University Matching Funds for Information Technology Development

Program and Course Mapping to Scaffold Learning Final Report

February 2003

Project Team

Professor Tony Radford (Designated project leader and particularly responsible for Architecture component)

Dr Susan Shannon (Project officer, evaluator and main author of this Report)

Mr Ian Roberts (Implementation officer, seconded from ITS, software author and responsible for implementation)

Dr David Jones (School Associate Dean, Teaching, and particularly responsible for Landscape Architecture component)

Project Aim

The project aim was to develop a web-based map of programs and courses that connects the content and modes of learning in individual courses with desired graduate attributes and professional accreditation requirements.

(a) How the funds were put to use to support learning and teaching initiatives in the School

The funds were used to design, implement and evaluate a program map for the School's main undergraduate degree, the Bachelor of Design studies.

Viewing a program map (called "ProgramMap" in this project) which states and makes explicit prior knowledge, established criteria and standards for this knowledge, and show-cases exemplars of learning related to each key learning areas, enables students to scaffold and take control of their own learning in the various pathways and outcomes of our professional discipline areas. This is particularly necessary given the diversity and complex interrelations of the learning opportunities offered in our School.

The maps appear on the www.arch.adelaide.edu School web site. They can be accessed at degree, year or course levels, and are highly detailed at a course level. They provide program information:

for prospective local students, and for use in marketing interstate and overseas;

for enrolled students to select pathways through the degrees;

for staff and administrators to ensure competency coverage, help avoid 'doubling up', and encourage the establishment of clear goals and standards against each learning dimension or competency.

Examples of pages from ProgramMap are shown in Appendix A.

At the most granular level, ProgramMap is a visual display of the content and detail of courses: what happens within them, how learning happens, the focus of the learning, where learning happens, the process of learning (group or individual), how assessments are structured within the learning cycle, and "what students actually *do* to learn" in each course. The courses thus described in ProgramMap accrete to display visually a program, which allows students to view the constituent parts of the Program *in detail* and to understand the relationship between the proscribed graduate attributes, the emphasis of those attributes in that program, and their courses.

The ProgramMaps are designed to be 'searchable' via learning outcomes and competencies, curriculum organisation, and modes of teaching and learning. They can be printed to generate descriptions for students' CVs. They aid exchange, transfer and other students commencing at higher year levels to map prior learning, and assist staff in establishing where such students should be given status in courses.

(b) How the initiative will be sustained within the School

Because courses and programs are likely to change quite frequently, ProgramMap is designed to accept alterations to course descriptions and additional courses with minimal user skills in the system's operations. These changes are then reflected automatically in the aggregate program information generated by the system. The system is also implemented using common standard software to mimimise problems of University software license changes making it unavailable. Long term sustainability will depend on ProgramMap continuing to be seen as a valid and useful way of representing program features. We are confident that it will continue to be seen in this way.

(c) How the product enhances learning and teaching within the School

Enhancing learning for students

This Report is written at a time when only one formal Program Map evaluation has been conducted, and that was of group of prospective students (Year 11 and 12). The evaluation trials with 105 Level 1 students are scheduled for 5, 6 March 2003. The very positive evaluation of ProgramMap by intending (Year 11 and 12) students is attached to this as Appendix B, together with the evaluation forms for potential students and current students.

Marketing, and ProgramMap's role in prospective students' choices

McInnis, James and Hartley (2000) report that "a growing body of literature has developed around the importance of students' early subject choices, and the reality that initial choices are not always the "right" ones for various reasons. Some students lack enough information or accurate information on which to make informed choices (James, Baldwin and McInnis1999)" (McInnis, Craig, James, Richard and Hartley, Robyn 2000, "Trends in the First Year Experience in Australian Universities" Centre for the Study of Higher Education, University of Melbourne, p14). We believe from the limited but thorough Year11 and Year 12 evaluation that Program Map has fulfilled an important role in students' being better informed about their prospective Courses, and intended Program. 94% reported that gathering information in Courses and Program was reasonable to very easy; 945 described the interface as links working reasonably to well to very easily; 97% thought the interface was reasonable to very visually appealing; and most importantly 94% understood reasonably to completely the information they were looking at.

International marketing is greatly aided by ProgramMap. It is web-based, and therefore portable. Students and their advisors can view detailed descriptors of course content and exemplars.

