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An evaluation of a web-based tool to assist transition to university

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**AN EVALUATION OF A WEB-BASED TOOL TO ASSIST
TRANSITION TO UNIVERSITY**

by

Jack Seddon

Submitted to the School of Communications and Multimedia, Edith Cowan University,
in partial fulfilment of the degree of Bachelor of Communications (Hons).

January 2001

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Content declaration

I certify that this thesis does not to the best of my knowledge and belief:

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Signed _____ Date 21-03-2002
 ↓ Jack Seddon

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Contents

Content declaration	2
Use of thesis.....	3
Acknowledgments.....	4
Abstract.....	9
Chapter 1	10
Rationale.....	10
Transition is a major problem.....	10
Review of literature.....	11
On transition from high school to university.....	11
Minority issues	14
Student finance	14
Information and the Web.....	14
On communication methods of transferring transitional information	15
Some existing solutions.....	17
Summary.....	19
Attributes of Supporting Transition Students.....	19
Attributes of a good solution	20
Chapter 2	21
A transition Web site	21
RACECU Web site design	22
Elements of the RAECU Web site	23
The RAECU solution.....	28
Research questions	28
Chapter 3	30
Methodology	30
Instrument development	30
Content and constructs.....	30
Sequence of questions	31
Choosing the sample population.....	31
Internal validity.....	32
Test effects.....	32
External validity	33
Scales	33
Instrument implementation.....	34

Data gathering.....	34
Data analysis.....	35
Chapter 4	36
Results	36
4.1 Descriptive data	36
Sample demographics	36
Internet access	38
Teaching strategies	39
Time spent on the RAECU Web site.....	39
Preferences for attending ECU	40
Comparing pre and post-test knowledge scores.....	40
4.2 Influencing factors	43
Overview	43
Knowledge acquisition	43
Time spent visiting the RAECU Web site.....	46
Influence of age	47
Gender difference in outcomes.....	49
Participating schools.....	50
Experience with computers	52
General computing skills.....	54
Internet usage.....	55
Attitudes towards going to, knowing about and enjoying university.....	58
Would students like to go to university	58
Would students like to visit an ECU campus	59
How enjoyable do students think university would be	60
Chapter 5	62
Conclusion.....	62
Project summary.....	62
Summary of literature.....	62
Research questions	63
Methodology.....	64
The survey results.....	65
The comparison of pre and post-test knowledge scores	65
Reflections on the project	66
Reflections and improvements to the survey tool.....	66
Suggestions for using the Web to assist with transition	67
Further research	68

References	70
Appendices	75
Appendix A	76
Appendix B.....	81
Appendix C.....	82

Tables

Table 1.1: Attributes of supporting transition students	20
Table 2.1: Attributes of transition and media solutions	28
Table 3.1: Correlation of research question constructs and the administered surveys.....	30
Table 3.2: Instrumental scales.....	33
Table 4.1: Breakdown of participating high schools.....	36
Table 4.2: Computing experience, general skills and Internet usage (self-beliefs).....	37
Table 4.3: Strategies the student used while visiting the RAECU Web site.....	39
Table 4.4: Time spent during visit to RAECU Web site.....	40
Table 4.5: Student preferences for attending ECU.....	40
Table 4.6: Student preferences for attending ECU.....	41
Table 4.7: Means of knowledge acquisition scores: Teacher Directed (TD) Student Centred (SC).....	44
Table 4.8: One factor ANOVA: Teacher Directed (TD) – Student Centred (SC)/Difference between pre and post-test knowledge scores.....	44
Table 4.9: Time spent and mean differences between pre and post-test knowledge scores: Teacher-Directed (TD) / Student-Centred (SC).	46
Table 4.10: One factor ANOVA: Minutes spent on Web site/Difference between pre and post-test knowledge scores.	46
Table 4.11: Ages and means of pre and post-test knowledge scores.	48
Table 4.12: One factor ANOVA: Students ages/Difference between pre and post-test knowledge scores.....	48
Table 4.13: Gender of participants and means of pre and post-test knowledge scores.	50
Table 4.14: One factor ANOVA: Gender/Difference between pre and post-test knowledge scores.....	50
Table 4.15: One factor ANOVA: School/Difference between pre and post-test knowledge scores.....	51
Table 4.16: Participants by school with means and standard deviations of pre and post-test knowledge scores.	52
Table 4.17: One factor ANOVA: Experience with computers/Difference between pre and post- test knowledge acquisition scores.	52
Table 4.18: Experience with computers and means of pre and post-test knowledge scores.....	53
Table 4.19: Computing skill level.....	54

Table 4.20: One factor ANOVA: General computing skills/Difference between pre and post-test knowledge acquisition scores.....	54
Table 4.21: One factor ANOVA: Internet usage level/Difference between pre and post-test knowledge acquisition scores.....	56
Table 4.22: One factor ANOVA: Internet usage level/Difference between pre and post-test knowledge acquisition scores.....	56
Table 4.23: Change in attitudes towards going to university	58
Table 4.24: Change in attitudes towards visiting an ECU campus	59
Table 4.25: Change in attitudes towards enjoyment of going to university	60

Figures

Figure 2.1: Flowchart of the RAECU Web site.	23
Figure 2.2: Screen shots of the Flash animated introduction sequence.....	23
Figure 2.3: Screen shot of the Main menu/Index page (level 1).	24
Figure 2.4: Navigation bar at the top of each RAECU screen.	24
Figure 2.5: Frequently Asked Questions (FAQ) section (level 2).....	24
Figure 2.6. Screen shots of who, why, what, where, when and how trails (level 3).	25
Figure 2.7. Screen shot of teachers' strategies section.....	26
Figure 2.8. Screen shot of RAECU Bulletin Boards:	27
Figure 4.1: Where students access the Internet.	38
Figure 4.2: Number of Internet access points for individual students.....	38
Figure 4.3: Pre and post-test score comparisons ordered by difference.....	42
Figure 4.4: Knowledge retention comparison (changes from pre to post surveys).....	42
Figure 4.5: Strategies utilised when visiting the RAECU Web site.....	44
Figure 4.6: Time spent of the RAECU Web site visit.....	47
Figure 4.7: The ages of the participants.	48
Figure 4.8: The genders of the participants.....	49
Figure 4.9: Numbers of student participating from each high school.	51
Figure 4.10: Students' experience with computers (self-ratings).	53
Figure 4.11: Students' general computing skills (self-ratings).	55
Figure 4.12: Students' Internet usage	57
Figure 4.13: Students' Internet usage (self-ratings).....	57
Figure 4.14: Changes in attitude to visiting an ECU campus.....	59

Abstract

This study sought to evaluate the user experience of the Race Around ECU (RAECU) Web site (Seddon, Grant, Kosh, White & Hunt, 2000) <http://www.ecu.edu.au/pa/raecu>, in an attempt to understand the extent that a web-based solution can enhance high school students prior knowledge of the issues that students encounter during transition to university and how effective the site is in raising their aspirations to attend university. It sought to determine the extent to which the provision of Web promoted engagement and to explore the extent to which teaching-strategies that support the integration of Web site use within existing class structures and curriculum objectives, could raise student knowledge and awareness of university life and transition.

This was undertaken by surveying groups of high school students before and after their interaction with the RAECU Web site and comparing the results. Two methods of Web site interaction were used - guided and unguided, to try to determine how teaching strategies might make a difference in the level of knowledge retention.

The surveys focused on transitional issues and the RAECU Web site's efficacy upon student engagement and preferential use of the Web site. Additional questions sought some level of student understanding of the Web site's content. The efficacy of Web site's accessibility was considered in terms of student level of Internet and Computer Technology (ITC) skills.

CHAPTER 1

Rationale

Universities and the wider community are turning more and more towards the Web to disseminate and obtain their information. As this switch to computer-based information dissemination continues learning environments are likewise changing. According to the Education Department of Western Australia's 'Technology 2000 Strategy', all schools in WA now have the capacity to connect to the Internet although some very remote schools experience difficulty maintaining a reliable connection (Education Department of Western Australia, 2000).

The broad problem areas experienced by students in transition to university are well researched and documented and the challenge is how to best facilitate solutions. Most students are now engaging quite happily with the new technology and it is appropriate that online solutions may be put into practice. This study sought to consider how the World Wide Web might be used as a tool to engage students successfully in targeted programs.

Transition is a major problem

Research has shown that alarming percentages of first year university students have an unhappy start to their studies (Pargetter 2000). The problems have been well defined and the causes have been reasonably identified and the focus is now on the methods and implementations that can improve the situation. Pargetter et al. (1998) finds "first year is a stumbling block for many students, and in particular those students with no prior experience of higher education".

Student beliefs about success at university are an important issue in transition for high school students. Doring, (2000) theorises "Success at university is usually described in terms of grades or degree completion. For the individual student, part of their motivation seems associated with particular beliefs about success including its causes" (p. 1). Doring, also suggests that students' pervasive beliefs about success will affect what they become involved in, the way they go about these activities, and the levels of satisfaction or dissatisfaction they derive.

If it is possible by intervention to adjust certain beliefs about successful transition, how should this happen and what medium and strategies should be used to effectively communicate them to

the students? To gain an understanding of what is presently being done to understand and deal with transitional problems a review of pertinent literature was undertaken.

Review of literature

On transition from high school to university

The problems faced by High School students during transition to university are many and complex. They encompass the barriers brought on by financial, institutional, physiological and psychological issues that impact on students during the move to a university environment. It is not a new field of study - see for example Powell (1979), but one that has become increasingly important for institutions to tackle successfully and provide improved efficacy for students.

In support of this vigorously renewed interest in transition a symposium was held in San Diego by the Society for Research on Adolescence titled *Psychosocial Aspects of the Transition to University* (1998). Out of this symposium grew a special issue of the *Journal of Institutional Research* (May 2000). Merran Evans (Evans, 2000), provides a convenient literature review of transition to tertiary study.

The editors of that special issue, (Calderon & Dobson, 2001) argue that "in Australia, Europe and the US, transition relates to the successful movement of students from secondary to tertiary education" (p. x) and that in many developing nations it chiefly refers to the movement from primary to secondary school (Evans, 2000). The focus of *this* literature review is on the Western perspective of transition from secondary to tertiary education. It looks at the current research into problematic attributes of transition and then at the communications strategies used to relay them. Of particular interest to this study are the strategies that are being attempted using the World Wide Web.

Most of the literature surrounding the issues of transition is centred on the period from the first day of university onward, usually to the end of the first year, but with the help of others will argue the need for earlier introduction to transitional issues.

