



**Case Study Report:
Student Extranet**

Gordon Institute of TAFE



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Case Study development

The Computing Studies department of the Gordon Institute of TAFE have designed and developed a *Student Extranet* initiative. With a strong emphasis on flexible delivery, the extranet has been designed to provide an online web indexed repository for delivery of curriculum resources, course outline and Unit of Competency information to students, although many teachers are also using this valuable resource on a regular basis.

The *Student Extranet* is available both internally and externally to the Institute. The extranet provides curriculum resources to facilitate self-directed learning for students from home or within the workplace, providing ready access to learning by existing workers.

Simple processes are used for publishing and maintenance of resources to enable staff with basic IT skills to participate in curriculum content development and publishing. With content including *PowerPoint* presentations, assignments, laboratory exercises, web-based curriculum, web links and competency guides, a breadth of information is typically integrated into a single learning plan for each competency of a course. Hence, the extranet provides an indexed storage framework that mirrors course structures and meets the Australian Quality Training Framework (AQTF) requirements for a resource master list.

The benefits of the *Student Extranet* include simple navigation and ease of locating diverse resources; remote delivery for self-directed learning, and a consistent look and feel, which ensures student familiarity and confidence building. Importantly, the extranet is underpinned by an AQTF-compliant framework, TAFE VC compatibility, secure authenticated access, and for teachers, simple publishing and maintenance processes. Additionally, the extranet enables a direct link to online results, email, course contacts and vendor certification, for example, the CISCO Networking Academy.

In summary, the following outcomes have been achieved from implementation of the *Student Extranet*, and these will be explored through the case study:

- Computing Studies students have access to classroom resources from home, work and the Institute
- Teaching staff have an organised structure and standard procedures for publishing computer-based resources
- Resources are readily available to be shared by all staff
- Availability of standard templates provides a consistent look and feel, encompassing corporate branding of computer-based resources
- The model has potential for a whole-of-Institute approach to flexible and online delivery
- Increased participation of TAFE-VC

Case study methodology and methods of data collection

The building of the extranet began early in 2004 with expert staff creating the base structure and going on to develop the extranet sections while conducting ongoing consultation with key stakeholders. Key stakeholders have formed the teaching focus group and regular meetings have been held with this group to enable trials and input during the development phase. Trials have also been held with student groups throughout the development phase focusing on ease of access and information required.

The overall development has become a key resource while enabling a simplified documentation storage system meeting AQTF and Institute requirements.

Three focus groups have been conducted to gather information in relation to development and application of the *Student Extranet*. All focus group members are users of the Extranet at a range of levels from teaching and student groups. The focus group discussions were followed by one-to-one interviews with a small subsection of each focus group.

The first focus group was made up of teachers from Computing Studies and Information Technology, some of whom had been part of the development stage and others who are current and future users of the *Student Extranet*.

First year students who are using the extranet regularly formed the second focus group with some input from specialist courses students. They were asked to make ongoing comments regarding ease and practicality of use during the start-up phase and regarding current use.

Second year students formed the last focus group commenting on how they had used the extranet and what it offered them, although their use has been different to that of first year students.

One on one interviews were held with the two main developers, a teacher using the end product and a student from Computer Studies first and second year.

Trials have also been run throughout the whole development period with teachers and students Feedback from those processes

Case study design and development

Challenges

Development and implementation by the Computing Studies department of the *Student Extranet* initiative presented challenges to the organization, the development team and individual teachers and students who are incorporating the use of the Extranet into their everyday teaching and learning practices.

The issue has been very clear for the organization as a whole, to give external access to students and ease of use of flexible on line resources.

Challenges for the organisation

There was a need to design an appropriate organisational structure for the extranet that offered consistency for the teaching areas and met each teaching groups' specific needs both currently and for future development.

The perception of who required the *Student Extranet* and how it would be utilised presented a wider organisational issue. Some teaching areas had previously created online spaces or had used the student drives available on the system, which had met their needs. The extranet was initially not believed to be of the same level of relevance for all areas covered.