Program Map's role in informing enrolled students of courses and programs

Enrolled students, through the interface of Program Map can track their learning (in Courses) through a Program, mapping their strengths and career and educational goals against the detail provided about the focus of each Program, and Course. This is important for enrolled students – Mc Innis, James and Hartley (2000) report that the apparent trend towards a higher number of enrolled students withdrawing from subjects and switching courses (Programs) raising from 8.8% in 1994 to 20% in 2000 needs close monitoring (p.15). We contend that students are well placed to monitor their prospective courses, and align their course enrolments with their strengths and interests, when the full disclosure of ProgramMap re Courses and Programs is available, on the web. A report from the course coordinator about the intent of the course is shaped into a visual display for universal perusal anywhere, any time.

ProgramMap's role in supporting Teaching

ProgramMap facilitates the auditing of program content against the School's graduate attributes and the attributes prescribed by the School's accreditation process (RAIA, and AILA). The aggregation of course content to enable program auditing has provided an opportunity at School Board level (10-2-03) for a preliminary whole of teaching staff discussion about the emerging trends in the Bachelor of Design

Studies program. In particular, the system enables areas of teaching which are apparently underserviced to be identified, and planning for development to address these concerns to be commenced.

ProgramMap evaluation by teaching staff

The preliminary evaluation of Program Map by the teaching staff on that occasion revealed that:

- 1. They finally understood what the whole process of data gathering, which had involved everyone of them, was directed towards.
- 2. There was a request for the ability to revise data inputs (we have subsequently done this for "learning locale" to exclude "home" and include learning locale only for schedule contact time).
- 3. There was surprise at the complexity and flexibility of the visual display.
- 4. There were academic and intellectual conceptual difficulties with displaying the course coordinators subjectivities into a quantitative framework quality reported quantitatively. We have insisted that the ProgramMap reports are always the Course Coordinators' *intent* in delivering the course. Only inclassroom educational auditing of courses as observed by an evaluator with the enrolled cohort can produce a more detailed, accurate and quantified description of what actually happened in the course. This style of information gathering has a different problem that the educational observer only sees what actually happens which may (for a number of valid reasons) *not* be what the course coordinator planned. Our response has been to invite course coordinators to review displayed data, (available password protected to staff only during the review process) and submit required changes. Revisions are easy to do. 5. Staff wanted to see a linked web page displaying definitions and context so that for example they could at a glance see the RAIA Graduate attributes, or the School's Graduate attributes displayed; a taxonomy of order of the different frameworks for reporting; and references to pursue for further information. We have already incorporated these suggestions.
- 6. Staff wanted to see the visual display (reporting) to be able to be modified for different user groups so that prospective students would be viewing a different (and perhaps simpler) interface to the academic staff or a professional accreditation panel.

ProgramMap's role in enhancing teaching

Teachers frequently stated during the process of describing their courses within the ProgramMap framework that:

- 1. At last they could actually now see what courses to "either side" of their course actually did, and that the reporting of courses within the same framework allowed them to reach a point where they could negotiate more successfully to cover areas where the syllabus is under-serviced.
- 2. That it was a good discipline on themselves to describe what they do in their courses against the accreditation framework reporting it caused a re-think of what they did;
- 3. The opportunity to enhance the ProgramMap display with examples of student work was generally welcomed as a means to disseminating examples of best practice.

At the School management level the identification of an apparent insufficiency of directed teaching in landscape architecture in many B Des St Courses has been identified. It is intended that the ProgramMap tool is utilised to draw attention to a deficit in the AILA categories for reporting. A journal article is planned to show that what we do is not captured in their categories, although our Landscape teaching and students are Australia wide award winners in this field.

Again at the management level, at the forthcoming triennial School Accreditation process (May 26-27) ProgramMap will be used to describe and display the alignment of Courses and Program(s) with the required reporting fields – which have already been surveyed and displayed.

(d) Acquittal statement of the budget

The project budget was \$16,000 (plus the School contribution). This was expended as follows:

Project officer:

The current project will be completed in February 2003. So far we have:

Designed and built a prototype program and course mapping tool.

Interviewed course coordinators in the BDesSt program and entered results in the tool

Modified and developed the tool to produce a 'production' version.

