



GIHE | Griffith Institute for
Higher Education

Student Induction to E-Learning: A Progress report

Report prepared by

Professor Kerri-Lee Krause

&

Dr Celina McEwen

Commissioned by University of Southern Queensland,

by Link Affiliates Team within the Australian Digital Futures Institute

on behalf of the

Department of Education, Employment and Workplace Relations (DEEWR)

March 2009

Executive Summary

The Student Induction to E-Learning (SIEL) project, formerly known as Technology-Enabled Flexible Learning (TEFL), an IMS Global Learning Consortium (IMS) initiative, aims to develop a better understanding of the teaching and learning opportunities and constraints that exist in designing and delivering an effective, efficient and engaging online education. The Australian Commonwealth Department of Education Employment and Workplace Relations (DEEWR) under the Digital Education Revolution (DER), funded a project managed through the Link Affiliates Team, the Australian Digital Futures Institute (ADFI) within the Division of Academic Information Services (DAIS), University of Southern Queensland. This enabled a research team consisting of Professor Kerri-Lee Krause, Chair in Higher Education and Director of the Griffith Institute for Higher Education (GIHE), Griffith University, and Dr Celina McEwen to contribute to the project between 1 September 2008 and 28 February 2009.

The Australian team contributed to the SIEL project by reviewing the Australasian and British literature pertaining to online education and student retention. The team also contributed to the project through consultation and promotion of the project's outputs to an Australian audience, by conducting a survey of Australian academics and executives involved in online education and by providing significant input to the documentation of the project's outputs.

The project generated some significant outcomes on a national as well as an international level, such as positive feedback on the project aims and outcomes from stakeholders across educational sectors and increased interaction with and exposure to international online education stakeholders. One of the most significant outcome, however, was the establishment of a peer-reviewed framework for introducing first year students to online learning environments, which focuses on a range of areas, such as: assessment and communication of expectations relating to online learning; strategies for inducting and advising students about online learning environments; adoption, design, organisation and support of relevant technologies; and professional development for academic staff.

These outcomes suggest that the SIEL project deserves further consideration by national policy-makers and requires further participation from the Australian research team because of the opportunities it offers to improve cross-sectoral standards, connections and communication in the Australian education system. Furthermore, at the time of writing this final report, members of the SIEL working group have re-evaluated the project's completion date to May 2010. In light of this, and in order to capitalise on the work done by the Australian research team on the IMS's SIEL project, it is recommended that an Australian research team continue to be involved in the project for a second stage between 1 March and 31 December 2009 – and possibly for a third stage from 1 January to 30 June 2010.

As a second stage, we recommend the project be twofold. One part of the project should further pursue the dissemination and consultation process in the Australian context started in stage 1 of the project. A second part of the project should seek to adapt the BPA framework or guidelines for best practice in online education in the higher education sector for the use of ICT in the Australian school sector.

List of Acronyms

ACODE:	Australasian Council on Open, Distance and E-Learning
AICTEC:	Australian Information and Communications Technology in Education Committee
BPA:	Best Practice Area
GIHE:	Griffith Institute for Higher Education
GU:	Griffith University
ICT(s):	Information and Communication Technologies
IHE:	Institution of Higher Education
IMS:	IMS Global Learning Consortium
OUA:	Open Universities Australia
RA:	Research Assistant
SIEL:	Student Induction to E-Learning
TEFL:	Technology-Enabled Flexible Learning
TRS:	Targeted Retention System

Table of Contents

EXECUTIVE SUMMARY	1
LIST OF ACRONYMS	2
PROJECT OUTLINE	4
PURPOSE	4
CONTEXT	4
ISSUES	4
METHODOLOGY	5
PROJECT OUTPUT.....	8
MILESTONES	8
FINDINGS	9
CONSULTANCY DELIVERABLES	13
RECOMMENDATIONS.....	14
AUSTRALIAN HIGHER EDUCATION SECTOR CONSULTATION AND DISSEMINATION OF THE SIEL GUIDELINES	14
DEVELOPMENT AND ADAPTATION OF THE SIEL GUIDELINES TO THE AUSTRALIAN SCHOOL SECTOR	16
REFERENCES	19

Project Outline

Purpose

The Student Induction to E-Learning (SIEL) project's main aim was to develop a better understanding of the teaching and learning opportunities and constraints that exist in designing and delivering an effective, efficient and engaging online education environment. In that context, the aim is also to understand the optimal ways of preparing first year students for adapting to university e-learning environments. In addition, the project aimed to complement and enhance existing resources, including the benchmarks for the use of technology in teaching and learning developed by the Australasian Council on Open, Distance and E-Learning (ACODE).

The range of best practices, identified in relation to first year students' early experiences with information and communication technologies (ICTs) in university e-learning environments, have led to the establishment of a peer reviewed framework of Best Practice Areas (BPAs) for introducing first year students to online learning environments. The BPAs provide a framework to enable students and institutions of higher education (IHEs) to level-set and establish their respective expectations for academic success, as well as address issues of completion, retention and persistence during this most vulnerable phase of the student life cycle.