The management of the extranet raises significant questions regarding teachers entering material and what level of access various staff has in regard to writing. The determination of a Webmaster or ongoing manager of the extranet as well as management in the future is an organisational challenge as it has workload and coordination implications for staff.

The institute Information Systems group which supports all IT use across the Gordon does not have resources to deliver support or security for the extranet and is currently unable to support resources outside its structure. This has resulted in the extranet being independent from the Information Systems Network of the Gordon. The further implication of this for the organisation is the reliance on teaching staff currently involved to continue development, maintenance and security.

A final challenge is the security system necessary for users – passwords and access being a different system from the institutes as a whole requiring a double check of student currency in enrolment. Students must have a login and password to the extranet and this has been organised to be the same as the institute password.

Challenges to individuals- teachers

The development of such a large project will always require added workload for individual teachers to various levels depending on their roles in the project. Currently this has been met through time allowances for the project but does have ongoing needs for support and future development.

The project has met with a further challenge in the need to create a space that is compatible with a range of teaching and learning styles, meeting diverse teacher requirements depending on the material covered and the methodology for teaching.

For a group of the teachers involved the challenge has been to develop and access materials that are

Case Study: *Student Extranet*

Needs of the learner cohort

The most important need for the learners has been to access to information outside of regular hours giving flexibility and further support to study in their learning areas. Students reported constant frustration with access to the online curriculum's they used from both their home computers and other computers within the Gordon Institute of TAFE. Download was slow and often dropped out and Sunday afternoon when many of our students required access for study on weekends is the traditional downtime for maintenance of these US based sites.

Solution

In response to challenge of creating a flexible learning environment, the *Student Extranet* has been developed as an indexed storage framework that mirrors course structures and meets the Australian Quality Training Framework (AQTF) requirements for a resource master list.

The *Extranet* is now fully developed to specifically meet the needs of the Computer Systems teaching and learning group. The platforms for Information Technology and Electronics are undergoing further development to gain this level and currently meet the AQTF documentation requirements with some resources and curriculum available.

The *Student Extranet* is available both internally and externally to the Institute. The extranet provides curriculum resources to facilitate self-directed learning for students from home or within the workplace, providing ready access to learning by existing workers.

Simple processes have been used for publishing and maintenance of resources to enable all staff to participate in curriculum content development and publishing. With content includes:

- *PowerPoint* presentations,
- Assignments,
- Laboratory exercises,
- Web-based curriculum,
- Important web links and
- Competency guides

