

31 July 2008

Review of Australian Higher Education - Submission
Location 023
GPO Box 9880
Canberra ACT 2601

Education.au is pleased to be able to provide the Department of Education, Employment and Workplace Relations with a submission to the Review of Australian Higher Education .

The focus of this submission is on the importance of information and communications technologies (ICT) as an enabler for the delivery of a world class education system.

Yours sincerely

Greg Black
CEO



Review of Australian Higher Education
Submission by education.au

July 2008

Author

Education.au

The primary author of this submission on behalf of education.au is Jenny Millea, Program Manager, Higher Education.

Email: jmillea@educationau.edu.au

Organisation

Education.au (www.educationau.edu.au)

Ph: 08 8334 3210

CEO: Mr Greg Black

Type of organisation

Not for profit ministerially owned company

Address

182 Fullarton Road

Dulwich, SA, 5065

Australia

State/Territory

South Australia

Email and phone contact

Company email: info@educationau.edu.au

Company switchboard: 08 8334 3210

CEO: Mr Greg Black

CEO Email: gblack@educationau.edu.au

Declaration of interest

Education.au is owned by all Australia's ministers of education and training.

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About education.au and the higher education sector

Education.au (www.educationau.edu.au) is a not-for-profit ministerially-owned agency, governed through a Board by nominees from the Australian Government, higher education, school education, and vocational education and training sectors.

The agency focuses on the needs of Australian education, training and careers within the context of emerging information and communications technologies (ICTs) and standards as they apply to the Internet. It provides innovative, leading edge solutions, trials new technologies, reviews emerging technologies that may have relevance for education and training, provides consultancy services, and provides a safe online environment in which educators can experiment.

Education.au has a range of intersection points with the higher education sector.

- Education.au is an associate member of the Australian Council of Online and Distance Education (ACODE www.acode.edu.au).
- **edna project**
edna (www.edna.edu.au) is a network of the education and training community. It includes government and non-government schooling systems, early childhood, vocational and technical education, adult and community education and higher education.
edna is developed and managed by education.au on behalf of the project's stakeholders. The project is funded to deliver a range of services specific to the higher education sector and is governed by the edna Reference Committee.
The **edna** Reference Committee (ERC) includes representatives from the Department of Education, Employment and Workplace Relations (DEEWR), Australian Information and Communications Technology in Education Committee (AICTEC), Flexible Learning Advisory Group (FLAG), higher education, school education and industry sectors.
Services provided by **edna** to the higher education sector include:
 - news monitoring of key media releases, events, activities, projects and opportunities in the Higher Education sector. These are compiled in a free weekly email newsletter (Higher Education Update) and sent out to more than 1100 subscribers
 - metadata cataloguing and dissemination of online resources, with special attention to materials in the area of technologies and their application in university teaching and learning. These are accessible for browsing <http://www.edna.edu.au/edna/go/highered/cache/offonce/pid/295> and searching <http://www.edna.edu.au/edna/go/highered/cache/offonce/pid/844>
 - pre-selected content organised in a range of Hot Topics (eg plagiarism, peer review, open source, accessibility) http://www.edna.edu.au/edna/go/highered/hot_topics
 - access to external repositories of online content via federated search <http://www.edna.edu.au/edna/go/highered/pid/844?SearchMode=distributed>