Context

The SIEL project – formerly known as Technology-Enabled Flexible Learning (TEFL) – was initiated by IMS Global Learning Consortium (IMS), an international non-profit organisation that creates standards and best practices for the development and adoption of technologies that enable high quality, accessible and affordable learning experiences in higher education. SIEL is an international research project with contributing members from the US, UK, Korea, New Zealand and Australia.

The Australian research team consists of members of the Griffith Institute for Higher Education (GIHE). GIHE is a provider of evidence-based professional development and resources for academic staff at Griffith University (GU). GIHE is also actively engaged in research in higher education. GIHE staff work closely with GU academic and senior managers to address strategic priorities in learning and teaching. The USQ Link Affiliates team provides specialist strategic, technical and project management services to the Australian government in the use of e-learning and e-research standards. GIHE and Link Affiliates' contribution to the project was enabled through funding from The Australian Commonwealth Department of Education Employment and Workplace Relations (DEEWR) under the Digital Education Revolution (DER), a project managed by the Link Affiliates Team, the Australian Digital Futures Institute (ADFI) within the Division of Academic Information Services (DAIS), University of Southern Queensland.

Issues

The first year experience is pivotal in determining whether university students will persist with their studies, and engage with peers, faculty, and the learning environment (Krause, Hartley, James & McInnis, 2005) or whether their early

experiences with e-learning will be a barrier to retention. Indeed, there are real concerns about the high attrition rates (Carr, 2000, Diaz, 2002, Dietz-Uhler, Fisher & Han, 2008, DiMario & Wolverson, 2006, Frankola, 2001, Scalese, 2001). The last decade has witnessed a rapid growth in the use of ICTs for teaching and learning in both fully online and blended environments. With this growth comes the imperative to ensure that the embedding of ICTs in curricula is characterised by best practice in curriculum design and pedagogy, addressing student and faculty needs, and enhancing policies and practices.

A recent study of Australian first year students (Kennedy et al., 2008) revealed that the extent to which students had embraced a range of emerging technologies, such as blogs or RSS feeds, varied significantly. The findings highlight the considerable danger in assuming that first year students are capable of employing a range of technologies in an informed way to enhance their learning at university. Similarly, a recent UK study of first year students (IPSOS MORI, 2008) found a notable disparity between the technologies that students were comfortable using for learning purposes (e.g. learning management systems), as compared with those with which they were socially familiar, yet not comfortable using in educational contexts (e.g. Web 2.0 technologies). These findings challenge the myth of the 'digital native' and further challenge practitioners and policy makers to ensure that the use of ICTs to enhance learning is underpinned by evidence-based best practice. They also show that ICTs play an important role in students' early engagement opportunities and experiences, especially in e-learning settings (Krause & Coates, 2008).

Notwithstanding, recent research also supports the fact that the effective use of technology in learning, teaching and curriculum design requires a better understanding of the expectations of students, staff and institutions, along with preparation and induction of the use of technology to foster positive learning and student outcomes (Gilbert, Morton & Rowley, 2007, IPSOS MORI, 2007, 2008, Owen & Moyle, 2008, Sharpe & Benfield, 2005, Yorke, 2008, Yorke & Longden, 2008).

Methodology

The SIEL working group members drew on a range of methods to develop the BPA framework. These methods included an exhaustive review of the relevant literature as well as the use of the significant experience of the group members in the field of online education and a consultation process through presentations of the framework at meetings, conferences and seminars. In addition to this, the Australian research team also gathered supporting data from a series of interviews with academics and executives involved in online education in Australia.

Literature review

A literature search was conducted by the Australian research team through Google Scholar, Google Books, Griffith University's library catalogue and Education related databases such as ProQuest, Informit and EBSCO. Using a range of keywords – including 'e-learning', 'online learning', 'online education', 'hybrid learning', 'blended learning', 'retention', 'attrition', 'higher education', 'tertiary education', 'best practice', 'framework', 'good practice', etc. – one hundred and sixty six articles, reports, books and book chapters as well as websites were located, analysed and

stored. This list of literature was further enhanced by another fifty seven pieces of literature located and analysed by other members of the SIEL working project.

The literature was then reviewed by first coding the piece of literature according to the industry sector, the type of online experience discussed, the BPA(s) it related to, the actors (e.g. the students, institution, etc.) and the phase (i.e. expectations, induction and/or preparation). Second, it was then summarised and analysed in terms of the author(s)'s questions posed, assumptions, arguments.

The review process was carried out using EndNote X, a software tool for managing bibliographic references and publishing bibliographies.

Consultation / presentation

Comments were sought on the BPAs through presentations made at conferences worldwide. More specifically, the Australian research team presented the SIEL project and its matrix during a 20 minute presentation entitled 'Technology-Enabled Flexible Learning (TEFL) – Developing Best Practices for Prospective and New Student Introduction to E-Learning' at the IDEA conference in November 2008. The presentation was made as part of a session on 'IMS Global Learning Consortium Update'. Conference delegates' comments were gathered during the conference, reported back to the SIEL working group and acted on as deemed appropriate by the group.

Also as part of stage 1 of this project, a presentation entitled 'E-learning and the first year experience: A framework for best practice' is planned for the EDUCAUSE Australasia 2009 conference in May.

Comments were also sought through formal and informal conversations between the project leader and representatives of various stakeholder groups both nationally and internationally.