The remaining tasks are:

De-bug and refine the tool.

Add course illustrative material

Place on School web site.

Test use with and by prospective students and re-enrolling students.

Project Budget

The project budget was \$16,000 plus School funds (the original Matching Funds request was for \$27,934 plus School funds). This was expended as follows:

Academic salary and related costs: \$5,392 (Project Officer. After July 2003 the Project Officer time cost has been carried by the School).

Non-academic salary and related costs: \$10,608 (Implementation Officer. This covers the Implementation Officer's salary while seconded from ITS to the project).

All other costs have been carried by the School.

Appendix A

Example Pages from ProgramMap
a web-based tool for describing Courses and mapping them onto a Program.



ProgramMap...

News & events



Bachelor of Design Studies (BDesSt)

Program type

Bachelor Degree

The entry point for most students into the School, the Bachelor of Design Studies degree aims to develop a student's understanding of the diverse knowledge and specialised skills required within the design fields. It is a three-year degree that consists of both elective and core courses. The Bachelor of Design Studies degree is the first degree of a two degree system aimed at students who are interested in entering professional degrees in architecture or landscape architecture. (see Bachelor of Architecture and Bachelor of Landscape Architecture).

Program plan

Selected Major: Generic

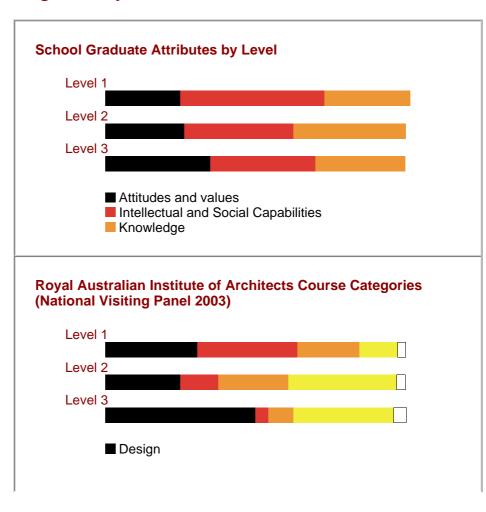
Choose your prefered major: Select your Major...

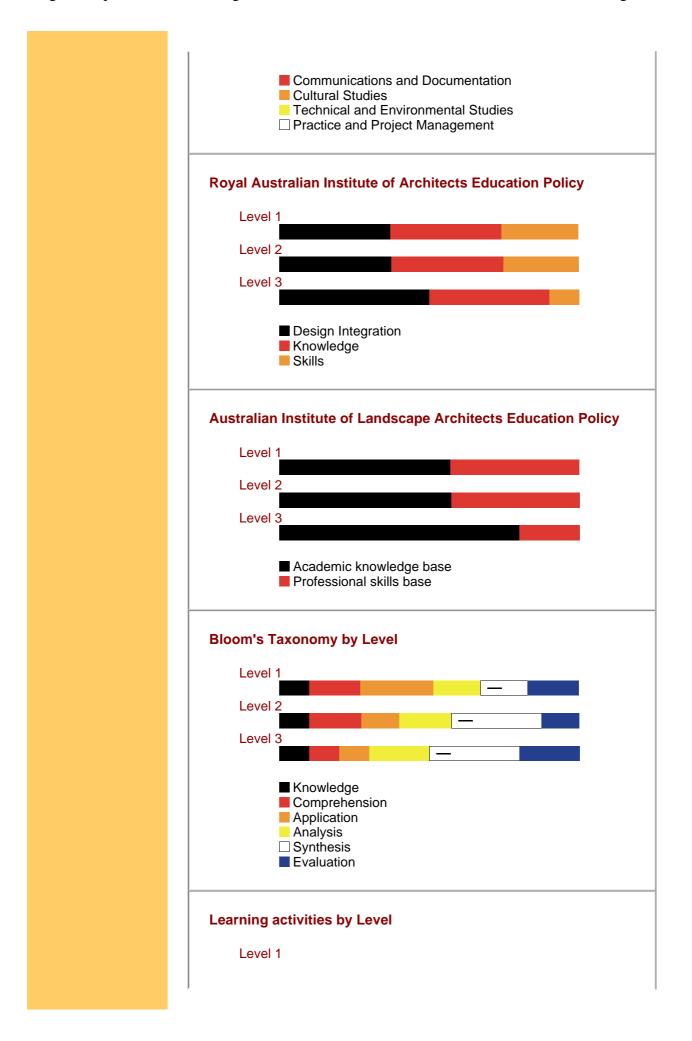
Select your preferred electives and press the Analyse button.