- identifying and cataloguing Higher Education-related conferences and events, in Australia, overseas and online
http://www.edna.edu.au/edna/go/highered/highered_events/
 - communication and collaboration tools, including Web 2.0 technologies (me.edna.edu.au; groups.edna.edu.au)
 - provision of free tools for content syndication and site content building, including RSS and javascript
<http://www.edna.edu.au/edna/go/highered/cache/offonce/pid/974>
 - free promotion of Higher Education events and activities
 - free askedna service to assist and support the Higher Education community in locating content of interest
 - face-to-face and online workshops and information sessions, to assist the Higher Education community in better using various technologies in their professional practice
 - trialling of emerging technologies on online services, to investigate their application in education.
- **The Carrick Exchange** (www.carrickexchange.edu.au)
 - Education.au was a collaborative partner, with ascilite, ACODE and the Australian Learning and Teaching Council (formerly the Carrick Institute) in the conceptualisation of the Carrick Exchange (www.carrickexchange.edu.au) as a social networking and resource sharing service for teaching and learning related people, groups and resources in higher education.
 - Education.au undertook sector-wide consultations in the areas of metadata and intellectual property to inform the development of the Carrick Exchange.
 - Education.au undertook the development work on the Carrick Exchange building it on the open source Drupal content management system, integrated with a DSpace repository and education.au's open source federated search technology.
 - **Australian Access Federation**
 - Implementation of the Australian Access Federation, the higher education focused federated access management system, in two projects.

Review of Australian Higher Education

Education.au has reviewed the Discussion Paper provided as part of the Review of Higher Education.

Information and communication technologies (ICT) and supporting infrastructure needs to be a high priority for the Review Committee in considering the future of higher education.

We believe a national approach to ICT for education and lifelong learning should be a key priority for the Australian Government. This would require the formulation and administration of a national approach to key areas of ICT infrastructure and the integration of a number of existing initiatives, projects and reviews.

Education.au recently commissioned some research, published in the 2008 report 'Educators and ICT Usage'¹, relevant to this Review.

The report reveals the integral role information and communications technologies play in the education sector for teaching, for research, and for administrative tasks; that is, ICTs are a core enabler for the functioning of learning organisations.

Research findings

The overwhelming majority of those surveyed (85%) indicated that they use the Internet once a day or more often, with a small proportion using the Internet less frequently. **The vast majority also indicated that they access the Internet at work.**

Use of search engines such as Google or Yahoo was almost universal, while more than one third indicated that they also **use each of online communities (45%), learning management systems (39%) and subject/discipline databases (33%).**

The most common purposes of using the Internet were identified as **research (83%), finding learning resources (80%), professional development (64%), interacting with colleagues (61%), teaching and communicating with students (55%) and administration (54%).**

The main barriers to using the internet were identified as poor infrastructure – bandwidth, equipment reliability, accessibility (41%) and the blocking/filtering of internet content.

The view that the Internet is important to the work of educators was almost universal (97%).

¹ Education.au, *Educators and ICT Usage*, 2008 Reference

http://www.educationau.edu.au/jahia/webdav/site/myjahiasite/shared/papers/market_research_final_report.pdf Accessed 14 July 2008

As a national, ministerially owned company, our decade-long experience collaborating with all sectors of education and all jurisdictions indicates that a strategic approach to ICT for education that is cross-sectoral and cross-jurisdictional would benefit all Australians by:

- Reducing duplication of effort
- Enabling and supporting knowledge and resource sharing
- Reducing costs of implementation
- Improving interoperability
- Increasing opportunities for innovation

Our observation is that there is an extraordinary amount of excellent work going on in the education and training sector in relation to innovation in teaching and learning, testing and trialling new and emerging technologies, and addressing the challenges of implementing ICT infrastructures. This work frequently occurs in challenging and constrained circumstances and its effort is often fragmented.

We suggest that the Australian Government take the initiative at a national level to provide an infrastructure for all education and training, not one sector or another, to encourage and enable seamless transitions between sectors (that is early childhood-school-further education-lifelong learning) and to support and encourage innovation in the delivery of an integrated, world-class education system.

The transitions are impacted by a range of infrastructure issues and policy positions. Some of these are mentioned in brief in this document. Education.au would be pleased to provide further information and advice in relation to any of these issues as part of the review process.