Interviews

This part of the project was essentially an initiative of the Australian research team. The interviews targeted GU staff engaged in the design and delivery of courses for Open Universities Australia (OUA). Participation in the project was on a voluntary-basis. Initial contact was made with GU's OUA academic staff during an internal forum early in November 2008. A follow-up email was then used to recruit volunteers. Interviews were conducted and email questionnaires were sent out between November 2008 and January 2009. The data from nine academics and

executives was thus gathered during thirty to forty-five minutes one-on-one, face to face or phone interviews as well as through an email questionnaire. Interviews were conducted with GU's OUA online course directors, convenors and tutors.

Interviewees were asked a series of predominantly open-ended questions about their perceptions of opportunities and constraints regarding the design and delivery of online courses. More specifically, the questions pertained to interviewees' teaching responsibilities, their needs and expectations, the ways in which students were supported in making informed choices about their study options, the ways in which staff ensured technology wasn't a barrier to their teaching and students' learning, the ways in which staff ensured the effective integration, motivation and engagement of

students with the subject, other students and staff as well as staff's pedagogical underpinnings.

Once de-identified, to maintain the informants' confidentiality, the interview and survey data was collated, aggregated and loaded into NVIVO 8, a widely-used qualitative analysis software to conduct a pre-analysis of the data allowing patterns and themes to emerge. The data was then further organised and analysed using the BPA framework. The results of this analysis were also compared to the data gathered from an extensive review of the literature on current practices and theories about online, distance and e-learning in higher education mostly from the US, Australasia and the UK.

Although the survey was carried out with limited time and resources, its original intent was for it to be used as a test instrument rather than as a definitive survey of the population of academic and executive staff engaged in online education in Australian higher education. Therefore, regardless of the fact that the survey was based on a small unrepresentative sample of the population, the findings have been most informative because they support the findings from the literature review as well as validating the BPA framework.

Project Output

Milestones

September 2008	October	November	December	January 2009	February
1 Sep. project begins. Dr. McEwen appointed					28 Feb. Stage 1 of the project ends.
3 & 17 Sep., teleconference with IMS's SIEL working group members. 2, 4, 9, 18 & 23 Sep., meetings between Link Affiliates and GIHE.	1, 15 & 29 Oct., teleconference with IMS's SIEL working group members. 7 & 21 Oct., meetings between Link Affiliates and GIHE.	12 & 26 Nov., teleconference with IMS's SIEL working group members. 4 & 18 Nov., meetings between Link Affiliates and GIHE.	10 Dec., teleconference with IMS's SIEL working group members. 9 Dec., meeting between Link Affiliates and GIHE.	7 & 21 Jan., teleconference with IMS's SIEL working group members. 30 Jan., meeting between Link Affiliates and GIHE.	5 & 12 Feb., teleconference with IMS's SIEL working group members. 12 Feb., meeting between Link Affiliates and GIHE.
Search and review of literature					
	GU Ethics application submitted and approved	GU OUA academic staff data gathering and analysis			
Assigned BPA3	Developing Best Practices in Learning et the Learner			Revised matrix of BPAs	
		Dr McEwen presented at the IDEA 2008 conference in Melbourne, 12-13 Nov.	Prof Krause attended the Sloan conference in Orlando (US), 5-7 Nov.		

Findings

Summary of key findings: Literature review and interview data analysis

As McLoughlin and Visser (2003) contend, although there is a range of meanings and benchmarks in e-learning, there is some consensus emerging as to what constitutes quality in e-learning. Broadly speaking, the consensus is that there needs to be a change in focus away from technology towards students (Bilham, 2006, Goodyear & Ellis, 2008, Mandell, Sorge & Rusell cited in Wang, 2008).

Although, overall, we agree with this statement, we would also argue that there is a need to design e-learning environments that are more holistic, and go beyond pedagogical considerations, to also take socio-cultural, technological and managerial considerations into account. We are not making a case for a return to a design that is driven by “technical and commercial imperatives” (Bilham, 2006, p. 2). Rather, we are arguing for a balanced approach that is not only focused on the technology used and the economic imperatives that drive universities in their current competitive and global approach to teaching and learning, but one that also focuses on students’ needs and expectations, not as consumers but as learners, underpinned by participatory and constructivist educational principles.

From a pedagogical/andragogical point of view there is an understanding that the design and organisation of online courses needs to be student-centred, this means different things to different people. The meanings range from students’ self-evaluation, to students’ self-direction and critical learning. It changes according to whether students are understood as consumers or agents in their own learning, which implies a different power relation and investment in the learning experience and with IHEs (Boud, 2006).

Educators need to develop an approach that draws on existing pedagogical and instructional design models and theories to design effective online learning systems and experiences (Siragusa, 2002). They also need to be skilled and committed to teaching online and be good listeners, observers, communicators. Educators should also be prepared to be involved/participate in discussions online and be able to ‘read between the lines’ of students’ postings, as an informant said (Informant B). It also means that in order to implement best practices in online education, not only does the design and delivery need to be informed by theories of productive pedagogy, it also needs to be contextualised (Maroulis & Reushle, 2005).