Work has been done on the rates and reasons for attrition during transition by Yorke (2000) who notes that failure is generally gauged by non-completion, often with little emphasis on the reason. In the same study Yorke also put forward that institutions do not always place enough

emphasis on inducting students, and on the first year experience in general. Together these two studies lend weight to the argument that there is a greater need to look at the causes of transitional problems rather than the outcomes. Pargetter's study (2000), looks from the schools' perspective and tells us that "an alarming percentage of first year students battle with the situation and have an unhappy start to their studies" (p. 14). Pargetter poses a solution with the idea of introducing a "transition charter to smooth the way to university" (p. 19) intended not so much for universities, at which a charter of good practice for courses, disciplines and institutions is common place, but in high schools where there is a need for better student precognition of transitional issues. "It would seem that what happens at school matters" (p. 16). He also notes that "with Year 12 being such a pressure year that the activities need to gently start in the early secondary years" (p. 17).

The issues seen to be effecting transition are of a similar nature in developed nations. A major study carried out in the UK by Watt and Paterson (2000), of the top 70 practitioners/decision-makers in higher education in the United Kingdom, suggests five major areas for concern:

- Pre-entry guidance
 - Qualification frameworks and transfers
 - Structural barriers and flexibility
 - Attitudinal barriers
 - Student finance and institutional finance
- (Watt and Paterson, 2000)

Recent studies in Australia show similar considerations. James (2000, p. 81) looked at how school-leavers choose a preferred course at university and uses terms like:

- Obtainability and optimising opportunities
 - Perceived course quality
 - Advice of others
 - Opportunities for flexible study
 - Campus location
- (James 2000, p. 81).

The main categories that James defines can all be keyed into the UK framework of Watt and Paterson (2000). Indeed within these overarching concepts others are slowly addressing the dichotomy of issues that arise from Watt and Paterson's five areas. Another broad category it

seems they omit from their list is that of social barriers. A student's social integration is of key importance to successful transition. Kantanis (2000) shows in her work on student social adjustment that the common expectations of first year students are: meeting new people, having fun, enjoying a freedom to their learning environment, mental stimulation and exploring interesting new subjects. She also finds from a companion study that nearly 70% of new students' expectations have not been realised (p.102). There is noticeable and likely correlation with Pargetter's (2000) assertion of "alarming percentages of first year students battling with transition and having an unhappy start to their studies" (Pargetter, 2000, p. 14).

In Australia it would seem non-completion rates are substantial in the first year of university study. Although no national figures for non-completion/failure rates in the *first year* are available, an omni-national report from the Scottish Higher Education Council (2000) states that in Australia, one university referred to 1st year non-completion as being high and another referred to the effort made to minimising drop-out rates at that stage. One university referred to non-completion/failure rates being in the range of 5 per cent to 40 per cent depending on the course, with a modal rate of around 20 per cent. Leeds University (1997) put it as averaging 10 per cent.

These are alarming figures when university places are coveted so highly. Leeds University (1997) praises itself for having only 7% non-completion, beating the English by 1%. Pratt (1978) infers that typical statistics suggest that 30% to 40% of those who enter postsecondary education may drop out, interrupt or fail to complete their program of study. Along with these kind of figures has come the drive to improve transition empathically. A project commissioned by The Department of Employment and Youth Affairs (1997) carried out by McInnis and James (1995) focussed on the first year university experience. Some of the efforts being made to ease transition are motivated by a utilitarian determination to reduce attrition rates, but much of it arises from a humanitarian desire to smooth the transition to university.

Kantanis (2000) gives an analysis of some of the causes laying much of the blame at the lack of prerequisite social skills (p.103-109). It would therefore seem sensible to apply some pre-emptive intervention to foster and enhance these skills. To add further credence to the argument that all issues of transition should be encountered by students much sooner than the last few months of secondary school Pratt (2000) relates that student prior knowledge and expectations are related to subsequent success in adjustment (p. 2).

It has been suggested that the first years of high school are not too soon for an introduction to take place. Based on information from the Californian Post-secondary Educational Research Commission (1996), The University of California reports on its Early Academic Outreach Program that it has encountered an overall 22% increase in enrolments since 1990. Much of this, they report, is attributed to a university preparatory curriculum in Californian schools that infiltrates all high school years.

Minority issues

Transitional issues that are of concern to the majority of students are also often researched from the unique standpoint of various minority groups such as low socio-economic environments, physical disabilities or the geographically challenged. Long (1994) and McMahon (1990) both focus on transition in distance education. O'Dowd (1996) and West (1985) look at the problems faced by students with physical disabilities. Price et al. (1992) and Lewis (1994) focus on minority groups and ponder the ethnicity experience, especially non-English speaking issues and socio-economic concerns.

Student finance

Student financial problems are seen as one of the top five issues for school leavers. Research in the US by Astin (1980) looks at the impact of student financial aid programs on student choices and finds that even low-interest, long-term student loans do not remove the deterrent of high fees. An assessment report commissioned by the National Board of Employment, Education and Training (NBEET) (1992) concluded school-leavers living and course costs, and inadequate money featured prominently as factors likely to frustrate applicant's intention to undertake their chosen course. West *et al.* (1986) found "withdrawers gave financial problems as their most important reason" (p. 180).

Information and the Web

Vincent Tinto (2000) argues that most learners experience university as isolated learners whose learning is disconnected from others and that the courses many student take are done so in an unrelated fashion and overall are not very involving (p. 1). Tinto considers the impact of learning communities on student success in higher education and how they can change the way students experience the curriculum. Tinto (2000) is particularly interested in the pedagogical

concerns of transition and how a better consideration of pedagogical issues will improve institutional efforts. McLoughlin and Oliver (1998) attest theoretical support for the collaborative and social aspects of computer use is essential if pedagogical approaches are to be developed for technology supported learning environments. This meshes with Fetherston (2001) who challenges educators to use the Web with consideration for pedagogical concerns as well as utilising sound instructional design practices.

On communication methods of transferring transitional information

In the past most transitional information has been presented to students primarily using booklets, pamphlets and other printed media. Sometimes a human presenter accompanies the material. Most universities and indeed most schools are engaged in some form of transition assistance program specifically aimed at prospective students from high schools. Although much design goes into perfecting the materials they have not changed in many years.

The most obvious instrument for information transfer in this new millennium is the utilisation of the instant and multimedia-rich environment that can be developed on the Internet. The technological options provided by the Web for transferring information continually improve and become more extensible. With the development in browser-based programming tools and languages, eg: Macromedia's Flash and Shockwave, or Sun's Java, the ability to produce more complex interactive information spaces is likewise increasing. The technological increases may allow modern educational theories to be better implemented in multimedia solutions.

Most universities have some of their Extranet space devoted to information for prospective students, but this is often where the transition issue ends in an online context. To make the best use of the WWW in a transitional setting requires the careful integration of all the solutions to the causes of transitional problems that have been identified in the literature with sound pedagogical and instructional design practices and principles of good multimedia. A tall order, but all this is technically possible and with the WWW posed to be the most powerful means of extrasomatic information processing we have yet encountered (Fetherston, 2001), universities and students alike may benefit the information and communication the WWW can bring to transition activities.

Learning is a contextualised and language mediated social activity. Clulow (2000) considers the need for socialised interaction with the high school students. In her accounts of a *peer tutoring program* she found that, "several students commented on the empathetic approach of the

Supplemental Instruction leaders which enabled for participants, a freer flow of questions, less inhibition to participate, greater confidence that their problems were not isolated examples and better understanding" (p 98).

Clulow (2000) suggests that "if material is presented in a well-scaffolded environment of cognition-rich circumstance the participants are more likely to evolve the required insights to successfully take on university" (p. 99). The WWW has shown to be an excellent conveyor of media-rich content allowing instructional Web designers to cater for cognition-rich circumstance. Some tertiary institutions train student ambassadors to liaise with high school students to provide assistance and support with transitional activities. Ambassadors can use the Web asynchronously via bulletin boards etc. to provide a well-scaffolded environment. These two attributes suggest that the WWW would be a viable vehicle for Clulow's considerations of good presentation. Campbell (1998) attests to the benefits of using Asynchronous Learning Networks (ALN's) to "include strategies where learners are separated by time and space but joined by common interests and electronic communication with each other and with coaches".

A cognition-rich approach strengthens the reasoning for a Web-based tool that involves students with the diverse information and resources that are already part of the normal university's network. This further encourages a Web site with a design ethos which generally *does not* reproduce information that is already in existence on the university's network, but instead, links it together in a style that is target-audience centred.

As well as diverse media and interface considerations there appears to be the need for more development of online learner-centred environments that support knowledge construction and employ the tools of virtual community to aid in engendering transitional knowledge and prerequisite skills. A constructivist approach takes into account that learning is a social construct mediated by language via social interactions (Prester & Moller, 2001). McLoughlin and Oliver (1998) determine that the constructivist approach "reinstates learning by discovery" (p 1). Papert's notion of constructivist learning cited in McLoughlin and Oliver (1998) adds that "each time we prematurely teach a child something they would have discovered themselves, the child is kept from investigating it and consequently from understanding it completely." (p. 2).

Making use of the Web to enhance the pre-emptive education by providing enjoyable, socially driven, learning environments may be a very powerful tool. Although the Web is naturally very conducive to discovery learning, it must be utilised appropriately to be effective.

Some existing solutions

There are many programs in operation to help with transition using many different methods to communicate information on a gamut of issues. The focus of this study is on Web-based solutions and so a review of what is on offer has been engaged in. Most universities have a Web presence and their respective Web sites almost always offer information for prospective students. What most of these Web sites do not offer is a discovery-based and engaging learning environment in which to encounter the information.

According to the Nielsen/NetRatings Service (2000) which account for more than 90 percent of the world's Internet users, the United States has an online universe of 165 million active users, followed by 49 million users in Japan, 24 million in the UK and 9.7 million in Australia. With the USA being the majority contributor to the Internet it is no surprise that they dominate the Web in the area of transition. They are well funded by a service-orientated consumer with high accessibility to technology. As the following examples show, Australia is also increasingly active in research to provide a proficient web-based solution to transition support. In the main these university sites provide transition students with information to support off-line activities and go beyond a basic prospective student information set. Some of them attempt to go further by providing online activities and even interactive learning environments for example (Oregon State University, 2001).

A common solution enacted in the USA is to bring new (freshmen) students onto the campus some time before the commencement of the first semester. The atmosphere and format is usually one of a school camp, whereby the students are introduced to college life through a series of group activities in and around the actual environment they will be in during their degree. This test environment is well organised and structured unlike the freedoms they will encounter when they start their studies proper. The camps often include existing student mentors. An example of this type of mentor-lead transitional program is the Creations 2001 summer Orientation Program (Bradley University, 2001). These types of attentive, well-organised programs are quite expensive to run and are only generally available to the top end of the fee-paying market.

The University of Huddersfield in the UK offers its community a Web service to register for a visit to their campus or have the university representatives visit your school. The site also offers mentoring, tutoring and Ambassador schemes (University of Huddersfield, 2001).

Washington University provides a very informative site that even includes a list of what to bring if you are staying in dormitory accommodation. Although it is very comprehensive in its breadth of information it lacks any design considerations to engage users effectively (Washington University, 2001).