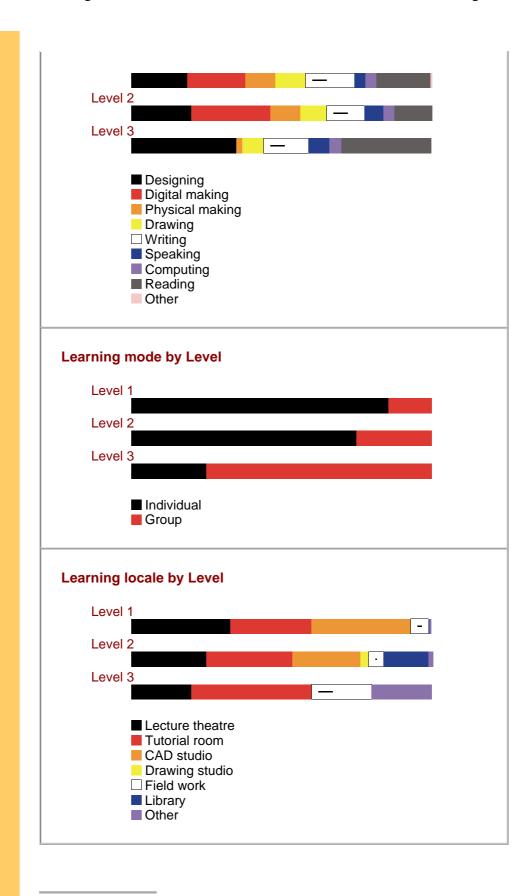
Level 1 (18 units, 75% FTE)		
Semester 1	Semester 2	
Built Environments I Computer-Aided Design I Drawing Architecture and Landscape Architecture I An Introduction to Contemporary Arab Culture and Architecture Art History and Theories IA Natural Systems and Design I	Composing Architecture and Landscape Architecture I Construction I Image/Text/Architecture I Art History and Theories IB Australian Architecture and Landscapes I Special Topic in Design Studies IB (Landscape Design)	
Special Topic in Design Studies IA	10 C70/ FTF)	
Semester 1	nits, 67% FTE) Semester 2	
Domestic Scale Construction II Technology in the Built Environment II Art History and Theories IIA Conservation in the Built Environment II	Design and Environments II Twentieth Century Architecture and Landscapes II ——— Art History and Theories IIB Computer-Aided Design IIB	

□ Natural Systems and Design II □ Special Topic in Design Studies IIA (The Place for Furniture) □ Special Topic in Design Studies IIE (Aboriginal Built Environments)	Special Topic in Design Studies IIB Special Topic in Design Studies IIF (Performance of Design)
Semester 1	nits, 25% FTE) Semester 2
Issues in Urban and Landscape Sustainability III Conservation in the Built Environment III Special Topic in Design Studies IIIA (Domestic Scale Construction) Special Topic in Design Studies IIIE (Aboriginal Built	☐ Computer-Aided Design IIIB ☐ Special Topic in Design Studies IIIF (Performance of Design)
Environments) Analyse	

Program analysis







Navigate this section

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ProgramMap...



Gregory (2002)



Level

Construction I

Semester

2 Note

This is a core course within this program.

Units



Ms Pui Chi Tsang (2002)