Digital Education Revolution

- The Digital Education Revolution needs to be cross-sectoral and to be a philosophy rather than be project-oriented or based on a 3-year plan. People need to be able to move seamlessly from one sector to the next and to be supported by similar kinds of enabling technologies, systems, processes and practices. These technologies, systems, processes and practices need to be addressed at a national level, and cross-sectorally.
- A good start has been made in addressing some hardware infrastructure issues in the school education environment. This needs to be supported by a similar national commitment to a DER in the VET and higher education sectors, and ultimately into the community through libraries and community centres.
- DER policy needs to go beyond ICT hardware infrastructure and address enabling technologies, software solutions, digital pedagogies and other associated issues.
- Taking the DER outside of the formal education environment into our libraries and community centres would enable the support of the true digital citizen who is able to participate effectively in the electronic-based economy and world of work.
- At present most ICT innovation in higher education is project based, or discipline based, or a response to a particular identified need, rather than a whole of sector strategic approach. A national approach ICT infrastructure for education would help position Australia globally and support its research endeavours.

National plan and direction

- We suggest the development of a national plan and direction for the higher education sector that brings together the teaching and learning and research arms in a way that supports and values excellence and innovation in both areas, and acknowledges the inextricable linkages between the two endeavours.
- We suggest strong articulation with the VET sector, with consideration to moving towards the development of a coherent 'further education' sector with distinct and clear roles for VET training and for university education to reduce overlap and competition between the sectors, and ensure effort is delivered in the areas of training and education needed most by the economy.
- We suggest a nationally coordinated across-education plan for education and training which incorporates all sectors, provides a national ICT infrastructure, takes a lifelong learning approach, and focuses on embedding good practice.

Intellectual property (IP): national approach needed

Our comments in relation to IP are largely a response to the consultation education.au undertook in 2007 in relation to intellectual property and teaching and learning resources in the higher education sector on behalf of the Australian Learning and Teaching Council (the full report is available on request) and our general experience of developing and managing repositories, and access to repositories, of teaching and learning materials for the education sector through projects such as edna, The Carrick Exchange, The Learning Federation/Scoutle, and LORN.

- Issues surrounding IP impact on knowledge sharing, resource reuse, results in duplication of effort, and inhibits innovation. This is the case in relation to both teaching and learning resources, and to research outputs.
- At present teaching and learning resources and research outputs are dealt with differently in relation to IP: institutions (generally) own the IP in teaching and learning (T&L) resources developed by the academic; academics usually have a license from the university in IP ownership of research outputs, however this varies from university to university, and sometimes depends on the particular academic's employment contract. The different IP treatment of materials produced by academics (ie whether they were research or teaching and learning materials) is confusing and the distinction is often unclear.
- A coherent, national approach that covered all sectors of education would simplify systems, reduce ambiguity, reduce implementation costs, and encourage resource and knowledge sharing.
- IP concerns are limiting Australia's ability to compete globally in initiatives that are likely to be significant in the medium term such as OpenCourseWare² and open knowledge initiatives generally.
- Our exploration of intellectual property issues in the higher education sector in relation to sharing T&L materials indicate that the sharing of T&L resources is discouraged by organisational or jurisdictional ownership of those resources and that agreements should be sought with institutions and jurisdictions to enable T&L resources to be shared across the education and training sector.
- VET sector and higher education approaches to the licensing of teaching and learning materials need to be harmonised.

² OpenCourseWare Consortium <http://www.ocwconsortium.org/> Referenced 28 July 2008

Information and Communications Technologies (ICT) for Teaching and Learning: knowledge sharing at a sectoral level needed

- Universities make individual technology decisions about what ICT to use for teaching and learning. We suggest that knowledge sharing across the sector could reduce the costs and risks involved in decision making and implementation of T&L software, gadgetry and hardware. There has been some national activity of this type - for example the Australian Sustainable Repositories Project, but this project focused on repositories only and on the management of research materials only, and was project based and now the project is at an end that effort has been largely discontinued.
- Knowledge sharing could include activities such as:
 - Sharing evaluation matrixes and implementation plans
 - Sharing lessons learned through national forums and meetings
 - Providing a sandpit space where institutions can test and trial various technology options before making decisions about their own implementations.
 - Undertaking formal reviews of software using requirements gathered from the sector.
 - Running national events for the sharing of case studies.