There are other solutions in the US, which are more accessible to the general population: The UCLA Outreach (University of California, 2001) takes transition to the high schools of California in a program of integrated introduction. This program takes the attitude that awareness of tertiary transitional issues should commence as early as the beginning of secondary school. There seems to have been a marked increase in their enrolment numbers, which is attributed largely to the program's activities.

Oregon State University (2001) offers a personalised, media-rich and more interactive site, which provides more than simply information, but also ways to explore it, for example incorporating QuickTime QTVR® panoramas that offer spatial orientation of their campus and environs. Oregon State University also links other off-line activities to the site such as their parent-targeted Dad's Day program. The Website even tries to evaluate the success of one's transition in an online quiz. Even if the quiz is a little dubious the element of feedback should prove useful. Smith and Ragan (1999) suggest that feedback is a critical event in instruction, especially in the case of informative or informational feedback.

The University of Minnesota (University of Minnesota, 2001) attempts to tap into the social benefits of convivial college community with an exhaustive section about student groups, events and appropriate contacts. This approach may go some way to alleviating students' preoccupation with and concern for the loss of or change in pre-college friendships. Paul and Brier (2001) term this "friendsickness" and in a short-term longitudinal study of 70 first year university students, found that it was a significant source of distress during transition. Paul and Brier (2001) warn that friendsickness can be a cause of heightened self-doubt and disappointment and even encourage self-defeating habits.

Monash University in Victoria offers a very comprehensive Web site and is at the forefront of transitional research in Australia. The Monash Transition Program, (Monash University, 2001) was the most thoughtfully designed of all the sites visited for this review. It attempts to include all the attributes of transition as well as present them in an audience sensitive way. At least this is true of its linguistic content. The visual presentation on entry is somewhat institutionalised, but on exploration it reveals a wide variety of media to put its message across and includes an excellent glossary of terms. The Monash Transition Program Web site's content is media rich.

With the introduction of well thought out strategies to enable teachers to utilise the Web site in the classroom it would support constructivist-teaching practices well.

Interestingly, The Monash Transition Program has introduced the American style orientation camp to bring new students onto the campus some time before they begin their first semester of study and endeavour to infuse them with the skills and ways of academic life.

Summary

In general, existing online solutions offer categorically suitable information. Few of the existing online solutions offer engaging interactivity with the information or are designed as an effective learning environment. Within all this the pedagogical considerations seem scant. Another problem still seems to be one of user motivation to view such Web sites in any depth and engage with the appropriate material at an appropriate level and at an appropriate time.

There are many issues in the specialised literature on the problematics of transition, including all manner of financial, intellectual, physical and psychological considerations looking from both internal and external standpoints. The bulk of the literature can be seen to focus on particular aspects of transition with only a little work of a holistic nature. The first section of this review has indicated the specialised problems of transition and the reasons for them. They are reasonably well researched and recorded and so the focus is now looking into the methods and implementation of solutions.

As implementation can now be based on the Web the second part of the review has focused on how the Web is being used to provide information and assist transition. Searching the Internet for existing solutions found that although every institution had some form of web presence the cohesive pedagogical considerations were low, except for a few exceptional instances (e.g., The Monash Transition Program, 2001; and Oregon State University, 2001). These exceptions were usually also the institutions that were also conducting research into transition. The less exceptional sites often boasted a particular component, but the pedagogical cohesiveness of their design does not cover the whole site.

Attributes of Supporting Transition Students

From the research into the problems of transition and the solutions that are being practised to ease them one can begin making an inventory of attributes and design considerations that may

promote appropriate precognisance and smoother more successful transitional experience for high school students (Table 1.1).

Table 1.1 shows the broad areas that appear to need attention in preparing for and engaging with transition to university successfully:

Table 1.1: Attributes of supporting transition students

Attribute of support	Supporting Reference
Pre-entry guidance	Watt and Paterson (2000); James (2000)
Equitable qualifications and transfers	Watt and Paterson (2000) ; James (2000)
Structural barriers and flexibility	Watt and Paterson (2000) ; James (2000)
Attitudinal barriers	Watt and Paterson (2000) ; James (2000)
Student finance and institutional finance	Watt and Paterson (2000)
Social issues	Astin (1990); West (1986)
Family issues	James (2000)
Isolation factors	Paul and Brier (2001) "friendsickness"
Favourable decision environments	James (2000)
Pedagogically sensitive learning environments	Fetherston (2001); McLoughlin (1998)

Attributes of a good solution

From this framework a successful solution appears to require certain attributes; that is to say, there are certain problems to be addressed in order to promote the best chance of a successful transition to university. Use of the World Wide Web (WWW) and Web-based solutions can provide stimulating, media-rich learning environments that attend to a set of learning objectives. With the help of the literature and existing online solutions applicable media attributes could be sought to exhibit good solutions. Based on these considerations an ECU student group attempted to build such a Web site.

CHAPTER 2

A transition Web site

The Race Around ECU (RAECU) Web site (Seddon, Grant, Kosh, White and Hunt, 2000) was created to help increase the precognisance of high school students in transition to university. The belief was that such a web-based tool might improve the success of those who actually do progress to university as well as present university as an option to those students who may not have perceived it as one before.

The Web site contains information on transition to university, which is organised around a framework of the classic questions: who, what, when, where, why and how. This structure allows information to be arranged into trails of related information. In addition, the different sections are linked appropriately to other information sources on the university's network. The benefits of linking up to existing information are savings in the time and cost of information reproduction and that content is generally managed externally to the RAECU site. In essence the Race around ECU Web site strives to act as an audience-targeted portal to university information that might otherwise seem inaccessible for students outside the university's system proper.

RAECU attempts to foster natural interest by providing students with a way of accessing information that is organised and presented in a manner that is pertinent for them in real life, while at the same time is situation-sensitive.

The design encourages students to explore the information space, allowing them to interact at their own pace. The site strives to be fun and non-threatening by not relying on lengthy forms of instruction and *not* involving intimidating decisions at this stage of the transition adventure. Instead it endeavours to provide information, social activities and interactive services that should encourage natural inquisitiveness. The design also leans towards a style of layout that students may associate more with Web sites they visit on a recreational level. An inter-high school Web site (WebShow) competition that involves students in university issues is also part of the Web site to help increase the fun factor. The configuration of the tasks in the WebShow Competition is attempting to harness the power of narrative knowledge construction, the benefits of group collaboration and student comparisons.

The target audience is intended to find the RAECU Web site attractive. It is not designed as formally as most Web-based university information. The graphic style and content is targeted towards the age group both in colour and content. The autonomy of the site from the rest of the university network also enables the Web site's design to change its suit without affecting the bulk of the underlying information.

The RAECU Web site is fairly brief in its *own* content with the aim of providing a coverage of the basic important (declarative) information about transitional issues and then offers direction and opportunities for further exploration. With a quick overview of the topics and issues, users may be better positioned to profit from their encounter with the rest of the university's system.

Bulletin boards monitored by university ambassadors were included in the Web site to help foster an element of virtual community (VC), which in turn promotes ownership of the space for students. The nature of community in on-line environments is intended to affect the character of the Web site and result in much of the content being generated by the students as they share information and interact with ECU student ambassadors. In turn it was intended that this approach would engender information discovery and breathe life into the Web site, making it more self-sustainable.

RAECU Web site design

The way in which the RAECU Website is composed to function as a student orientated portal to ease access the wider ECU network can be portrayed in a flowchart (Figure 2.1). The first level or site entry lays out accesses the entire Web site. The second level contains a Frequently Asked Questions (FAQ) section that gives access to the main trails of information as well as access to the other media and activities that are contained in RAECU web site. The third level houses most of the transitional information and also acquaints students with appropriate links to content existing on Edith Cowan University's Web-based network.

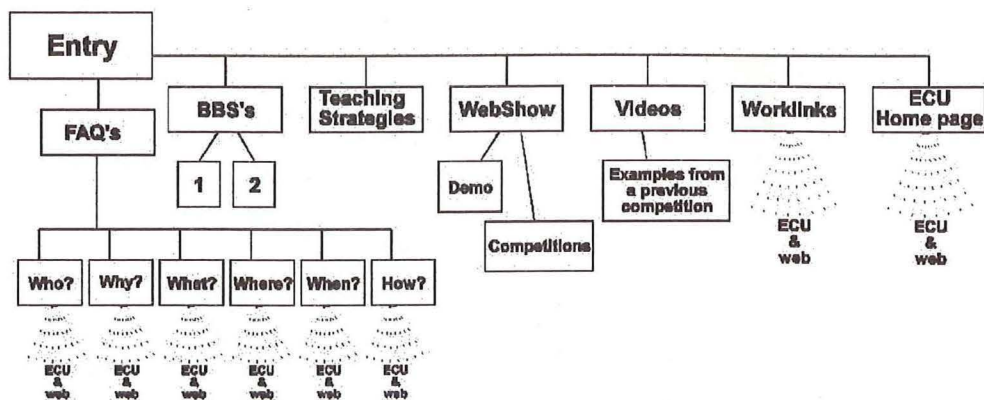


Figure 2.1: Flowchart of the RAECU Web site.

Elements of the RAECU Web site

The initial media item encountered on the RAECU Web site is a sequence of Flash® animation (Figure 2.2), with a soundtrack composed to gain the attention of the intended audience by being quick paced, up-beat and contemporary. Vibrancy of the colour is also aimed at the attraction of the particular age group.



Figure 2.2: Screen shots of the Flash animated introduction sequence.

The main menu of the Web site (Figure 2.3) is uncluttered with pictorial links to various sections of the Web site.



Figure 2.3: Screen shot of the Main menu/Index page (level 1).

Once within a section of the Web site one-click access to other sections is available from a navigation bar at the top of each screen (Figure 2.4).



Figure 2.4: Navigation bar at the top of each RAECU screen.

The Frequently Asked Questions section (Figure 2.5) provides access to the main streams of information and is presented in a non-linear way that promotes a discovery approach, which is sympathetic to constructivist teaching theories.

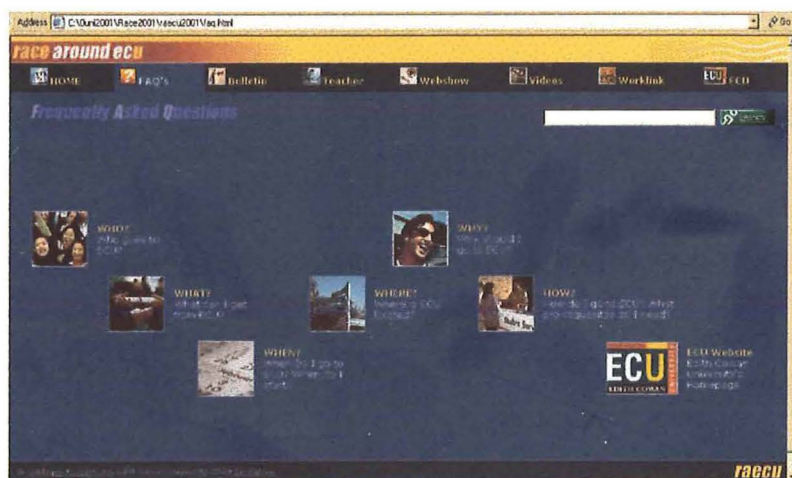


Figure 2.5: Frequently Asked Questions (FAQ) section (level 2).