The students’ social and cultural context needs to be taken into consideration in their learning experience. This requires educators connecting inside and outside of the course context or the content and formal learning ‘space’, may it be by using technology that might be considered outside the educational scope, for instance using social networking sites such as Facebook, or by encouraging students to share their broader learning, professional and personal experiences. However, this does not mean that the social distance between students and staff should be eliminated. It should be noted though, that while students are familiar with social networking sites, most of them find the use of these sites in a learning environment unsubstantiated, at best, and at worst, an infringement of their privacy. The use of social networking sites in a formal learning environment is more readily accepted when suggested by peers (IPSOS MORI, 2008). This sharing of background information is also useful to address the cultural gap that often exists between national and international students

in areas such as language and developing an understanding of assessment requirements and criteria (Hannon & D'Netto, 2007).

In this context, it is also important to be aware and to acknowledge that teaching and learning in general, and teaching and learning online, in particular, requires a collective effort (Sheely, Veness & Rankine, 2001). This requires educators to provide a supportive learning environment by building relationships as well as by connecting into and reinforcing the community of learners. Another aspect of building community, requires IHEs and their staff to create a social presence online. As Wheeler writes “[s]ocial presence is a vitally important component of any learning situation and doubly so in electronically mediated contexts. [However] [s]ocial presence is a perceived effect, and will vary for each student depending on their individual dispositions” (2005, p. 6). This means that educators also need to be trained into “getting on collegially” (Informant E, 2008).

Besides pedagogical and socio-cultural considerations, support and access to technology play an important role in creating a positive learning experience (Delialioğlu & Yildirm, 2007). Educators and IHEs need to be alerted to the fact that although a great majority of students have access to a variety of technology – from mobile phones to laptops – and access to broadband Internet, there is little evidence to support claims of a generation of technology “savvy” students (Bennett, Maton & Kervin, 2008; Kennedy, et al., 2006). Further, “while first year students might use technology in a range of ways and may, apparently, be digitally literate, we cannot assume that being a member of the 'Net Generation' is synonymous with knowing how to employ technology-based tools strategically to optimise learning experiences and outcomes in university settings” (Kennedy et al., 2006, p. 16).

Thus, we find that students are likely to remain in a course if they are satisfied with the course and can commit time to their studies (Herbert, 2008). Some key elements that can ensure students’ satisfaction include: providing a cohort and team-based learning experience with extensive faculty feedback and interaction to address isolation concerns; providing application based content and activities; and helping students meet expectations for personal and professional growth. It is also crucial to offer a well-managed program and ensure that faculty members are both interested and competent in teaching in the online learning environment (Bocchi, Eastman & Swift, 2004).

As Chickering and Erhmann (2008) contend, we too conclude that a focus on providing and developing technology is not enough to foster best practices in online education. E-learning environments need to be underpinned by the same principles of effective pedagogy and curriculum design as any other learning environment. Thus, if the focus of online education is on the student then the pedagogical principles are no different to those applied in a face to face environment. The underlying pedagogical principles remain the same. They also need to be made explicit in the same way as they might be in face to face learning environments. What motivates learners to be effective and efficient learners and to engage with the learning activities and material, are principles that apply to all and any learning environments (Keller, 2008). These principles also apply to blended learning environments.

It is widely acknowledged that e-learning is not necessarily a new approach to learning, teaching and curriculum design, nevertheless, it does offer new tools to

achieve existing learning outcomes or to enhance more conventional modes of learning (Mayes & de Freitas, 2007).

BPA framework

A framework of best practices or standards for retaining online students was one of the main outcomes of the project. Though the framework emerged from an exhaustive review of the literature and case studies of online education practices as well as based on the expertise of the members of the SIEL group, and especially Stephen Marshall's e-learning maturity model (eMM) (2007), the overall structure of the framework was also influenced by Grainne Conole's (2004) four aspects of the e-learning environment. Marshall devised the eMM, an analytical framework to help higher education institutions assess their readiness to implement e-learning programmes, which focuses on four aspects of e-learning: process areas, processes, dimensions and practices. Conole (2004) argues for the need to analyse ways of ensuring effective use of technologies that enhances students' learning experiences in relation to four aspects of e-learning, which she defines as: pedagogical, organisational, technical and socio-cultural.

The detailed framework is yet to be finalised. Following is the basic structure or hierarchy of areas and components, as at February 2009:

BPA1 - Assessment and communication of expectations

- BPA1.1 Identification of rationale for expectations
- BPA1.2 Incorporation of expectations in formal systems and processes
- BPA1.3 Setting realistic expectations
- BPA1.4 Communicate expectations to students

BPA2 - Recruitment and advisement

- BPA2.1 Academic and professional advisement
- BPA2.2 Assessment of readiness and appropriateness for e-learning
- BPA2.3 Management plan for students at-risk

BPA3 – Learning and the learner

- BPA3.1 Pedagogical underpinning
- BPA3.2 Learner-centred
- BPA3.3 Learner engagement and community building
- BPA3.4 Designed for retention
- BPA3.5 Assessment tasks, feedback and evaluation

BPA4 – Functional technology

- BPA4.1 Definition and management of minimum expectations for software and hardware
- BPA4.2 Front-end interface and functionality
- BPA4.3 Back-end systems and functionality

