thought to be too difficult for their age group, learning is being accelerated, students are motivated and engaged, and teachers can personalise learning in a classroom of thirty students. As a critical mass of digital content is developed, greater flexibility of schooling provision is enabled, whereby students can access their instruction anywhere, any time. Such impacts are what Ministers have hoped for.

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<sup>7</sup> Co-operative Federalism and the Revival of the Corporations Law: Wakim and beyond, Companies and Securities Law Journal Vol. 20 page 160

The students in Denise, Mary, Jenny and John's classes and those like them are the lucky ones. The challenge is to make learning a positive, exciting experience both inside and outside the classroom and to provide the positive benefits of the digital revolution for all our students and teachers. This is important for our country's future and to produce the innovative, skilled workforce we need. Schooling is, and has always been, the cornerstone of our productivity and living standards.

The hard yards have been done with Phases One, Two and Three of The Le@rning Federation. There are teachers, students and teachers seeing learning improvements, unprecedented national agreements on standards and intellectual property, copyright cost control opportunities and collaborative networks deep into systems, sectors and universities that can be used to extend support, research and communities of practice. Ministers have collaborated and persevered, believing they had to build the foundation for digital education. A *Digital Education Revolution* in the form of a driving Australian Government policy is now upon us. The national investment required to sustain The Le@rning Federation and exploit the potential of new technologies for education, even at the higher Option 2, is modest, while the benefits to generations of Australia's students are not only extensive but of global and historic importance.

## **Attachment 1**

### **Background to The Le@rning Federation**

The Le@rning Federation was established in 2001. There have been three phases :

#### **Phase 1: Feasibility and Agreement**

The Le@rning Federation Initiative was a result of agreements by all education Ministers in Australia and New Zealand in the period 2000–2001 to collaborate in developing online curriculum content for all Australian and New Zealand schools and delivering it to jurisdictions.

#### **Phase 2: Initial Implementation (2001-2006)**

During this phase the initiative:

- produced an extensive pool of online content in the agreed priority curriculum areas
- established productive partnerships with cultural and public organisations that have enabled schools' online access to key resources not previously available for education purposes and have facilitated further digitisation of public assets and development of online repositories that will become increasingly available to schools
- established a sophisticated content repository that facilitates online content development processes and enables content to be distributed to jurisdictions. while managing intellectual property rights
- supported a marketplace for the development of high quality public and private online curriculum content through partnerships with Australian and New Zealand multimedia and system developers. The online content and infrastructure has been developed within a standards-based framework reflecting international standards and requirements of the Australian education sector.

#### **Phase 3: Building a sustainable supply of online curriculum content (2006-2009)**

In this phase the initiative aims to deliver:

- a further 4000 items of high quality, globally recognised, online curriculum content for all Australian and New Zealand schools
- a workable framework, standards and structure for the sharing of online curriculum content between jurisdictions within Australia and New Zealand and with other countries
- an interoperable framework to enable sharing and peer-reviewing of teacher-initiated online resources
- brokered arrangements with vendors to support distribution and use of online curriculum content in schools and
- consolidated schooling sector support for a local education digital content industry.

## **Attachment 2**

### **Frequently Asked Questions**

#### ***What is The Le@rning Federation?***

The Le@rning Federation is a collaborative initiative of all Australian and New Zealand education Ministers developing and procuring online curriculum content specifically for Australian and New Zealand curricula and delivering it for free distribution to schools to all educational jurisdictions of those Ministers.

#### ***Why is it important for schools to use digital curriculum content?***

We have a digital future. Our students are already growing up in a digital world. Of course they will learn without digital content, but they live and will work in a world that is digitally underpinned and we need citizens who operate comfortably and creatively and can innovate in that context. Digital technologies also have the capacity to accelerate and improve learning. Our place in the world depends on all our children learning effectively and quickly.

#### ***How is The Le@rning Federation currently funded?***

The Le@rning Federation is funded by all Australian governments and the government of New Zealand. The Australian Government contributes approximately 50 per cent of the base funds and the states and territories contribute the remaining 50 per cent based on the MCEETYA per capita formula. Additionally, New Zealand contributes funds based on student numbers.