Course analysis

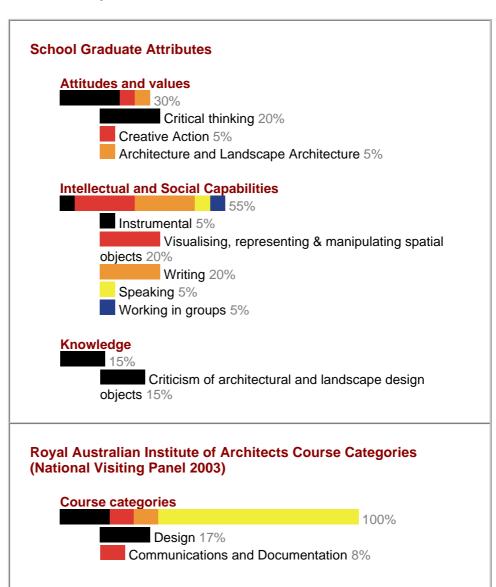
3

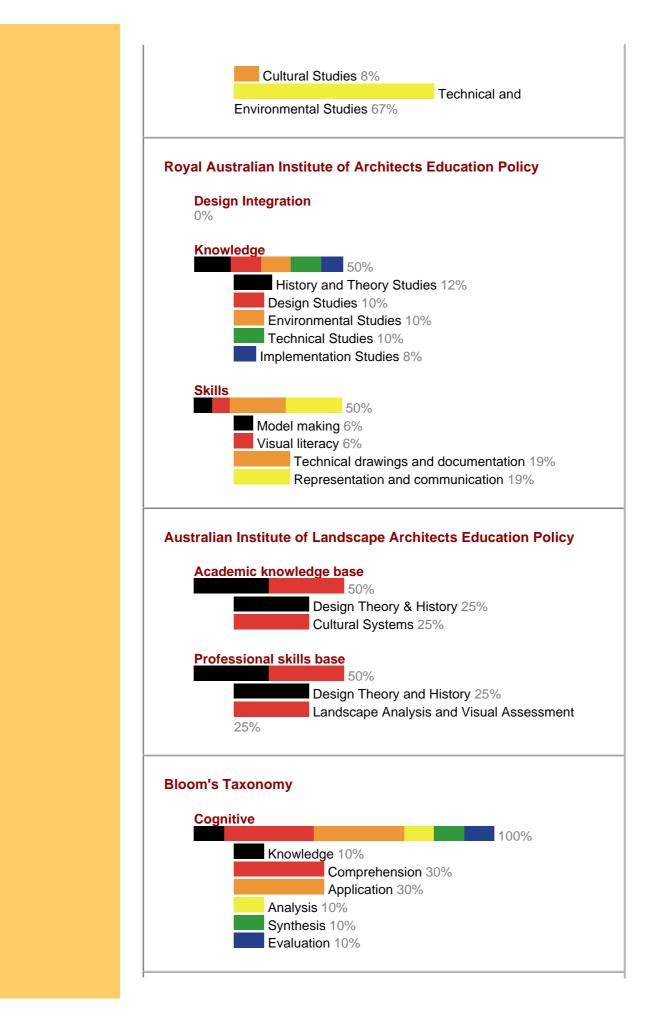


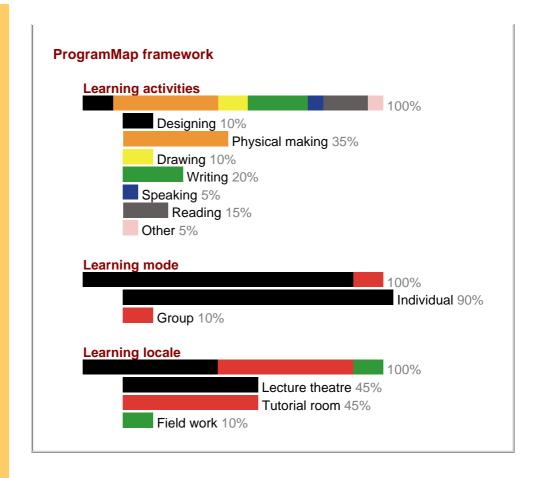


Mr Mark Hinchcliff (2002)









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ProgramMap...

News & events

Mr David Gregory (2002)



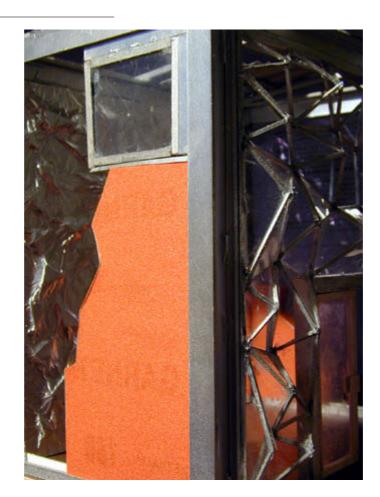
Mr David Gregory (2002)