BPA5 – Technology literacy and support

- BPA5.1 Minimal initial competency and access
- BPA5.2 Student training and support
- BPA5.3 Faculty provisioning into the learning community and all that entails
- BPA5.4 Faculty members' technical skills training
- BPA5.5 Faculty e-learning pedagogy

BPA6 – Non-technical online student support services

- BPA6.1 Tutoring (professional and peer)
- BPA6.2 Textbooks
- BPA6.3 Registration
- BPA6.4 Financial Services
- BPA6.5 Personal counselling
- BPA6.6 Transcript and records
- BPA6.7 Learning resources and library
- BPA6.8 Introduction to support teams and primary contact
- BPA6.9 Student governance
- BPA6.10 Time, workload and information management
- BPA6.11 Remediation

BPA7 – Management

- BPA7.1 Economic imperative
- BPA7.2 Legal and historical context
- BPA7.3 Policies and mission statements
- BPA7.4 Human resources and division of labour

Consultancy deliverables

C1 Participate in IMS meetings

GIHE participated in IMS's working group by teleconference meetings on a fortnightly basis. Also, Professor Krause attended and contributed to the IMS meetings while attending the Sloan conference in Orlando, 5-7 November 2008.

C2 Contribute to the documentation of the outputs

GIHE contributed to the documentation of the outputs of international work in this field, working on developing BPA3 and revising the matrix of BPAs.

C3 Provide feedback to the Australian education community

GIHE has provided feedback to the Australian education community especially through conference presentations and professional networking on behalf of the project leader (see C5 for further details).

C4 Research Australian practice in student retention

GIHE conducted research in Australian practices in student retention as relevant to the activities of the working group/s; by carrying out a search and review of the relevant literature and monitoring the activities of the IMS's Targeted Retention System (TRS) project.

C5 Promote the outputs of the SIEL project

GIHE has promoted the outputs of the IMS SIEL project by presenting at a number of conferences:

- IDEA 2008, Melbourne, 12-13 December 2008; and
- EDUCAUSE Australasia 2009, Perth, 3-6 May 2009.

GIHE has also promoted the outputs of the project through discussions between the project leader and representatives of various stakeholder groups nationally and internationally.

C6 Participate in e-Framework meetings

This has not been applicable as GIHE was not invited to participate in any e-Framework meetings analysing, documenting and contributing to international interoperability agendas.

C7 Provide reports

GIHE provided fortnightly verbal progress reports to Kerry Blinco (Director Strategy, Link Affiliates, University of Southern Queensland) and a final report to DEEWR via the University of Southern Queensland and Link Affiliates.

Recommendations

IMS's SIEL working group has revised the timeline for the delivery of the final set of BPAs to May 2010. To capitalise on the work done by the Australian research team on IMS's SIEL project, a recommendation has been made that an Australian research team continue to be involved in the project from 1 March to 31 December 2009. As a second stage, the project could be twofold. One part of the project could further pursue the dissemination and consultation process in the Australian context started in stage 1 of the project. A second part of the project could seek to convert the BPA framework or guidelines for best practice in online education from a higher education sector to the use of ICT in the Australian school sector.

Australian higher education sector consultation and dissemination of the SIEL guidelines

Though the Australian education sector is a pioneer in distance and online education, online student attrition remains as much of an issue here as it is in the US (De Fazio & Crock, 2008). There is a need for a better understanding of ways in which to engage and retain students until completion of online courses.

Because IMS's SIEL working group has revised the timeline for the delivery of the final set of BPAs to May 2010, it is recommended that the Australian contingent remains involved in the project to see the framework to completion¹. Part 1 of stage 2 of the SIEL project would then focus on providing further input from the Australian sector of higher education to the group and help finalise an internationally relevant set of guidelines for best practices in online education in higher education that could then be disseminated Australia-wide.

The dissemination and adoption of these guidelines has several implications for IHEs. It has the potential to make the delivery of online courses more cost-effective by enabling IHEs to target the kind of student more likely to complete online courses as well as increase students' level of satisfaction. It also has the potential to enable a better understanding of how to prepare school students for an online learning experience at higher education as well as school level, thereby further reducing the chances of mismatched expectations between students and IHEs. Moreover, it has the potential to increase levels of interoperability between universities as well as across sectors.

Focus

In this part of stage 2 of the project, the focus would shift from a sole concern for improving retention levels, to include a focus on the need to establish a set of guidelines that covers the spectrum of components of online education and not only the pedagogical aspects of online teaching and learning in isolation from the

¹ As this proposal is for a stage 2 of the project from 1 March to 31 December 2009, in accordance to the SIEL working group's revised timeline of May 2010 for the finalisation of the BPAs, this might require an extended stage 2 from 1 March 2009 to June 2010 or additional stage, or stage 3, from 1 January to 30 June 2010.

technical, management and socio-cultural aspects of online teaching and learning. Furthermore, there is a need to provide standardised guidelines that can be applied across the higher education section.