Contained in the third level are the main trails of information. The information is segregated into the classic framework of who, why, what, where, when and how (Figure 2.6). Contextual links are provided to navigate users to appropriate content on the main ECU web-based network.



Figure 2.6. Screen shots of who, why, what, where, when and how trails (level 3).

To further encourage the constructive use of the Web site a section offering teachers strategies is included (Figure 2.7). They are designed to help teachers make use of the Web site within their existing curriculums. For example, the *jigsaw strategy* invites the students to work as a team of 6. Each student should follow the trail of one question:

- Who?
- Why?
- What?
- Where?
- When?
- How?

Students should then collaborate and combine their separate pieces of information to produce a report on ECU life.

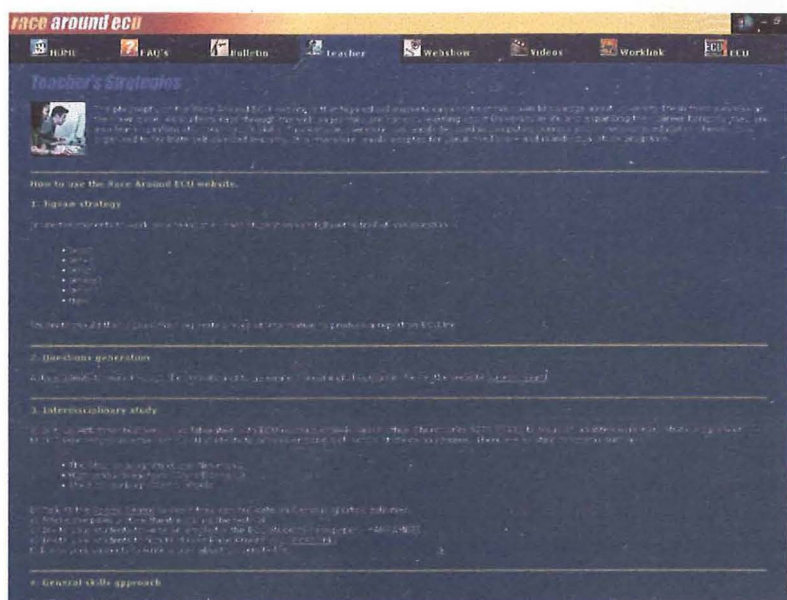


Figure 2.7. Screen shot of teachers' strategies section.

The Race around ECU Web site includes two bulletin boards for students to post questions concerning transition. The bulletin boards are monitored by trained ECU ambassadors who are sympathetic to the needs of the target audience having recently experienced many of the problems for themselves. ECU Ambassadors respond when needed by providing answers to questions, correcting misinterpretations or offering further contact advice. There are two separate boards available for use: one a general questions area and the other a board entitled the 'Simply simple questions' to encourage participation of students or parents who may feel that their present lack of knowledge makes posting a question uncomfortable, a problem that especially applies to those for whom English is a second language. A further aim of the bulletin boards are to enhance the level of community that the Web site can embrace, thereby fostering the Web site as an active communications hub between the university and high schools (Figure 2.8).

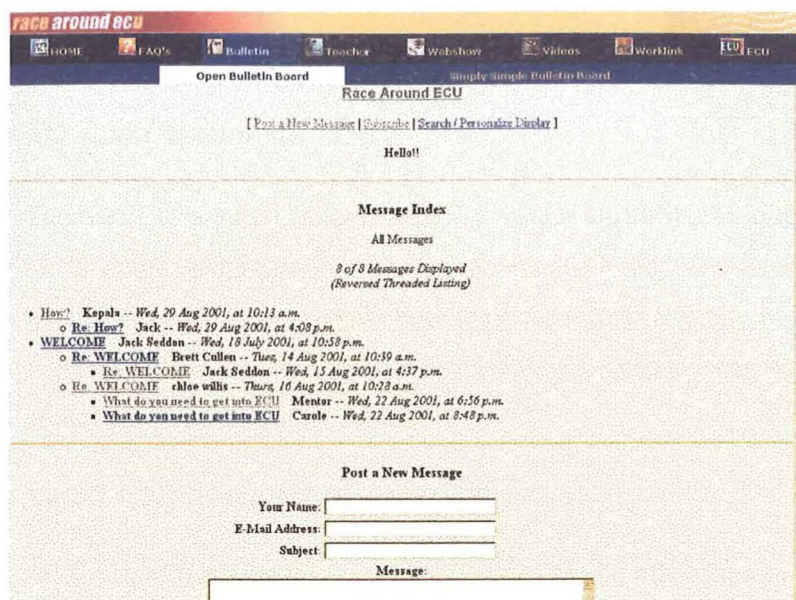


Figure 2.8. Screen shot of RAECU Bulletin Boards:

The RAECU solution

The RAECU solution endeavoured to consider the attributes of transition and include germane media components that would assist students with the transitional problems they encounter as well as motivate them to explore these issues further. This study sought some insight into how the media elements and activities of the RAECU Web site can be further improved to achieve a more successful solution (Table 2.1).

Table 2.1: Attributes of transition and media solutions

Attribute of transition	Media attributes in the RAECU Web site
Pre-entry guidance	General information and Links (DETYA – tenfields website)
Qualification frameworks and transfers	Online handbook and contact advice
Structural barriers and flexibility	Current/previous student anecdotes
Attitudinal barriers	Information and BES support
Student finance and institutional finance	Information and Links (HECS)
Social issues	Information, contacts and BBS support
Family issues	Information, contacts and BBS support
Learning strategies	Sensitivity to existing curriculum objectives

Research questions

The aims of the study were to understand how students were engaged and attracted by the RAECU Web site (questions 1 and 2). Further to this the study utilised two teaching strategies for the students to follow while using the website (Chapter 3). Question 3 attempted to gauge the influence of the different teaching strategies on students' knowledge gain. Question 4 sought to explore whether the attitudes of the students influenced the level of knowledge acquired from a Web-based solution. Question 4 also sought to determine whether prior experience with computers and the Internet had an influence on the level of knowledge students gained from a Web-based solution.

Q1. How well does the RAECU Web-based solution *engage* transition students?

Q2. How well does the RAECU Web-based solution *attract* transition students?

Q3. To what extent does the form of implementation (Teacher-directed or Student-centred) influence knowledge gained by students about life at ECU?

Q4. What influences the level of knowledge gained from this Web-based solution?

- i. Prior experience
- ii. Information Technology and Communication (ITC) skills of users
- iii. Attitudes of users

To answer these questions, a study was planned which involved having students use the RAECU Web site and gather data to explore how various factors influenced the level of knowledge retained. The analysis of the obtained data compared pre and post responses concerning attributes of engagement, attraction and students' ITC skills with the form of teaching strategy implemented. The post questionnaire also sought opinions concerning the efficacy of the RAECU Web site

The study administered two questionnaires (see appendix A). The following chapter describes the methodology of sample selection, instrument development, instrument implementation, data gathering and the process of analysis.

CHAPTER 3

Methodology

Instrument development

An instrument was developed to provide data for the study in the form of two questionnaires. The first questionnaire was administered to students before the intervention of visiting the RAECU Website and the second questionnaire was conducted after the intervention (both questionnaires may be found in Appendix A).

Content and constructs

Contents for the questions were drawn from the RAECU Web site to ensure that they were fair within the experimental conditions. Care was taken to make sure that the answers were within the RAECU Web site and not from the wider ECU network. The survey questions may be separated into construct groups that relate to the stated inquiry. Table 3.1 shows the relationships between the research questions and their constructs. The table also shows which questions on the two instruments support the constructs and this acts as a validation device to ensure the collection of data relevant to the study's intent.

Table 3.1: Correlation of research question constructs and the administered surveys.

Research question	Construct	Survey questions	
		Pre questionnaire	Post questionnaire
	Demographic information and consent formality	Age, gender, school, signature.	Age, gender, school, signature.
1	Engagement by Web-based solution	Not on pre questionnaire	20, 23, 25
2	Attraction to a Web-based solution	Not on pre questionnaire	23, 26, 27 29, 30
3	Web site visit Implementation (teaching strategy)	Not on pre questionnaire	21
3	Web-based delivery (knowledge of universities contained on RAECU Web site)	1-15	1-13

Research question	Construct	Survey questions Pre questionnaire	Post questionnaire
4(i), 4(ii)	Influence on knowledge gained (prior experience and ITC skills)	1	Not on post questionnaire
4(iii)	Attitudes (towards university and Web site)	16-20	15, 19, 23-31
5	Re-affirmation of previous research	17-20	14, 16, 17
* Both pre and post questionnaires may be found in Appendix A			

Sequence of questions

The sequence of the items on the instrument was determined by establishing the demographic items first and then grouping the questions by their research question constructs. An effort was made to locate the simpler items at the beginning of the instrument, in order to keep the cognitive load low as students began, allowing them to warm to their task.

Respondents were allowed to have a middle/average position when it was seen as a valid response. There could have been allowance for a 'don't know' position on some questions where there was not, but items in this category were judged to be clear and concise and it was felt that the absence would not be detrimental to the efficacy of the tool.

During the development of the questionnaires consultation was sought from academics who had previously conducted similar research on transitional issues. The process took the form of one on one meetings, where the surveys were examined and then oral feedback requested. The feedback was discussed with the reviewer and notes made to assist with subsequent drafts. This was then followed by several review sessions with my supervisor until we were satisfied with the instrument's content, format and length.

Choosing the sample population

To create the sample pool the Careers Officers of 12 metropolitan high schools were contacted by phone. After giving an explanation of the proposed study and its purpose they were asked if they could facilitate by organising a class or two of year 10 or 11 students to participate in a one-hour session. Initially 6 schools agreed to participate, but one dropped out due to their curriculum constraints. Of the five schools that did participate there were a total of 123 administrations. To be considered valid a respondent was required to complete both the pre and post questionnaires and have visited the Web site between them. One class of 16 students was

not able to complete the post questionnaire and was therefore discarded from the pool. One other student turned out to have been banned from using the Internet and did not view the Web site. After consultation, with the teacher and student, it was decided that this single student's response was invalid and was also discarded from the analysis pool. The final analysis consisted of 106 valid responses.

Internal validity

The ultimate sample of 106 responses over 5 schools was a random representation of the population, in that the schools involved were selected for no particular characteristics, except to include two private schools in the final amalgamation. The randomness of the sample was intended to ensure the reliability of the responses. The eventual composition of the survey pool was due to the process of enlisting the schools. The main reason given for schools not participating was curriculum constraints related to available time.