Case Study: Student Extranet

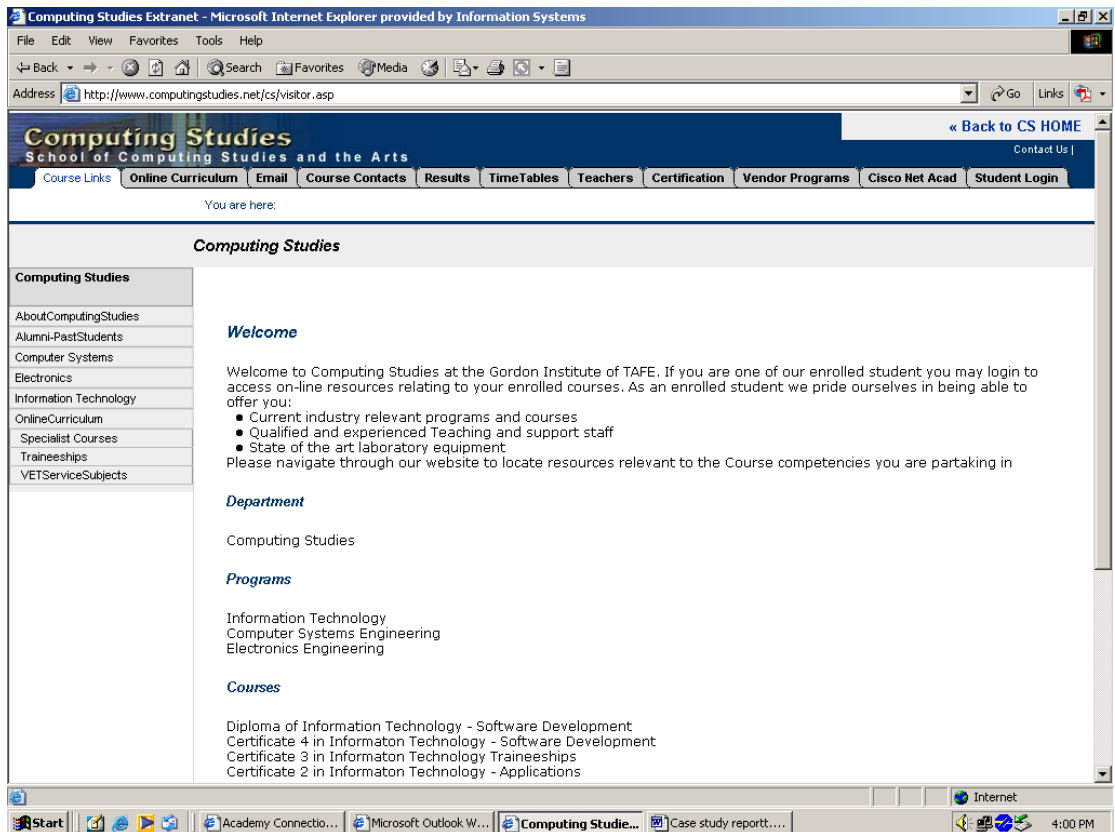


Figure 1: Entry screen to Student Extranet

Welcome screen to site for Computing Studies at the Gordon Institute of TAFE. Links to a direct link to online results, email, course contacts and vendor certification, for example, the CISCO Networking Academy. An added component is Alumni information for past students who are seeking information regarding upgrading certifications and specialist courses. Past students will be able to access with their given passwords.

<http://www.computingstudies.net>

Computer Systems	
Computer Systems	
AdvancedDiploma	<ul style="list-style-type: none"> 37203 CII Computer Brochure.pdf File content last modified: Tue Nov 18 11:52:24 EST 2003 37601 ADV DIP comp systems brochure.pdf File content last modified: Tue Nov 18 11:50:20 EST 2003
Cert2Service	<ul style="list-style-type: none"> LINKS - AdvancedDiplomaFirstYear050504.csv File content last modified: Thu Jun 10 15:31:26 EST 2004 LINKS - AdvancedDiplomaSecondYear050504.csv File content last modified: Wed May 05 16:36:58 EST 2004 LINKS - OnlineCurriculum050504.csv File content last modified: Tue Jun 15 15:12:29 EST 2004

Figure 2: Computer Systems Course structure

This level stores indexed storage framework that mirrors course structures and meets the Australian Quality Training Framework (AQTF) requirements for a resource master list.

Students report this as one of the most useful aspects as the online curriculum resources are accessed easily and quickly through the Extranet and all report this as being a huge improvement on previous external access methods.

Case Study: Student Extranet

Learning Plan: /Computer Systems/LINKS - AdvancedDiplomaFirstYear050504.csv

Program Area : - Computer Systems
Course : - LINKS - AdvancedDiplomaFirstYear050504.csv
Study Area : - LINKS - AdvancedDiplomaFirstYear050504.csv
Module/Cluster :
File :

Cluster	ShortCut	TeacherEmail
InterNetworking 1	InterNetworking 1 Learning Plan	hdelange
InterNetworking 2	InterNetworking 2 Learning Plan	hdelange
Computer Maintenance	Computer Maintenance Online Curriculum	kleach serges rconnor mdeane
Help Desk Customer Relations		rcrowe
Fundamentals of Unix	Fundamentals of Unix LearningPlan	rconnor
NOS Implementation	Network Operating Systems LearningPlan	hdelange
Electronics and Digital Principles		serges mdeane dburns
Programming 1		
InterNetworking 2	InterNetworking 2 Online Curriculum	
Operating Systems 1/2	Operating Systems Online Curriculum	

Figure 3: Cluster information for course

Learning Plan: /Cisco-1/Cisco1LearningPlan300304_HD.csv

Program Area : - Computer Systems
Course : - AdvancedDiploma
Study Area : - InterNetworking-702-DesignSystems
Module/Cluster : - Cisco-1
File : - /Cisco1LearningPlan300304_HD.csv