Holistic approach

In a recent Australian study about the ways in which technology can change students' ways of learning, Goodyear and Ellis (2008) argue that in the debate about the use of technology in teaching and learning, there needs to be a change in focus away from technology towards students because ultimately they have a key role to play in their learning outcome. They argue that there is a need to design learning environments that are more holistic, "it no longer seems very productive or intellectually defensible to separate out the technological aspects of learning, teaching and education design" (Goodyear & Ellis, 2008, p. 141). When designing online learning environments, consideration needs to be given to the students as individuals, the level and type of activity students are expected to engage in, the expected outcome, the tools used and the tasks to be performed. This provides an integrative rather than comparative and innovative approach to the use of technology in education.

Standardised guidelines

Although online education environments should be thought of as evolving processes rather than static, quality online learning environments need a certain level of formalisation in order to maximise their efficacy. This includes a greater re-use of systems and sharing of information and resources (Britain, 2007) as well as avoidance of duplication of information and resources, facilitation of the evaluation, maintenance and support of systems (Sheely et al., 2001) and increase communication and interoperability, initially within and between universities and ultimately across sectors.

The benefits of such formalisation and collaboration for the Australian education sectors are numerous. As Croger Associates (2007) argue "[s]ome of these benefits are driven by national policy priorities such as the goal of improved learning outcomes. Others are related to practical requirements including the opportunities to achieve cost efficiencies" (p. 5).

To support this kind of formalisation and collaboration, there is a need to provide national standards in online education (Cielens, Booth & Hyde, 2002).

Method

This part of the project would be supported by a half-time research assistant (RA) with the duty to plan, manage and/or implement activities pertaining to:

- Monitor IMS's SIEL working group and any other relevant IMS's working group – such as TRS – activities and participate in SIEL group meetings and activities as necessary.
- Disseminate information pertaining to the guidelines through articles and at seminars and conferences relevant to the higher education and online education sectors in Australia.
- Consult stakeholders through the organisation of industry round-tables in several states, as well as through the use of the project WIKI to contextualise and help finalise the BPAs.

- Lead the way in converting the current BPA frameworks into a conventional standards format.
- Reference implementation of the guidelines at an online university in Australia, for instance OUA.

Outcome

The project would lead to:

- The finalisation of the draft BPAs;
- A heightened awareness of the BPAs/guidelines and how to implement them in Australia;
- A WIKI dedicated to the SIEL BPAs;
- The input and edits of the guidelines by the Australian higher education sector; and
- A long-term engagement with ACODE and the broader higher education sector.

Development and adaptation of the SIEL guidelines to the Australian school sector

Australian policies indicate that “preparing students for their future careers and lifestyles requires learning with technologies and this includes the ability to access, use and interact with digital information and networks in thoughtful ways” (Owen & Moyle, 2008, p. 4).

At a policy and technology level, Australia has been a leader in ICT in education. In the class room, however, there is still confusion and uncertainty as to how to best integrate and use ICT. Some of the reasons for this are: the resistance to educational change (linked to what constitutes appropriate or acceptable teaching practice); the slow integration of computers into schools; teachers' low level of classroom management strategies and knowledge of educational ICT applications; the lack of access to broadband; and/or having to deal with the security issue (Elliott, 2004).

The digital revolution in schools aims to address these issues by contributing to a “sustainable and meaningful change to teaching and learning in Australian schools that will prepare students for further education, training and to live and work in a digital world” (“The digital education revolution”, 2008).

Part 2 of stage 2 of the project would support the digital revolution program in doing so by developing a framework of best practices that enables and enhances the effective, engaging and efficient integration of ICT in schools to help prepare students for a technology-rich future.

Focus

When applying lessons learnt from the SIEL project to the school sector the project might no longer have a focus on attrition and retention but on preparing students for a technology-enabled flexible e-learning environment and on how to introduce effective, engaging and efficient use of ICT in schools.

Preparing students for a technology-rich future

In the near future, most workplaces will require workers to efficiently and effectively engage with a wide range of technologies. This requires preparing students to be independent e- and m-learners as well as being highly literate in the use of a range of hardware and software.

Though most students are being inducted into the use of technology from a young age, their technical skills are somewhat overestimated and over generalised (Kennedy et al., 2006, Vaidhyanathan, 2008). This is an issue on two accounts: first because it creates further discrimination between students as Vaidhyanathan writes “[t]alk of a 'digital generation' or people who are 'born digital' wilfully ignores the vast range of skills, knowledge, and experience of many segments of society. It ignores the needs and perspectives of those young people who are not socially or financially privileged. It presumes a level playing field and equal access to time, knowledge, skills, and technologies” (2008, p. 2); and second because “[o]nce we assume that all young people love certain forms of interaction and hate others, we forge policies and design systems and devices that match those presumptions. By doing so, we either pander to some marketing cliché or force an otherwise diverse group of potential users into a one-size-fits-all systems that might not meet their needs” (Vaidhyanathan, 2008, p. 2).

This early preparation also has consequences for students’ transition to post-school education. By preparing students for a technology-rich future at school it not only prepares students to be able to meet the needs of the workplaces of the future, but it also enables universities to deliver on these future expectations as well as offers greater possibilities for communication and connections across education sectors.

Introducing ICT-enabled learning in schools

In order to prepare students for a technology-rich future, there needs to be greater and more systematic use of ICT in schools. According to informal conversations with Peter Croger, a highly respected consultant in the school sector specialising in interoperability in schools, this requires an overview of the issues in introducing technology-enabled learning in schools.