Test effects

Procedural effects that impacted on the surveys include that the time between the pre and post questionnaires was minimal with both being completed within the same session (visiting the Web site between surveys). This meant that as students responded to the post survey could hold a cogent impression of how they answered in the first and this might affect their answers. On the other hand this may also allow the respondents to better consider their answers and to be more aware of changes in their opinions. Classically it may have been more desirable to separate the questionnaires in time, but the logistics of school involvement kept this from happening. The time available constrained the depth and length of the questionnaires and may have restricted its ability to fully answer all aspects of the research objectives.

All survey sessions were conducted in the respective school's computer labs under normal computer lab conditions. The introduction given was the same for all the groups. Students were offered help in understanding questions if necessary but were not directed to an answer. All the computer equipment used was of comparable capacity and quality. Although there was some difference in the schools server speeds it should not have had significant impact. The differing of server speeds is also a normal occurrence and therefore a real and not an induced affect. Some school servers would not allow the download of certain media, eg: videos or streaming media and this effectively disabled the viewing of some on the RAECU Web site. However it

was decided that the affected components did not contain crucial survey information and so these responses were still deemed valid for inclusion.

External validity

The use of a questionnaire format to obtain data was seen as the most appropriate method of obtaining a random sample with valid and reliable responses to the questions to be asked. The questions were mostly represented by multiple-choice and Likert-scaled answers that were readily converted to numerical scores for use in statistical analysis. Some open-ended questions were used for garnering impressions of interface and content but the use of language coding was seen to be outside the scope of this study and so open-ended answers were used only in an anecdotal manner.

Scales

The scales utilised in the questionnaire were chosen for their ability to be perceived easily by the respondents and facilitate the statistical comparison of the data. A Likert scale with five graduations was chosen to keep the available spread of choices to a minimum while still providing respondents with the ability to elect one end of the scale or the another, a centred position or in between the centre and one end. The type of question that each scale was used for is also shown (Table 3.2).

Table 3.2: Instrumental scales

Scale type	Scale example	Question type
Likert scale	1 Strongly disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly agree.	Opinions of skill usage or expectations and other opinions.
Choice of two answers, (yes or no)	Was the person in a group (TD) or alone (SC) when they visited the Web site? YES/NO	Teaching strategy used for interaction with RAECU Web site (group demarcation).
Ordinal	Numerically ordering the available options.	Preferences and ranking of available options.

Instrument implementation

Upon entering a class of students and being introduced by the teacher an introduction of the purpose of the study and the method to be used was given to the students. The initial or pre questionnaire collected information from students about their attitudes and beliefs concerning:

1. Knowledge of universities
2. Web-based information on universities
3. Student finance
4. Workload and expectations
5. Social issues

Students' were then asked to visit the RAECU Web site and spend approximately 20 minutes investigating it.

The students use of the Web site took on one of two forms of implementation:

1. **Implementation one** was *teacher directed (TD)* whereby students were prompted to use a strategy while working with the Web site (eg: the Jigsaw strategy, *see Appendix B*).
2. **Implementation two** was *student centred (SC)* whereby students were directed towards the RAECU Web site and left to browse with NO formal direction.

The second or post questionnaire re-administered the same questions as the pre-questionnaire and in addition elicited Web site options and preferences, as well as, testing for knowledge retention:

Data gathering

On the conclusion of the survey administrations the gathered data were entered into an Excel97® spreadsheet using appropriately titled columns for each variable. Once all data were entered and verified the spreadsheet was exported as a plain text document for importing into StatView® version 2.0 (a Macintosh-based statistical program).

Data analysis

Statistical analysis of the returned responses consisted of:

- t-tests for comparison of pre and post scores
- Analysis of Variance (ANOVA) for comparison between variables and the teaching strategy enacted
- Percentiles – visualisation of proportionate levels.

A paired, one-tailed t-test was used to compare the sum of each respondent's scores for all the knowledge-based questions on the pre questionnaire with the sum of the scores for all the knowledge-based questions on the post questionnaire.

For analyses of variance between variables and the teaching strategy enacted, the particular ANOVA method used the Scheffe F test, which denotes the existence of an effect but not the strength of it. The confidence level was set at 95%. In this report the format of reporting includes tables showing the count, mean, standard error and the standard deviation of each group. The values for F and p and the degrees of freedom, along with whether the factor is significant or not (s or ns).

CHAPTER 4

RESULTS

4.1 Descriptive data

Sample demographics

The sample of 106 valid responses to both questionnaires comprised of 61 (58%) males and 45 (42%) females. Their ages ranged between 15 sand 17 yrs, breaking down into, 15yr = 29 (27%), 16yr = 66 (62%) and 17yr = 11 (10%) of the sample. The number of students contributed by each high school ranged between 11 and 39. When there was more than one group from a high school, the sessions were conducted separately. (Table 4.1)

Table 4.1: Breakdown of participating high schools.

Participating Schools	Respondents	Respondents	Total
	Group 1	Group 2	
School 1 (private)	10	11	21
School 2	18	-	18
School 3 (private)	17	-	17
School 4	17	22	39
School 5	11	-	11
Total Respondents	73	33	106

Students were asked to nominate their levels of previous experience with computers, general computing skills and Internet usage on a Likert scale from 1 to 5 (1 being low and 5 being high).

The cohort's average self-belief of their experience with computers was 3.58 or students saw themselves as slightly above average (Table 4.2).

General computing skills and Internet usage showed similar ranges returning averages of 3.45 and 3.64 respectively. These figures tend to suggest that high school students felt confident with computer equipment and comfortable using the Internet technologies (Table 4.2).

In terms of computer experience, the majority of students rated themselves as average or above average skills (91%). The majority of students also rated themselves as average or above for general computing skills and Internet usage showing 89% and 88% respectively. The return of above average figures for these three attributes, suggest that student's self-confidence in their ability to utilise a Web-based resource is strong.

Table 4.2: Computing experience, general skills and Internet usage (self-beliefs).

Question from surveys	(1=very poor 5=very strong)					Total %	Average Rating
	1	2	3	4	5		
Experience with computers	(1%)	(8%)	(40%)	(34%)	(17%)	100	3.58
General Computing Skills	(2%)	(9%)	(42%)	(34%)	(13%)	100	3.45
Your Internet usage	(5%)	(7%)	(35%)	(27%)	(26%)	100	3.64

The self-beliefs of experience with computers, general computing skills and Internet usage are also considered further on in this dissertation in an analysis of variance with knowledge retention scores. It was thought that those with better scores might also tend to be those students with the higher levels of experience and skills with computers. A greater Internet usage might assist with knowledge retention by those students having more advanced web navigation abilities, allowing them a more intuitive access to the knowledge content.

In general the figures for computing and Internet experience and skills show that the self-beliefs of high school students are comfortable and confident with their capacities and exposure to the new technologies.

Internet access

Students were asked to indicate the various ways in which they accessed the Internet. Figure 4.1 shows how many students accessed the Internet from particular points. Many of them accessed from more than one point. The most common access point was from school (81%) while 78% of the students also reported accessing the Internet from home. The responses for 'Other' chiefly identified 'a friends place' as an access point with one student citing they accessed at a workplace (Figure 4.1).

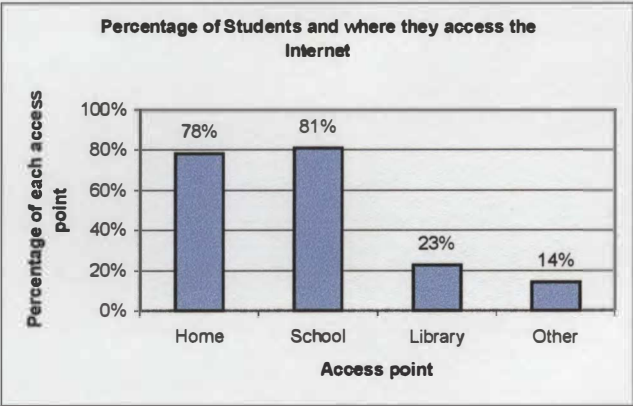


Figure 4.1: Where students access the Internet.

Many students reported multiple access points for the Internet. 56% reported two different access points and this was predominantly from home and school. For 5% of the group there were 4 or more access points. When the response was other, it was usually referring to connecting at a friend's home (Figure 4.2).

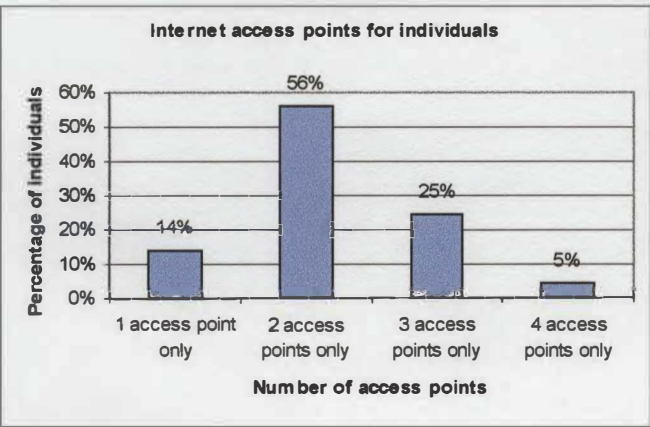


Figure 4.2: Number of Internet access points for individual students.

Teaching strategies

Strategies to put a Web-based tool to its best use are important for teachers to reduce the amount of preparation needed and to maximise the resource within the existing curriculum objectives. One teacher of a survey group related that "there was a need for a Web site that puts all the diversity of uni life in one place and makes it fun". Another of the teachers related that the trouble was seen to be one of "it's hard to get the students to spend any time going through the uni Web sites, as they get bored quickly".

A well-designed teaching strategy and captivating approach to a Web site may be one way of increasing the time students would spend browsing a site. If students are cognisant of goals and involved collaboratively before they get to a Web site, a better sense of purpose might ensue.

During the Web site intervention two teaching strategies were used, 75 students (71%) used the site with no direction other than to investigate the RAECU Website, while 31 students (29%) formed small collaborative groups and were given direction and a goal in using the RAECU Website (Table 4.3).

Table 4.3: Strategies the student used while visiting the RAECU Web site.

Strategy	/106	%
In a group - Teacher Directed (TD)	31	29
Alone - Student Centred (SC)	75	71

Time spent on the RAECU Web site

When visiting the RAECU Web site the students were allowed up to 30 minutes for their investigation. Table 4.4 provides a breakdown of the times students reported as spending visiting the RAECU Web site. A large proportion of students 44 (42%) spent 5-10 mins on the Web site and only 12 (11%) investigated for 20 mins or more. Slightly less than one quarter stayed on the Web site for only 1-5 mins and slightly over a quarter used it for 10-20 mins (Table 4.4).

Table 4.4: Time spent during visit to RAECU Web site.