Week	Date	Topics	Labs	Presentations	Online Curriculum	Resources	Assignments
1		Introduction to Networking	lab_1_2_5.pdf lab_1_2_6.pdf lab_1_2_8.pdf	Ch01 Intro to Networking/CISCO1_CH01_HD.pdf	Chapter 1		
2		Networking Fundamentals	lab_2_3_6.pdf lab_2_3_7.pdf	Ch02 Networking Fundamentals/CISCO1_CH02_HD.pdf	Chapter 2		
3		Networking Fundamentals					
4		Networking Media	lab_3_1_9a.pdf lab_3_1_9b.pdf lab_3_1_9c.pdf lab_3_1_9d.pdf lab_3_1_9e.pdf	Ch03 Networking Media/CISCO1_CH03_HD.pdf	Chapter 3	Aust_RJ45_Pinouts.pdf	
5		Networking Media					
6		Cable Testing		Ch04 Cable Testing/CISCO1_CH04_HD.pdf	Chapter 4	category6_81502.pdf	
7		Cabling LANs and WANs	lab_5_1_12.pdf lab_5_1_13b.pdf lab_5_2_3a.pdf lab_5_2_3b.pdf lab_5_2_7.pdf	Ch05 Cabling LANs and WANs/CISCO1_CH05_HD.pdf	Chapter 5		
8		Ethernet Fundamentals		Ch06 Ethernet Fundamentals/CISCO1_CH06_HD.pdf	Chapter 6		
9		Ethernet Technologies		Ch07 Ethernet Technologies/CISCO1_CH07_HD.pdf	Chapter 7	Ethernet_Specifications.pdf	
10		Ethernet Switching		Ch08 Ethernet Switching/CISCO1_CH08_HD.pdf	Chapter 8		CCNA1 Assignment.pdf
11		TCP/IP Protocol Suite and IP Addressing	lab_9_2_4.pdf lab_9_3_7.pdf	Ch09 TCP/IP Protocol Suite and IP Addressing/CISCO1_CH09_HD.pdf	Chapter 9		
12		TCP/IP Protocol Suite and IP					

Figure 4: teaching and learning resources and week-by-week cluster description

This level displays each topic within a cluster on a week by week basis, giving students access to labs that need to be completed, presentations to support the topic, simple access to the online curriculum associated with the topic, other resources available to support learning and assignment information as they occur throughout the course.