Course context Construction I









Corner detail



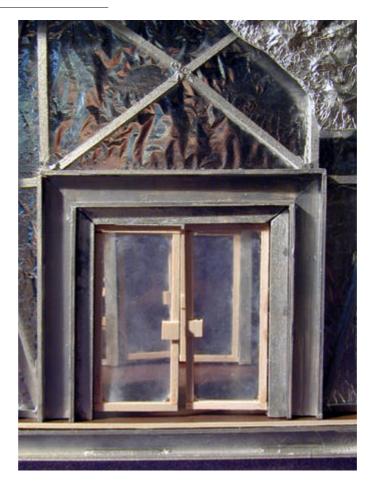
Elevation-end



Elevation-front



Elevation-rear



Entrance



Window detail

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Appendix B

Evaluation of ProgramMap

a web-based tool for describing Courses and mapping them onto a Program.

On 30th January 2003, a trial of ProgramMap was conducted with 36 prospective Year 11 and Year 12 students on a structured one hour visit from Glenunga International High School. The ProgramMap trial was conducted after ½ hour description of the School, the Programs, the detail of one of the courses (Built Environments 1) and the career opportunities for School graduates.

The students were

- set in front of a computer logged onto the Internet and open the School's Home Page in the Level 5 CAD Suite in the School
- 2. given a sheet of paper telling them
 - a. how to move from the home page to ProgramMap,
 - b. how to navigate from the full Program list to the Bachelor of Design Studies description.
- 3. given a questionnaire of 12 questions to complete in ½ hour. The questions were either 3 point preference scale or open text box.

Respondents Year Level

Year Level	Yr 11 and Yr 12 (NYL)	Year 12	Year 11
Total 32	10	11	11

Q1. Navigation from School Home Page to ProgramMap Home Page

0 Very hard	11 Reasonable	21 Very Easy
0	4(NYL) + 4(Yr 12) + 3(Yr 11)	6 (NYL) +7 (Yr 12)+8 (Yr 11)

Commentary No students found it very hard to navigate from the School Home Page to the ProgramMap but they did have written instructions telling them to go to the pull down Menu and that PragramMap was at the bottom of the menu.

Q2. Gathering information on the Program (eg Bachelor of Design Studies)

2 Very hard	19 Reasonable	11 Very Easy
2 (NYL)	4(NYL) + 5(Yr 12) + 10(Yr11)	4(NYL) + 6(Yr 12) + 1(Yr 11)

Commentary The 2 NYL students who reported it Very hard to gather information on the Program also reported it Reasonable navigation from School Home Page to ProgramMap. There were a number of overseas students in the group as it is an International High School and it was only their third day of School in Australia. They said do not understand when I asked the class to go around and say "What they had made" in an earlier part of the presentation.

Q3:Gathering information on the Bachelor of Design Studies Courses

2 Very hard	18 Reasonable	14 Very Easy
2 (NYL)	3(NYL) + 7(Yr 12) + 8(Yr 11)	5(NYL) +6 (Yr 12)+ 3 (Yr 11)

Commentary: This response is crucial to the success of Programmap as a toll to assist decision making regarding Course selection.

Q4: How did the links in ProgramMap work for you?

2 Very hard 10		20 Very Easy
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2 (NYL) $3 (NYL) + 4 (Yr 12) + 3 (Yr11)$	6 (NYL) + 7(Yr 12) + 7(Yr 11)
--	-------------------------------

Commentary: Links work easily

Q5: Did you like the look of ProgramMap?

1 Not at all	18 Reasonable	13 Very visually appealing
1 (Yr 12)	9(NYL) + 6(Yr 12) + 3(Yr11)	2(NYL) + 4(Yr 12) + 7(Yr 11)

Commentary: The "look" of Program Map as a "hook" to investigate is important to the creator: the students find is reasonable to very visually appealing.

Q6: Did you understand the information you were looking at?

2 Not at all	27 Reasonably	3 Completely
1 (NYL) 1 (Yr 11)	8(NYL) + 10(Yr 12) + 9(Yr11)	1(NYL) + 1(Yr 12) + 1(Yr 11)

Commentary: Understandably with such a brief introduction to the School and no discussion of any of the Frameworks, students preferred the "Reasonably" category. Building up links to the Frameworks descriptions for users is important.