Time spent on RAECU	1-5min	5-10min	10-20min	over 20min
/106	23	44	27	12
%	22	42	25	11

Preferences for attending ECU

When ranking which Western Australian Universities students would prefer to attend if they had their choice, the responses showed that ECU would be the 1st preference for 24% (25) of the students, ECU as 2nd preference scored almost identically with 25% (26). 31 students (28%) gave ECU as 3rd, and the 4th and 5th ranking receiving 18% and 5% respectively (Table 4.5).

Table 4.5: Student preferences for attending ECU.

Ranking: Preference of attending ECU					
1st	2 nd	3 rd	4th	5th	Totals
25	26	31	19	5	106
24%	25%	28%	18%	5%	100%

Comparing pre and post-test knowledge scores

An important part of the study was the intention to explore whether use of a Web site was likely to be able to improve students' knowledge in terms of the information needed to make informed decisions about university life and course choices. The literature suggested that a Web site used appropriately had strong prospects of effectively providing students with appropriate and meaningful information. For this reason students were exposed to RAECU Web site in classroom settings and scores were obtained from a pre-test and post-test so that this question could be further investigated. A t-test was used to compare the scores from the pre and post questionnaires. The implementation of these tests rendered a mean score improvement of 1.13. When this improvement was tested for significance using a t-test, the improvement was found to be significant at the 0.001 level ($t = -6.457$, $p < 0.001$), (Table 4.6).

Table 4.6: Student preferences for attending ECU.

Paired t-Test X		1 : PRE Score	Y	1 : POST Score
DF:	Mean X - Y:	Paired t value:		Prob. (1-tail):
105	-1.132	-6.457		.0001

Figures 4.3 and 4.4 provide some detailed information concerning the difference between the pre and post-tests for the students. The largest increase in overall score was 7 points and the biggest decrease was -3. For 63 (60%) of students there was an improvement, 26 students (24%) achieved no improvement and for 17 students (16%), their score decreased. The data appeared to exhibit an overall trend for a score to increase as more time is spent on the RAECU Website.

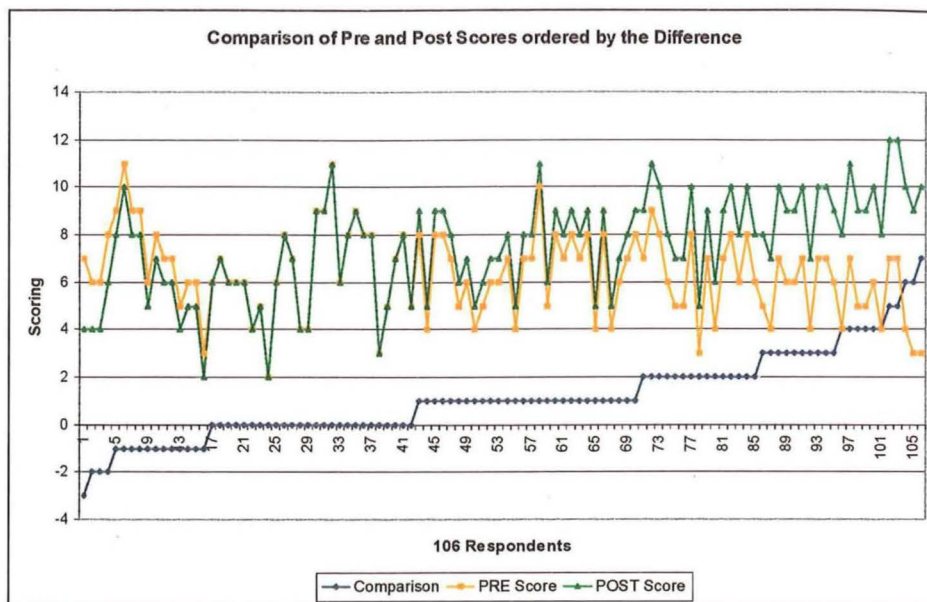


Figure 4.3: Pre and post-test score comparisons ordered by difference.

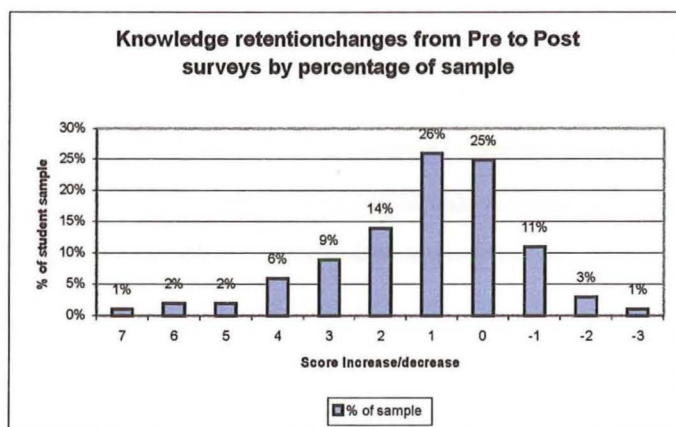


Figure 4.4: Knowledge retention comparison (changes from pre to post surveys).

4.2 Influencing factors

Overview

The study sought to establish the influence of a number of external factors on students' knowledge acquisition. To achieve this, analyses of variance were carried out on a number of factors to test for significant differences in the scores between the pre and post questionnaires. The dependent variable in all these ANOVA tests was the mean difference score for each respondent. The degrees of freedom were set to a tolerance of 95% and therefore p was seen as showing statistical significance at .05. The Scheffe F test was used to provide a measure of analysis of variance (Milton Smith, 1962).

The software used for the statistical computations was StatView® running on the Apple-Macintosh platform.

Knowledge acquisition

Enacting pedagogically well designed teaching strategies for students to utilise when using a web-based information space might lead to better knowledge acquisition. Appropriate goals can be introduced into an activity that improve students' sense of purpose. Elements of a strategy could encourage motivation and so lead to better engagement with the resource. Collaborative elements of a strategy can improve understanding via language negotiation and social intercourse. Overall the use of well designed teaching strategies can guide students' activities in a more constructivist manner, contextualising the information they encounter in a Web-based resource. With this in mind, it was felt that the implementation of the RAECU Web site in classroom settings was likely to yield different outcomes for different students and conditions. The influence of these conditions on knowledge acquisition was the focus the analyses reported in this section.

The data revealed that in the test groups 31 (%) visited the RAECU Web site using a teacher-directed strategy and 75 (%) visited the site alone with no formal direction given (Figure 4.5).

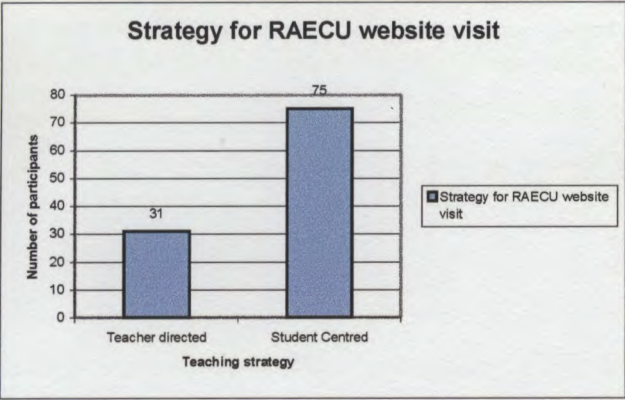


Figure 4.5: Strategies utilised when visiting the RAECU Web site.

The difference in knowledge acquisition scores between the pre and post questionnaires relates to one of this study’s research questions: To what extent does the form of implementation (Teacher-directed or Student-centred) influence knowledge acquired by students?

Table 4.7 reveals the means of the difference in knowledge acquisition scores as 1.387 for the 31 teacher directed students and 1.027 for the 75 (71%) using the student centred method.

Table 4.7: Means of knowledge acquisition scores: Teacher Directed (TD) – Student Centred (SC)

One Factor ANOVA		X 1 : TD/SC	Y 1 : difference	
Group:	Count:	Mean:	Std. Dev.:	Std. Error:
Teacher Directed TD	31	1.387	2.028	.364
Student Centred SC	75	1.027	1.708	.197

An analysis of variance was used to test for any significant difference between the pre and post knowledge scores in light of the implementation of two different teaching strategies (¹teacher directed and ²student centred). The result yielded no difference ($F = 0.873$, $p = .3522$, $df = 104$, ns), (Table 4.8).

Table 4.8: One factor ANOVA: Teacher Directed (TD) – Student Centred (SC)/Difference between pre and post-test knowledge scores.

One Factor ANOVA		X 1 : TD/SC	Y 1 : difference	
Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between TD/SC	1	2.849	2.849	.873
Within groups	104	339.302	3.263	$p = .3522$
Total	105	342.151		

The mean difference between the two groups of teacher directed and student centred was 0.36 and although this seems to show slight improvement in the students' knowledge acquisition scores the reasons for the change is unclear and not seen as statistically significant in this study.

The utilisation of teacher-directed strategies while using a Web-based information space was thought to potentially have an effect on the level of knowledge retention achieved, as it might lead to a better engagement by the user. By giving students the direction of a well designed set of goals and how to go about accomplishing them increased interest and a greater sense of purpose might be created.

Although in this study no significant difference was observed this might have been due to a range of factors. Too little time available for those using the teacher directed strategy could have been one reason. Another possibility is the clarity of the explanation of the strategy to the students. If students are unable to grasp the strategy's concept well they will most likely flounder and spend much cognitive energy in trying to decipher what is required of them and this will hinder advancement. Furthermore without a good conception of task students may not have undertaken a sufficient number of activities to significantly improve their knowledge acquisition. A perceived lack of conception of task in students from one of the high schools that contributed 21 students did not focus on the task. An insufficiency of disciplinary structure in these all-male classes may be a reason for the failure of certain students to engage in the activities. With slightly over 20% of the respondents in this category the effect may have been sufficient to skew the results.

The fact that there was no summarising activity after the exposure of the knowledge contained in the information space might also have had an effect on the knowledge acquisition level. It seems likely that if the teaching strategy utilised had attended more deliberately to such considerations, the tests might have shown significant differences.

The time available for the study may have been insufficient and lowered the effectiveness of the teaching strategy. In the study, there was an attempt to replicate classroom settings in terms of access times and access conditions but this may not have been totally successful. The need to leave time for both the pre-test and post-test limited the extent of the time students had to use with the RAECU and this may have lessened the level of knowledge acquisition. On the other hand, the vast majority of the students appeared to spend all the time they needed, or were inclined to spend with the software, so it would appear that time may not have been the limiting factor that it might have appeared at first glance.

Time spent visiting the RAECU Web site

The time that a student spent visiting and investigating the RAECU Web site was anticipated to have had a possible increase in knowledge acquisition as the time they spent increased. This is not as simple as it might seem as there are many factors that influence the time spent on the Web site eg: engagement and attraction. In this study the 23 students who visited the Web site for 1-5 minutes had a mean increase in knowledge acquisition scores of 1.087. 44 students visited for 5-10 minutes with a mean increase in score of 1.091. 27 students visited for 10-20 minutes with a mean increase in score of 1.037. The 12 students who visited for over 20 minutes returned a mean increase in knowledge acquisition scores of 1.53 (Table 4.9).