Case Study: Student Extranet

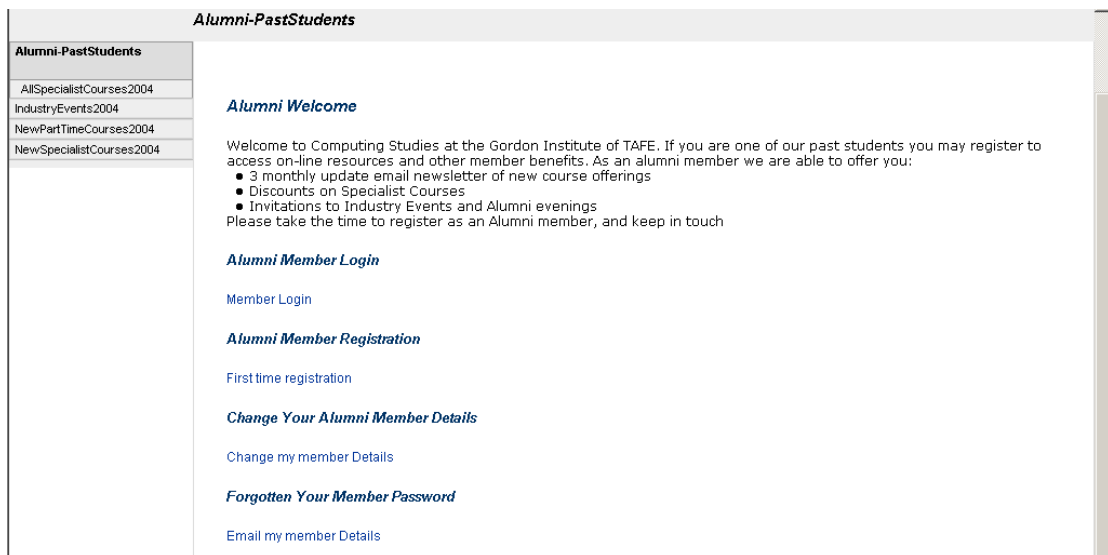


Figure 5: Alumni section

The Alumni link is an important aspect, which has been added during the development of the Extranet. This enables completed students to register using their student passwords. This aims to maintain contact with Alumni, giving them up-to-date information regarding upgrades for certifications and specialist courses as well as creating a robust Alumni community in the Computer Systems graduate group.

Outcomes

For organisation

The response of staff using the Student Extranet on a regular basis has been extremely positive with greater ease for tracking and communicating with students while also meeting student requirements as they occur during the course life. The deploying and maintaining our intellectual property across the organisation now has a higher level of security.

The utilisation of existing information, and creating a method for the storage of the documents, which meets AQTF and Gordon Institute of TAFE requirements, has been of great benefit. This central system of storage of documentation has provided greater organisation and ease of access for all teachers. It also provides an excellent method of currency of documents, which is easily managed.

For learners

For first year learners the Student Extranet has become their key resource, used in both regular class settings and externally when working independently offering the flexibility required for these students.

The *Student Extranet* also promotes self – directed learning where the students is able to control both the learning objectives and the means of learning by having knowledge of the entire course available to them and the ability to study in ways that suit the learners needs.

All students have reported far greater and faster access to online curriculum such as CISCO. Previously all students had experienced difficulties when accessing online

Case Study: *Student Extranet*

materials including slowness and dropouts as well as availability problems at some times when to accessing externally. External access also included any other part of the Institute network as well as from home.

Assessment and program evaluation strategies

Assessment and evaluation has been conducted through:

- Ongoing sessions for trialling and consulting with key stakeholders
- Focus group evaluations
- Tracking of student results

As discussed in case study methodology

Lessons learnt

The need to create a flexible learning environment for students is elemental to developing an environment for self-directed learning. The resources created here are of major benefit to learners to allow for learning that is enhanced and for which they are able to take much greater responsibility.

For teachers it has alleviated some of the issues surrounding AQTF compliance with the creation of a streamlined approach to storage and access of key documentation.

Developing an organised structure and standard procedures for publishing computer-based resources, which are readily available to be shared by all staff, allows development of higher-level student information, learning materials and support.

Trialling of a project such as this at key milestones with large groups of users allows for real input and the ability to deal with many problems at important developmental stages.

Remaining issues

No one issue has caused a major difficulty with the current use and the further development of the Student Extranet however some of the challenges which have been discussed are current and will need further organisational consideration.

They are:

- Ongoing support of the extranet by the Information System group within the Gordon Institute of TAFE
- Future management of the intranet resources and development with designated time and commitment for a teacher or teachers
- Further expansion of extranet resources to meet needs of IT and Electronics teaching areas.
- The development of a simple system to maintain extranet student accounts as current in compliance with Institute student accounts

Case Study: *Student Extranet*

Key messages for the sector

It is envisaged that the *Student Extranet* and what it provides for teachers and learners will have real implications for staff across the Gordon and the further TAFE sector.

Two half-day workshops have been organised to cover the following:

1. Overview of content delivery and publishing process:
 - Directory structure
 - AQTF compliance through master list
 - Integrated learning plan
 - Developing resources
 - Converting to PDF
 - Publishing a resource
 - Online delivery
 - Permissions and security

2. Development of a delivery structure to meet participants' needs and competency achievement:
 - Course structure
 - Resource placement
 - Guides placement
 - Learning plans

3. *AQTF compliance* –Using the *Student Extranet* as a master list of resources and competency guides for delivery to students:
 - Requirements of a master list

4. Development of a learning plan for a competency that integrates links to a variety of online resources into a week-by-week web page:
 - Value of the learning plan
 - *MS Excel/CSV* file
 - Resource placement
 - Adding resources
 - Adding links
 - Testing