One of the main issues in introducing ICT-enabled learning in schools is understanding not only the technical skills, hardware and software required but also the specific pedagogical underpinnings required to engage students with ICT. Effective, engaging and efficient learning and teaching requires a pedagogical approach that emphasises the place and role of the learner in her/his own learning.

Though the rhetoric around online education promotes its “capacity for shifting the time and place of the educational interaction” (Anderson, 2008, p. 273) and making links with the world outside of the classroom (Hayes, Schuck, Segal, Dwyer & McEwen, 2001), the reality in schools is not yet consistent with the rhetoric. Indeed, Hayes et al found that “[i]n a large proportion of the classrooms we visited, computer-based learning was being integrated in ways that afforded less opportunity for higher order thinking, deep knowledge and substantive conversation than classrooms where it was not being integrated” (Hayes et al., 2001, p. 16). There is a need to find the right balance between face-to-face and e-learning.

Method

Part 2 of stage 2 of the project would be supported by a half-time RA. The RA's duties might include planning, managing and/or implementing activities such as:

- Managing the implementation of the existing SIEL BPAs with the higher education sector through engagement and consultation with such key stakeholders as ACODE (extension of Stage 1).
- Conducting a literature review that focuses on schools ICT and blended learning.
- Reworking SIEL's BPAs according to the literature review and other existing frameworks so as to develop a school-level BPA matrix.
- Identifying Australian school sector stakeholders that might benefit from these BPAs and determine the implications for them of applying (or not applying) this framework. This could then lead to:
 - Liaising with Link Affiliates to secure access to their contacts in the Australian school sector; and
 - Liaising with key stakeholder groups such as the Australian Information and Communications Technology in Education Committee (AICTEC).
- Working with schools in converting the BPAs by carrying out a case study of their implementation in one leading ICT schools such as Ferney Grove State High School (Elliott, 2004) and one lagging or average in ICT integration;
- Organising a series of state-based (QLD and VIC) round-tables/seminars to discuss the BPAs and their implementation with other relevant parties – e.g. government officials, school executives, AICTEC.

Outcome

This would lead to:

- Engagement with the higher education sector and key stakeholders (e.g. ACODE) in relation to the implementation of the SIEL BPAs for first year university students (i.e. an extension of Stage 1);
- Engagement with key stakeholders in the school sector, such as AICTEC, as part of the consultation and development of BPAs for school-level induction to e-learning;
- A heightened awareness of the BPA guidelines and their applicability to the school sector in Australia;
- Increased cross-sectoral standards, connections and communication; and
- Facilitated transition from school to university life.

References

- Anderson, T. (2008). Teaching in an online learning context. In T. Anderson & F. Elloumi (Eds.), *Theory and practice of online learning* (pp. 273-294). Athabasca: Athabasca University.
- Bennett, S., Maton, K., & Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5), 775-786.
- Bilham, T. (2006). Creating and sustaining online communities of practice, *AISHE Conference 2006*: All Ireland Society for Higher Education (AISHE).
- Bocchi, J., Eastman, J. K., & Swift, C. O. (2004). Retaining the Online Learner: Profile of Students in an Online MBA Program and Implications for Teaching Them. *Journal of Education for Business*, 79(4), 245-253.
- Boud, D. (2006). 'Aren't we all learner-centred now?': The bittersweet flavour of success. In P. Ashwin (Ed.), *Changing higher education: The development of learning and teaching* (pp. 19-32). London: Routledge.
- Britain, S. (2007). Learning design systems. In H. Beetham & R. Sharpe (Eds.), *Rethinking pedagogy for a digital age: Designing and delivering e-learning* (pp. 103-114). London & New York: Routledge.
- Carr, S. (2000). As Distance Education Comes of Age, the Challenge Is Keeping the Students. *Chronicle of Higher Education*, 46(23), A39-41.
- Chickering, A. W., & Erhmann, S. C. (2008). Implementing the Seven Principles: Technology as Lever.
- Cielens, M., Booth, R., & Hyde, P. (2002). Guide to good practice in AQTF auditing: The online learning context: Australian National Training Authority.
- Conole, G. (2004). E-Learning: The hype and the reality. *Journal of Interactive Media in Education*, 12, 1-18.
- Croger Associates. (2007). *Research Report: Interoperability Standards Across the Australian Education & Training Sector*. Canberra: Australian Information and Communications Technology in Education Committee (AICTEC).
- De Fazio, T., & Crock, M. (2008). Enabling learning, addressing retention: supporting students via online tutorials with Smarthinking, *ASCILITE 2008*. Melbourne: Australasian Society for Computers in Learning in Tertiary Education (ASCILITE).
- Delialioglu, O., & Yildirm, Z. (2007). Students' perceptions on effective dimensions of interactive learning in a blended learning environment. *Educational Technology & Society*, 10(2), 133-146.
- Diaz, D. (2002). Online Drop Rates Revisited. *The Technology Source*.