Table 4. 9: Time spent and mean differences between pre and post-test knowledge scores: Teacher-Directed (TD) / Student-Centred (SC).

One Factor ANOVA X ₁ : Minutes Y ₁ : difference				
Group:	Count:	Mean:	Std. Dev.:	Std. Error:
1-5 mins	23	1.087	2.172	.453
5-10 mins	44	1.091	1.476	.222
10-20 mins	27	1.037	1.829	.352
Over 20 mins	12	1.583	2.234	.645

The means may seem to show an upward trend with those spending the longest time visiting the Web site returning the largest mean increase, but statistical analysis did not support this.

An analysis of variance was conducted to determine if the difference was significant between the pre and post knowledge scores when compared with the time students spent using the RAECU Web site. The result yielded no difference ($F = 0.281$, $p = .8387$, $df = 102$, ns). (Table 4.10).

Table 4.10: One factor ANOVA: Minutes spent on Web site/Difference between pre and post-test knowledge scores.

One Factor ANOVA X ₁ : Minutes spent on site Y ₁ : difference				
Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	3	2.809	.936	.281
Within groups	102	339.342	3.327	$p = .8387$
Total	105	342.151		

The time students spent visiting and investigating the RAECU Web site (Figure 4.6) could be a measure of engagement and attraction and were of interest in how they might affect the first and second research questions respectively.

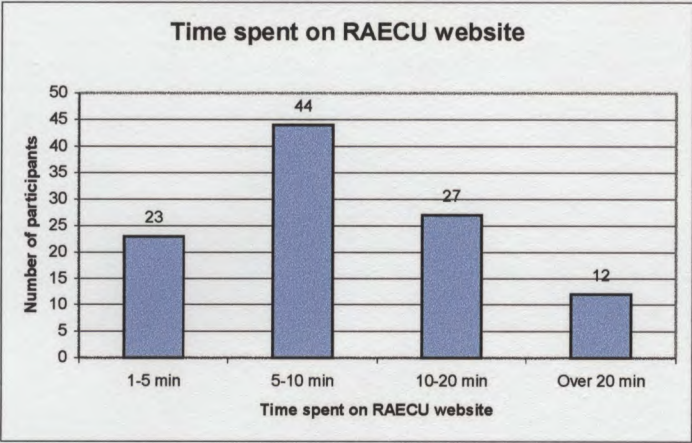


Figure 4.6: Time spent of the RAECU Web site visit

The statistical tests on these attributes showed no significance and so the hypothesis needs rejecting. However with more stringently designed settings for the tests, they might produce more conclusive results.

Influence of age

The ages of the participants were collected and examined with regard for any influence that different ages may have produced in the surveys. It was thought that there might have been differences between the ages in terms of older students bringing more advanced computer skills and this might give them advantages over younger students whilst visiting the RAECU Web site. Similarly the older students might have more advanced metacognitive skills and awareness of their learning processes and this might allow them to use a given strategy more effectively.

The students participating were in years 10/11. The breakdown in ages of the respondents shows in descending order that the majority 66 (63%) were 16 years of age, the second largest group were 15 year olds at 29 (27%) and the smallest age group involved were 17 year olds with 11 (10%) of the cohort. (Table 4.11 and Figure 4.7).

Table 4.11: Ages and means of pre and post-test knowledge scores.

One Factor ANOVA X 1 : Age Y 1 : difference

Group:	Count:	Mean:	Std. Dev.:	Std. Error:
15 year olds	29	1.069	1.751	.325
16 year olds	66	1.258	1.884	.232
17 year olds	11	.545	1.44	.434

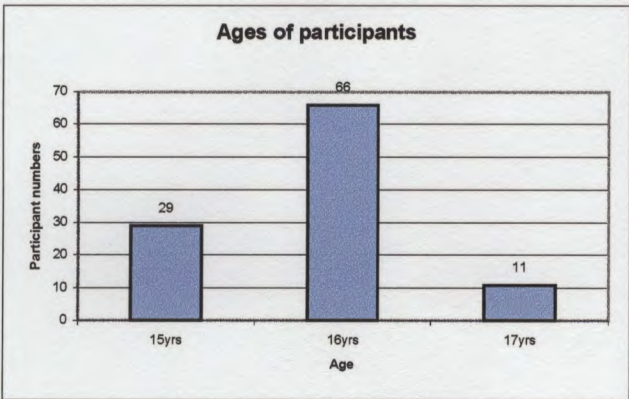


Figure 4.7: The ages of the participants.

The majority of the 16-year-olds were in year 11 and the majority of the 15-year-olds were in year 10. Of the 106 students in the study 71 were in year-11 and 35 were in year 10. Two of the students aged 15-year olds were in year 11.

An analysis of variance was used to test for significant differences between the pre and post knowledge scores among the ages of the 106 respondents. The analysis of variance yielded no significant differences ($F = 0.755$, $p = .4728$, $df = 103$, ns), (Table 4.12).

Table 4.12: One factor ANOVA: Students ages/Difference between pre and post-test knowledge scores.

One Factor ANOVA X 1 : Age Y 1 : difference

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	2	4.94	2.47	.755
Within groups	103	337.211	3.274	$p = .4728$
Total	105	342.151		

Gender difference in outcomes

Differences in pre and post-scores were not expected to be significant with respect to the gender of participants. To check this expectation data were collected on the ages of students so that an analysis of variance might confirm them. The number of participating students grouped by gender is shown in Figure 4.8 with 61 males (58%) and 45 females (42%).

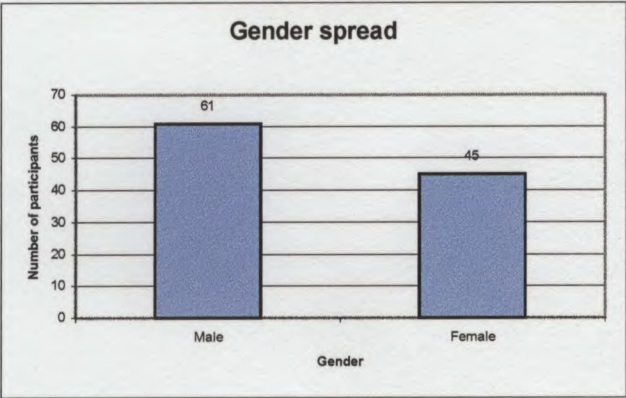


Figure 4.8: The genders of the participants

The test population contained 16% more males than females. One possible reason for this disparity in gender numbers may have been that the students participating were often from computer education streams within the school population and that males may choose this stream more often than females.

Testing statistically for why there was a larger component of male respondents was not within the scope of this study. To determine the reasons for the gender imbalance seen in Figure 4.8, future studies could include collection of information on the courses being taken by students as well as data that would provide individual background as to why students were in the class or group.

Table 4.13 shows the means for male and female respondents with respect to differences between the pre and post-test knowledge acquisition scores. The mean score improvement in terms of gender was 1.23 for the males and 1.0 for the females, showing the mean difference between the scores of male and female students was 0.23 (Table 4.13).

Table 4.13: Gender of participants and means of pre and post-test knowledge scores.

One Factor ANOVA X 1 : Gender Y 1 : difference

Group:	Count:	Mean:	Std. Dev.:	Std. Error:
M	61	1.23	1.856	.238
F	45	1	1.745	.28

An analysis of variance used to test for any significant difference between the pre and post knowledge acquisition scores when compared with gender. The result yielded no difference ($F = 0.416$, $p = .5202$, $df = 104$, ns), (Table 4.14).

Table 4.14: One factor ANOVA: Gender/Difference between pre and post-test knowledge scores

One Factor ANOVA X 1 : Gender Y 1 : difference

Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	1	1.364	1.364	.416
Within groups	104	340.787	3.277	$p = .5202$
Total	105	342.151		

No significant weighting for either gender was observed due to the participation of students from single-sex high schools. The single-sex schools contributed almost equal numbers of students to the study. The all-female schools provided 18 students and the all-males schools 21 students. The 3% majority of males coming from the single-sex schools were not seen as sufficient to skew the results.

Participating schools

The data were gathered from 5 high schools across the Perth metropolitan area. There was a distinct possibility of scores varying between schools for a number of reasons. There might be differences between the levels of computing capacity or hardware that schools had available for use during the exercise. Students' existing skills and experience with computers from the different schools involved in the study may also be an explanation for differences that might occur in the knowledge acquisition scores.

An analysis of variance was used to test for any significant differences between the pre and post knowledge acquisition scores when compared between the five different schools the respondents were drawn from. The result yielded no significant difference ($F = 2.265$, $p = .0673$, $df = 101$, ns) (Table 4.15).

Table 4.15: One factor ANOVA: School/Difference between pre and post-test knowledge scores.

One Factor ANOVA		X 1 : School	Y 1 : difference	Analysis of Variance Table	
Source:	DF:	Sum Squares:	Mean Square:	F-test:	
Between groups	4	28.166	7.042	2.265	
Within groups	101	313.984	3.109	p = .0673	
Total	105	342.151			

The breakdown of respondents contributed by each high school is shown in Figure 4.9. School 1 provided 21 students, school 2 provided 17 students, school 3 provided 39 students, school 4 provided 18 students and school provided 11 students (Figure 4.9).

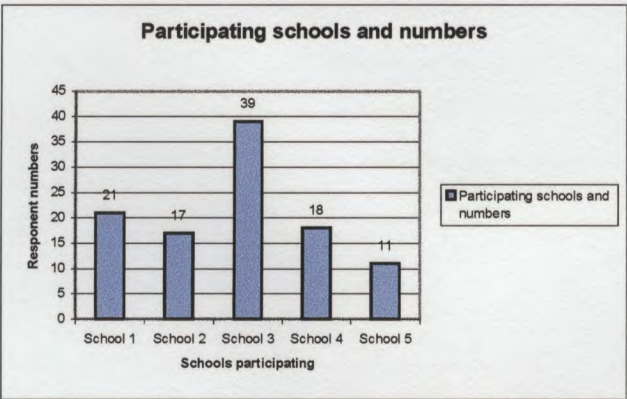


Figure 4.9: Numbers of student participating from each high school.

Surveys from Schools 1 and 3 were each conducted in two groups and on different times. School 1 was broken into one group of 10 students and a second group of 11 students. School 3 was broken into one group of 17 students and a second group of 22 students.

A noticeably higher standard deviation was observed within this categorisation for school 3 (Std. Dev = 2.353), (Table 4.16). One possible reason for this anomaly is that students in the groups from school 3 appeared to be the best focused on the tasks and were therefore more predisposed to retain knowledge from the RACEU Web site. Interestingly the teacher from School 3 was observed to be the most enthusiastic about the exercise involving the RAECU Website and seemed to pass a greater sense of purpose to his students. Table 4.16 also shows that School 3 contributed the greatest number of students to the study 39 (37%) but this can not be seen as a reason for the higher result they returned.