5. Developing resource/s for online delivery via the *Student Extranet* from pre-defined templates:
 - *PowerPoint* presentation template
 - Word document assignment
 - Competency guide

6. Converting the developed resources into *Adobe* PDF format, with application of appropriate document security:
 - PDF security
 - Converting to PDF

7. Uploading developed and converted PDF resources to the *Student Extranet* directory structure

8. Delivering a class utilising the *Student Extranet* as a resource provider

9. Overview of the need for security, and the techniques used to provide resource security by the *Student Extranet*

Organisational profile

Based in Geelong, the Gordon Institute of TAFE is a national training provider delivering quality vocational education services. The Gordon is widely recognised and applauded for excellence, the most recent accolade being the *Victorian Training Provider of the Year Award 2003*.

The Gordon offers 200 full-time and part-time certificate, diploma and advanced diploma courses, plus apprenticeships, traineeships, 220 specialist short courses and customized industry training programs.

The Gordon has a long history in the development of flexible learning resources and the offering of flexible learning programs. Initially these took the form of print-based resources, while more recently they have focused on online offerings. In addition to many internal flexible learning developmental undertakings, the Gordon has also been involved in several significant external flexible-learning projects.

For example, in 1998 the Gordon managed the Open Training Services (OTS) projects for the development of CD-ROM training resources for *Occupational Health & Safety* and *Copyright for Electronic Media*. During 2002 the Gordon managed the ANTA-funded *Dial-a-Lunch Ahead Start Program*, the aims of which were to enhance the learning opportunities of students with intellectual disabilities through the provision of learning and assessment tools in the form of print-based resources and an interactive CD.

More recently, the Gordon has worked with Chisholm Institute of TAFE on the development of resources and online evaluation instruments for the ANTA-funded *Automotive Vehicle Body Toolbox* project.

From a research perspective, from 2000 – 2001 the Gordon participated in the NCVET project – *Strategies to develop the preparedness of learners and their workplaces for flexible delivery*, undertaken by the Deakin University/Gordon Institute of TAFE Research Institute for Professional and Vocational Education and Training (RIPVET), and the TAFE frontiers project, *Support Services for Flexible Delivery*, also through RIPVET.

During 2000-2002 the Gordon managed the TAFE frontiers Innovation Project *Flexible Learning Management Support Indicator*. In addition to exploration of online instruments to help identify and assist different learning styles/preferences, an online instrument was developed to help determine learner types – the *Learner Type Indicator (LTI)*. A further online instrument, the *Management Support Indicator (MSI)*, was developed to assist in the management of flexible learners.

Currently the Gordon is developing a new course, the working title of which is *Developing higher order cognitive skills and broadening the thinking skills of VET learners*. On completion of development towards the end of 2004, nine interactive online resources will be available via the TAFE-VC to assist teachers in the areas of generic skills, cognitive skills, critical and creative thinking, problem-solving and decision-making, visual communication, and visual perception and spatial reasoning.

Case Study: *Student Extranet*

Staff and students involved in the case study.

- Daryl Barnet - Assoc Diploma of Arts (Screen Print Design), Diploma of Vocational Education and Training, Certificates II, III and IV in Business Administration
- Stephen Gale - Master of Engineering (Information Technology), Graduate Diploma of Education (TAFE), Graduate Diploma of Computer Engineering
- Helen Delange - Diploma of VET, Diploma of Computer Systems, Certificate IV in Workplace Training Category 2, Cisco Certified Network Associate
- Rosemary Crowe - Master of Education, Bachelor of Education, Bachelor of Arts
- Jan Kealey - Bachelor of Arts, Graduate Diploma in Computing, Trained Secondary Teacher's Certificate
- Kevin Leach

Focus Groups participants - teaching staff

Jan Kealey
Tony Leeds
Helen De Lange
Jack Mackie

Steve Gale
Rosemary Crowe
Bernie Mazylis
Kevin Leach

Focus Group Participants - Students

Michael Malley
Nick Gulino
Rohan
Adam Romanuvik

David Cleminson
Luke Russell
Justin Grant
Brandon Lambley