#### ***Schooling is largely a state and territory matter. Why should digital content provision be national and collaborative?***

Significant studies have shown it is far more cost-effective, even for large states, to share digital content procurement. Multi-media, in particular, can be put to significant advantage in education but is expensive, time consuming and expert-demanding to produce. Advances in searching technologies and data protocols mean very specific items of content can be accessed and purposed to very local need, meaning they are used and re-used in many different ways in many different places to achieve very contextually-specific learning. Digital technologies are by their nature collaborative and shared. We can aggregate our resources to achieve a critical mass of both content and technology unachievable by separate states and territories with a total population of twenty million.

#### ***Why have some teachers not seen The Le@rning Federation content?***

The original Le@rning Federation agreement was that content would only be distributed to schools by jurisdictions. All promotion, publicity and access information was to be managed by them. In some places, especially where bandwidth is an issue, local priorities overwhelm or personnel and systems have changed, the content has been physically delivered to most schools, while information and support has not reached all schools.

The Le@rning Federation attempts to overcome this by publishing articles in national journals and magazines, conference presentations, brochures and online activities. The

Le@rning Federation has now developed *Scootle*, a kind of Google for schools, which, with the approval of the relevant jurisdiction, provides users with direct access to the content. Teacher education providers use *Scootle* very effectively. Any teacher and any student can access The Le@rning Federation content through their jurisdiction and, with jurisdiction support, through *Scootle*.

***How do teachers, students and parents access The Le@rning Federation content?***

The Le@rning Federation content is distributed to schools through jurisdictional portals and, in the case of the independent sector on DVD. Access for students and parents is dependent upon the access provided by each jurisdiction.

A direct web access system, *Scootle*, is a repository of all The Le@rning Federation content with a sophisticated search function and a number of tools to facilitate ease of use by teachers and students along with some Web 2.0 tools. *Scootle* could be made available to all schools in Australia and New Zealand.

***Content is all very well, but teachers have to be able to use it. What does The Le@rning Federation do to support teachers in their use of digital curriculum content?***

The Le@rning Federation supports Contact Liaison Officers (CLOs) in each jurisdiction. They work with other officers from their jurisdiction to optimise use of content procured through the Initiative.

The Le@rning Federation is a regular participant at significant conferences and activities such as the Australian Government's summer schools. All participants were provided with resources and a presentation for use with colleagues on their return to schools.

The Le@rning Federation website provides case studies of the use of digital content in schools and reports of research into the effective use of digital content with students. There is sample content and vignettes of how teachers incorporate the content into their learning programs.

In collaboration with the Australian Association of Teachers of English (AATE), teachers have conducted action research projects on the use of the digital content in schools. The results of this work have been published on both The Le@rning Federation and AATE websites. Similar projects are being developed with the Australian Science Teachers Association (ASTA) and the History Teachers Association of Australia (HTAA).

The Le@rning Federation has provided access to the content for the higher education sector to ensure all teachers-in-training understand the pedagogical implications of effective implementation of digital content.

***How does the Le@rning Federation fit with EdNA?***

Both The Le@rning Federation and EdNA are national services and are accessed online. EdNA provides an online directory of links to websites of curriculum relevance along with opportunities for online communication across education sectors. The Le@rning Federation collaborates with school sector jurisdictions to create, procure and disseminate high quality, digital content directly related to specific elements of Australian and New Zealand curriculum, designed to support learning programs in schools. For the most part, jurisdictions deliver The Le@rning Federation content through their own portals and hence schools do not incur download costs.

### ***Why should Curriculum Corporation do this digital curriculum content work?***

Curriculum Corporation is owned by all Ministers and is charged with responsibility to undertake national collaborative curriculum development work for jurisdictions. Its Board comprises schools education stakeholders including Ministerial representatives from all states and territories, representatives from the Catholic and independent sectors and parent and teacher organisations. It has considerable expertise in system development, instructional design and the application and development of technical and curriculum standards in a digital, as well as a print context. It manages the development and delivery of digital resources, standards and services through The Le@rning Federation, and has capacity to link this work to other national agreements and priorities.

### ***What has been achieved to date?***

By 31 December 2007 the project:

- published over 6300 items of high-quality digital content in two forms: Learning objects with imbedded educational design and curriculum aligned digital resources, sourced in collaboration with national and state/territory collection agencies
- developed a content repository to facilitate content development processes, enable jurisdictions to distribute content to schools and provide access for the higher education sector and for schools without system access
- maintained extensive consultation networks and collaborative processes to ensure all work complies with requirements of jurisdictions and supports local implementation
- developed national standards and specifications reflecting international standards to ensure technical interoperability, and systems to manage licensing and intellectual property for digital content.