- Dietz-Uhler, B., Fisher, A., & Han, A. (2008). Designing Online Courses to Promote Student Retention. *Journal of Educational Technology Systems*, 36(1), 105-112.
- The digital education revolution. (2008). Retrieved 09/01/09, 2009, from <http://www.deewr.gov.au/Schooling/DigitalEducationRevolution/Pages/default.aspx>
- DiMario, D., & Wolverton, M. (2006). Integrating Learning Communities and Distance Education: Possibility or Pipedream? *Innovative Higher Education*, 31(2), 99-113.
- Elliott, A. (2004). Cultural change needed to exploit ICT in schools, *Information Age* (Vol. 16/04).
- Frankola, K. (2001). Why online learners drop out: High dropout rates are e-learning's embarrassing secret. *Workforce*, 53-60.
- Gilbert, J., Morton, S., & Rowley, J. (2007). e-Learning: The student experience. *British Journal of Educational Technology*, 38(4), 560-573.
- Goodyear, P., & Ellis, R. A. (2008). University students' approaches to learning: Rethinking the place of technology. *Distance Education*, 29(2), 141-152.
- Hannon, J., & D'Netto, B. (2007). Cultural diversity online: student engagement with learning technologies. *International Journal of Educational Management*, 21(5), 418-432.
- Hayes, D., Schuck, S., Segal, G., Dwyer, J., & McEwen, C. (2001). *Net Gain?: The integration of computer-based learning in six NSW government schools, 2000*. Sydney: Change and Education Research Group, Faculty of Education, The University of Technology, Sydney (UTS).
- Herbert, M. (2008). *Staying the Course: A Study in Online Student Satisfaction and Retention*.
- IPSOS MORI. (2007). *Student expectations study: Key findings from online research and discussion evenings held in June 2007 for the Joint Information Systems Committee* (Briefing paper). Bristol: Joint Information Systems Committee (JISC).
- IPSOS MORI. (2008). *Great expectations of ICT: How higher education institutions are measuring up* (Research). London: Joint Information Systems Committee (JISC).
- Keller, J. M. (2008). First principles of motivation to learn and e³-learning. *Distance Education*, 29(2), 175-185.
- Kennedy, G., Krause, K.-L., Judd, T., Churchward, A., & Gray, K. (2006). *First year students' experiences with technology: Are they really digital natives?* (Preliminary report findings). Melbourne: Centre for Higher Education, The University of Melbourne
- Biomedical Multimedia Unit, Faculty of Medicine, Dentistry and Health Sciences, The University of Melbourne.

- Krause, K., & Coates, H. (2008). Students' engagement in first-year university. *Assessment & Evaluation in Higher Education*, 33(5), 493-505.
- Krause, K., Hartley, R., James, R., & McInnis, C. (2005). *The first year experience in Australian universities: Findings from a decade of national studies* (Research report). Melbourne: Centre for Higher Education, The University of Melbourne.
- Maroulis, J., & Reushle, S. (2005). Blurring of the boundaries: Innovative online pedagogical practices in an Australian Faculty of Education, *17th Biennial Conference of the Open and Distance Learning Association of Australia*. Adelaide: Open Distance Learning Association of Australia (ODLAA).
- Marshall, S. (2007). *E-learning maturity model: Process descriptions* (Draft). Wellington: University of Wellington.
- Mayes, T., & de Freitas, S. (2007). Learning and e-learning: The role of theory. In H. Beetham & R. Sharpe (Eds.), *Rethinking pedagogy for a digital age: Designing and delivering elearning* (pp. 13-25). London & New York: Routledge.
- McLoughlin, C., & Visser, T. (2003). Quality e-learning: Are there universal indicators?, *16th Open and Distance Learning Association of Australia*. Canberra: Open Distance Learning Association of Australia (ODLAA).
- Owen, S., & Moyle, K. (2008). *Students' voices: Learning with technologies*: Australian Information and Communications Technology in Education Committee (AICTEC).
- Scalese, E. R. (2001). What Can a College Distance Education Program Do To Increase Persistence and Decrease Attrition? *Journal of Instruction Delivery Systems*, 15(3), 16-20.
- Sharpe, R., & Benfield, G. (2005). The student experience of e-learning in higher education: A review of the literature. *Brookes eJournal of Learning and Teaching*, 1(3).
- Sheely, S. D., Veness, D., & Rankine, L. (2001). Building the web interactive study environment: Mainstreaming online teaching and learning at the University of Western Sydney. *Australasian Journal of Educational Technology*, 17(1), 80-95.
- Siragusa, L. (2002). Research into the effectiveness of online learning in higher education: Survey findings, *Western Australian Institute for Educational Research Forum*. Edith Cowan University: Western Australian Institute for Educational Research (WAIER).
- Vaidhyanathan, S. (2008). Generational myth: Not all young people are tech-savvy, *Chronicle of Higher Education* (Vol. 55, pp. B7).
- Wang, Q. (2008). A generic model for guiding the integration of ICT into teaching and learning. *Innovations in Education and Teaching International*, 45(4), 411-419.
- Wheeler, S. (2005). Creating social presence in digital learning environments: A presence in mind?, *TAFE Conference*. Mooloolaba, QLD: TAFE Queensland.

Yorke, M. (2008). Delights and disappointments: Surveys of students' experience as indicators of expectations, *Annual Staff Conference, University of Ulster*. Londonderry, Northern Ireland: University of Ulster.

Yorke, M., & Longden, B. (2008). *The first-year experience of higher education in the UK: Final report*. York: The Higher Education Academy.