Information management: research outputs and T&L resources need to be managed in a coordinated way

- There has been a distinction made over the past several years between teaching and learning materials and research outputs, particularly in relation to the management of these resources. An integrated approach should be taken to the management of T&L resources and research outputs. Organisations could use the same repository for the holding of both kinds of resources (at present – usually - T&L resources are held in learning management systems (LMS), research outputs in ‘institutional repositories’, however it varies from university to university and there is a lack of consistency or certainty that items will be held in, and made discoverable through, a repository).
- Agree to the adoption of national cataloguing standards for the description of T&L resources and research outputs so that there’s consistency in cataloguing of resources in relation to course codes, research codes and to thesauri terms used to describe the subject matter. (At present there are a number of different descriptors and codes that could be used).
- A national approach to the discovery of T&L and research outputs regardless of their organisational home. Some work has been done in this area through the ARROW project, for example. This commitment needs to be continued at a national level, and also needs to be addressed cross-sectorally.

Professional development: commitment and resources required

Although many academics are innovative users of ICTs and early adopters, others struggle with incorporating and embedding the use of ICTs into their teaching practice because of competing

priorities and responsibilities. Ongoing professional development support and mentoring is required if academics are to harness the possibilities of ICTs in ways appropriate to their discipline and effective for their students' learning experiences.

Education.au's research has found that 36% of respondents in the survey (this was a mix of educators, not higher education only) identified their levels of expertise in their current use of ICT in working and teaching practice as 'emergent' and 6% as 'foundation'. This suggests that many educators need ongoing support to truly take advantage of the opportunities in teaching and learning that ICTs provide, and to be aware of possibilities of new and emergent technologies.

We suggest a national cross-sectoral commitment to support and mentor educators in the use of technology in teaching and learning. The mentoring could take a range of forms. For example:

- State-based cross-sectoral mentors that run workshops (both f2f and online) using particular kinds of technologies and/or online pedagogies, providing demonstrators and case studies. These could, for example, provide support at an organisational level, provide train-the-trainer services to teaching and learning centres in Universities, provide one-on-one support, and facilitate communities of practice.
- Dissemination of Australian and international case studies, exemplars and research in the use of new technologies in teaching and learning
- Support continuous uptake and improvement in the use of ICTs for teaching and learning through project funding and support for the embedding of good practice.

Identity management: a cross-sectoral approach required

Education.au suggests the implementation of an integrated cross-sectoral approach to student identity management and a trust federation.

A number of activities that impact this area are underway - including work following on from AICTEC funded Learner Identity Management Framework (LIMF) report of March 2006, and the Australian Government funded Australian Access Federation (AAF) (www.aaf.edu.au) project.

The AAF is primarily a higher education initiative, so funding is only available to service that sector. While the project is able to provide some advice to other sectors through a part-time cross sectoral advisor, it does not have funding available to support implementations. In the past there have been informal discussions about the notion of peer federations (ie the HE federation may possibly peer with federations in the other sectors at some point in the future). We suggest the implementation of a national cross-sectoral trust federation for education and training.

A national cross-sectoral trust federation does not solve all the issues relating to identity management and resource sharing in the education sector, or for lifelong learning. Within the AAF identity is largely determined by a person's affiliation with an organisation that is a member of the AAF.

The type of roles you have within AAF organisations determines the privileges and identity that you have. Many lifelong learners do not have (active) affiliations with organisations likely to be in the AAF, but still may benefit from identity and other services that support lifelong learning - such as eportfolios.

Further, people and organisations outside a trust federation may have good reason to legitimately access content or services provided by that federation (an example may be a potential employer being granted access to an eportfolio).

A national approach to an identity framework is needed to supports these and other, wider areas of functionality that will benefit all educators and learners