Q7: What information would you like to have about the **Program** *Bachelor of Design Studies*? Open Text box comments followed by [any relevant commentary]

NYL

Most is covered

9

What is involved it the Course. Previous students work [I noted that many students looked at the 3 minutes to Midnight section on the Gallery and this need to view other students work is being covered in the addition of exemplars].

What opportunities you get

Other areas that the Course is useful for

I don't know

I don't know

Yr 12

What courses need pre-rec subjects [covered in briefing]

No

No . It covers <u>all</u> areas

It covered all areas of the program that I wanted to find out about.

All my questions have been answered

Anything involving environmental aspects [took this student to meet David Jones and Graeme Hopkins after the session]

I would like to improve the drawing and the knowledge of CAD design

What other similar courses link into this one, that you can change to if you feel the need,

Yr 11

All my questions were answered. Oh, wait. An explanation of what we should expect to be doing as professionals.[I only covered the list of 20 or so professions you could enter – not what each one actually does].

How long does it go? [Covered] How much does it cost? [Cost was a feature of many questions from the floor – presumably because it's a HS, an Int Sch, and many were OS students and recent migrants – therefore unaware of the HECS Scheme etc.]

None. The session was very informative. Thankyou

Q8: What information would you like to have about the individual **Courses** in *Bachelor of Design Studies*?

NYL

How much work is involved How much work is involved

Just what's there

Jus

YR12

Issues in Urban and Landscape Sustainability

More outline of the topics

The colourful lines were very helpful

The colour full lines really helped me...it was fantastic and bright

No

What the average scores were in each course compared with the average TER it the class.[Great research question 1] What components are computer based or not; how much time is spent in front of a screen [several students said during the question time that they did not want either a Uni course or a career where they were sitting in front of a computer – presumably in response the the drill on

the day of sitting in front of a computer].

YR11

What sort of project will be able?

None. The session was very informative. Thankyou.

If you can do another course while you are doing the Design course [double degrees promoted during the preceding presentation]

More information about the degrees available for the double degree program.[ProgramMap does not address this – nor is it really intended to do so]

Q 9. How did **ProgramMap** help you to answer your questions?

NYL

It answered some of my questions but most of my questions were answered by the teacher's speech and powerpoint presentation.

Alright.

I found it confusing because the colours were all messed up [as we subsequently identified – this answer reveals that at least this student actually took it in].

YR 12

Showed the individual parts of the course

It was easy to navigate and find stuff

It help fairly well

It was the right amount of info for what I needed to know

It helped me because it set everything our clearly

Dot points is good – easy to read

Lots of info that was easy to access and comprehend

Easily laid out plans of what will be happening

YR11

Architecture

It illustrated things to make them easier to understand

Q10. Will you refer back to Program Map in your own time as a resource?

Definitely not	21 Maybe	4 Definitely
(NYL)	10(NYL) + 5(Yr 12) + 6(Yr11)	(NYL) + 2 (Yr 12) + 2 (Yr 11)

Commentary: Not all students completed the Survey. Of the 25 who got this far the majority might refer back to it in their own time.

Q11 In what ways can the information within ProgramMap on courses an Programs be improved to answer your questions?

NYL

Help me find out more about courses

The graphs are labelled wrong making it confusing and misleading [Yes, true of pilot]

By having email attached [Good idea to instantly launch an email window to the Academic Registrar who can forward to Course coordinators if required]

Have the colours in the appropriate sections

More clearly

More clearly

YR12

I don't know

???

Maybe some more detail and links [We've decided to do the inks bit to definitions – what other links?] More specific – eg tell us exact things we will be designing

VR11

Now I know what I can do when I study this subject

I don't have any questions

More info

A little more detail

Q12 How can the visual presentation of ProgramMap be improved to provide the information you need?

NYL

It's fine

Not really

I don't know

YR12

It can have more pictures especially of students' work

I don't know

No need for improvement

More pictures and colour

I think maybe it should be slightly altered and revise to make it more interesting to look at

Want bigger pictures of architecturally designed things

More prominent links, more colour and maybe different fonts 2 make it even more appealing

More graphs and pictures

No need for improvement

YR11

The links (at the top) could stand out more(about us etc.)

Summary

ProgramMap was well received at its initial trial with 36 Yr 11 and 12 High School students on a structured visit to the School. Their insightful comments are reflective of where we are directing our current improvement and completion program over the next 2 weeks prior to a further trail with Level 1 students enrolled in the School.

Susan Shannon

Evaluator

14 Feb 2003

The University of Adelaide School of Architecture, Landscape Architecture and Urban Design

Enrolling Student Pilot Trial of Program Map – a web-based tool for mapping Courses onto a Program

Please complete this anonymous, confidential questionnaire and return in internal mail envelope to the questionnaire deposit box for Dr Susan Shannon

Information on respondent Student Level: Intending student in the future Cur Enrolling in 1st yr B Des St 2003 Enrolling in 2nd yr BDes St 2003 Enrolling in 3rd yr B Des St 2003 Enrolling in B Arch Program Enrolling in B LArch Program Enrolling in Graduate Diploma Other – please explain				
1. Navigation from School Home Very Hard	e Page to Program Reasonable	Map Home Page	(tick one box) Very easy	
2. Gathering information on the Very Hard	Program (eg Bach Reasonable	nelor of Design Stu	udies) Very easy	
3. Gathering information on the Very Hard	Bachelor of Desig Reasonable	n Studies Courses	Very easy	
4. How did the links in Program Very Hard	Map work for you Reasonable	?	Very easy	
5. Did you like the look of Progr Not at all	amMap? Reasonable	Very visua	ally appealing	
6. Did you understand the inform Not at all	nation you were l o Reasonably	ooking at?	Completely	
7. What information would you like	te to have about the	Program Bachelo	r of Design Studies?	1
8. What information would you like	te to have about the	individual Courses	s in Bachelor of Design Studies?	

9. How did ProgramMap	help you to answer your q	uestions?	
10. Will you refer back t Definitely Not	o ProgramMap in your o Maybe	wn time as a resource? Definitely	
11. In what ways can the your questions?	information within Prog	gramMap on Courses and Programs be i	mproved to answe
12. How can the visual p	resentation of Program M	Iap be improved to provide information	you need?
12. How can the visual p	resentation of Program N	Iap be improved to provide information	you need?
12. How can the visual p	resentation of Program M	Iap be improved to provide information	you need?
12. How can the visual p	resentation of Program N	Iap be improved to provide information	you need?

Thank you for completing this questionnaire.

Your evaluation will be used for improvement of ProgramMap

If you have any further queries about ProgramMap or the Courses or Programs please contact Dr Susan Shannon 8303 5490 or susan.shannon@adelaide.edu.au

The University of Adelaide School of Architecture, Landscape Architecture and Urban Design

${\bf March~2003~Level~1~Student~Pilot~Trial~of~Program~Map-a~web-based~tool~for~mapping~Courses~onto~a~Program}$

Please complete this anonymous, confidential questionnaire and return to Susan Shannon.

1. Navigation from School Hom Very Hard	e Page to ProgramMap Home I Reasonable	Page (tick one box) Very easy	
2. Gathering information on the Very Hard	e Program (eg Bachelor of Desig Reasonable	gn Studies) Very easy	
3. Gathering information on the Very Hard	e Bachelor of Design Studies Co Reasonable	vurses Very easy	
4. How well did the links in Pro Not Very Well	gramMap work for you? Reasonably Well	Very Well	
5. Did you like the look of Prog Not at all		Very visually appealing	
6. Did you understand the infor Not at all	mation you were looking at? Reasonably	Completely	
7. What information would you li of Courses which builds to a Back		achelor of Design Studies? (A Program is a series	
8. What information would you li	ke to have about the individual C	ourses in Bachelor of Design Studies?	
9. How did ProgramMap help yo	ou to answer your questions?		

10. Will you refer back to Definitely Not	ProgramMap in your own to Maybe	time as a resource	? Definitely	
11. In what ways can the in your questions?	nformation within Program	Map on Courses	and Programs be impro	ved to answer
12. How can the visual pre	esentation of ProgramMap	be improved to pr	ovide information you ne	ed?
13. Any other comments o a student that you don't ali	n what other information on ready have?	University Cour	rses and Programs you n	eed at this sta

Thank you for completing this questionnaire.

Your evaluation will be used for improvement of ProgramMap

If you have any further queries about ProgramMap or the Courses or Programs please contact Dr Susan Shannon 8303 5490 or susan.shannon@adelaide.edu.au