Table 4.16: Participants by school with means and standard deviations of pre and post-test knowledge scores.

One Factor ANOVA X ₁ : School Y ₁ : difference				
Group:	Count:	Mean:	Std. Dev.:	Std. Error:
School 1	21	.81	1.692	.369
School 2	17	.647	.662	.209
School 3	39	1.795	2.353	.377
School 4	18	.869	.9	.212
School 5	11	.545	1.44	.434

Experience with computers

It was considered that differences in the experience students had with computers might have some influence on the level of knowledge acquisition scores students achieved. It was thought that if it could be shown that students with higher levels of computer experience achieved a significantly greater difference between the pre to post-test scores then there would be reason for debate concerning the efficacy and engagement that higher experience levels might bestow.

To see if this could be determined data were collected on the beliefs students held about their level of computer experience using a Likert scale of 1 to 5 (1-low and 5-high). An analysis of variance was used to test for any significant difference between the pre and post knowledge scores when compared with beliefs on computer experience levels. The result yielded no significant differences ($F = 0.997$, $p = .4129$, $df = 101$, ns), (Table 4.17).

Table 4.17: One factor ANOVA: Experience with computers/Difference between pre and post-test knowledge acquisition scores.

One Factor ANOVA X ₁ : Experience with computers Y ₁ : difference				
Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	4	12.996	3.249	.997
Within groups	101	329.155	3.259	p = .4129
Total	105	342.151		

The mean differences between pre and post-test scores for knowledge acquisition for the various ratings of 'experience with computers' are reported in Table 4.18. This item used a Likert scale of 1 to 5 with 1 representing low experience, 3 representing average experience and 5 representing a high level of experience. The lowest rating returned a mean difference of -1.0, showing that those with very low experience with computers had an average tendency to produce a post-test score lower than their pre-test score. For the rating of 2 (just below average)

the results yielded a mean of 1.66, which was the group which on average improved the most. Those with average experience with computers (a rating of 3) improved by a mean of 0.88, the students that returned a rating of 4 (just above average) showed a mean improvement of 1.41 and those returning the highest rating of 5 showed an improvement in knowledge acquisition of 1.0. (Table 4.18).

Table 4.18: Experience with computers and means of pre and post-test knowledge scores.

One Factor ANOVA

X

1 : Experience with computers

Y

1 : difference

Experience Rating:	Count:	Mean:	Std. Dev.:	Std. Error:
1 - Low	1	-.1	*	*
2	9	1.667	2.449	.816
3 - Average	42	.881	1.728	.267
4	36	1.417	1.697	.283
5 - High	18	1	1.847	.435

The numbers of students who responded for each level of experience with computers is shown in Figure 4.10. Only 1 of the students defined themselves as having low-experience (rating 1), whilst rating 2 was opted for by 9 students. The bulk of students 68 (64%) rated themselves as having average experience with computers (rating 3) or as just above average (rating 4), returning 42 and 26 students respectively. 18 students saw themselves as having high experience with computers (rating 5). Overall the majority of students felt they had average or above average experience with computers.

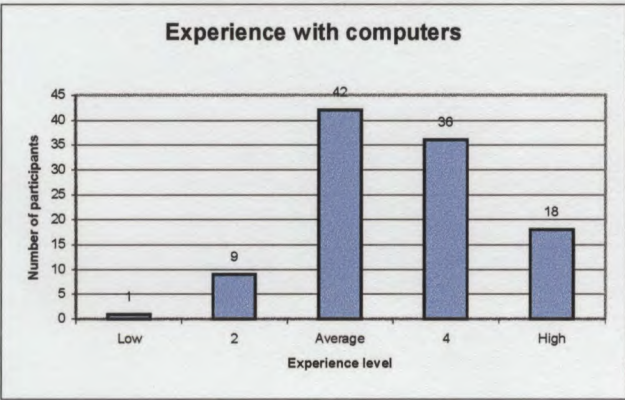


Figure 4.10: Students' experience with computers (self-ratings).

General computing skills

It was thought that there might be differences in the knowledge acquisition scores for those students rating themselves as having higher levels of computing skills. Students coming to the exercise with better general computing skills may be advantaged over students with lower general computer skills. How might students self-efficacy have effected the efficacy of the RAECU Web site?

The groupings for levels of general computing skills of the participants consisted of a self-rating using a Likert scale of 1 to 5 (1-low and 5-high). The mean differences between pre and post-test scores for knowledge acquisition for the various ratings of 'general computer skills' are reported in Table 4.21. For the rating of 2 (just below average general computing skills) the results yielded a mean of 1.4, which was the group which improved the most on average. Those with average experience with computers (a rating of 3) improved by a mean of 1.067, the students that returned a rating of 4 (just above average) showed a mean improvement of 1.22 and those returning the highest rating of 5 showed an improvement in knowledge acquisition of 1.077. (Table 4.19).

Table 4.19: Computing skill level.

One Factor ANOVA		X ₁ : General computing skills		Y ₁ : difference	
Computing skill level:	Count:	Mean:	Std. Dev.:	Std. Error:	
1 - Low	2	0	1.414	1	
2	10	1.4	2.319	.733	
3 - Average	15	1.067	1.601	.239	
4	36	1.222	1.914	.319	
5 - High	13	1.077	1.977	.548	

An analysis of variance was used to test for any significant difference between the pre and post knowledge scores when compared with beliefs of general computing skills. The result yielded no significant differences ($F = 0.284$, $p = .8877$, $df = 101$, ns), (Table 4.20).

Table 4.20: One factor ANOVA: General computing skills/Difference between pre and post-test knowledge acquisition scores.

One Factor ANOVA		X ₁ : General computing skills		Y ₁ : difference	
Source:	DF:	Sum Squares:	Mean Square:	F-test:	
Between groups	4	3.808	.951	.284	
Within groups	101	338.345	3.35	$p = .8877$	
Total	105	342.151			

The numbers of students that responded for each level of general computing skills is shown in Figure 4.11. Only 2 of the students defined themselves as having low-computing skills (rating 1), whilst rating 2 was opted for by 10 students. The bulk of students 73 (68%) rated themselves as having average experience with computers (rating 3) or as just above average (rating 4), returning 49 and 24 students respectively. 13 students saw themselves as having a high level of general computing skills (rating 5). Overall the majority of students felt they had average or above average general computing skills (Figure 4.11).

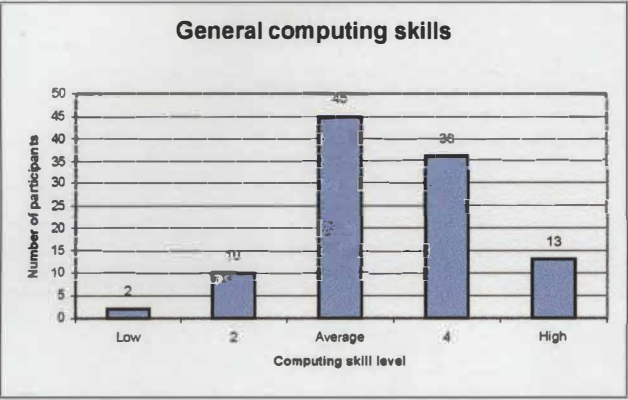


Figure 4.11: Students' general computing skills (self-ratings).

Internet usage

Internet usage of the students was seen to have somewhat allied in characteristics to experience with computers and general computer skills and might also have had a bearing on the ability of the students to make best use of the RAECU Website. As students visited the Website those who had more affinity with the Internet brought on by higher usage might have had more successful browsing strategies compared with those students who had had less exposure to the idiosyncrasies of Internet. This might have caused a noticeable difference in the knowledge acquisition scores. There was an expectation that those with greater Internet usage might have produced a higher score than those with lesser Internet usage.

In attempt to detect any effect that the level of students Internet usage might have had on the effectiveness of the RAECU Website, an analysis of variance was used to test for any significant difference between the pre and post knowledge scores when compared with the respondent's Internet usage. The result yielded no difference ($F = 0.613$, $p = .6546$, $df = 101$, ns), (Table 4.21).

Table 4.21: One factor ANOVA: Internet usage level/Difference between pre and post-test knowledge acquisition scores.

One Factor ANOVA X 1 : Internet usage Y 1 : difference				
Source:	DF:	Sum Squares:	Mean Square:	F-test:
Between groups	4	8.104	2.026	.813
Within groups	101	334.047	3.307	p = .6548
Total	105	342.151		

The students who gave themselves a rating of 1 (low) for their Internet usage also returned the greatest mean improvement of 2 in their knowledge acquisition scores. For the rating of 2 (just below average Internet usage) the results yielded a mean of 0.857. Those with average Internet usage (a rating of 3) improved by a mean of 0.865, the students that returned a rating of 4 (just above average) showed a mean improvement of 1.207 and those returning the highest Internet usage rating of 5 showed an improvement in knowledge acquisition of 1.321. This seems to suggest that there might be an overall trend for greater Internet usage to improve the ability of students to use the Website effectively. But while the means for ratings 2 to 5 increase respectively there is an anomaly in rating 1 which produced the largest knowledge improvement score (Table 4.22).

Table 4.22: One factor ANOVA: Internet usage level/Difference between pre and post-test knowledge acquisition scores.

One Factor ANOVA X 1 : Internet usage Y 1 : difference				
Self Rating:	Count:	Mean:	Std. Dev.:	Std. Error:
Rating 1	5	2	3.082	1.378
Rating 2	7	.857	1.574	.595
Rating 3	37	.865	1.653	.272
Rating 4	29	1.207	1.84	.342
Rating 5	28	1.321	1.806	.341

As with the ANOVA tests for experience with computers and general computer skills, the data returned for Internet usage shows that the majority of students believe themselves to be using the Internet at least as much if not more than their peers (Figure 4.12).

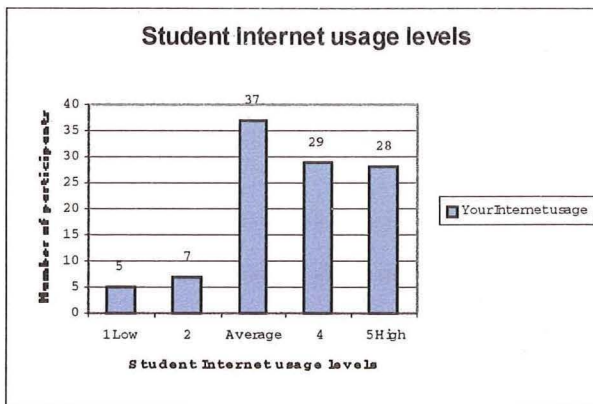


Figure 4.12: Students' Internet usage

In the three categories of computer experience, general computing skills and Internet usage levels there was a far greater number of students that placed themselves above average than students considering themselves to be below average. This would seem to show there is a good level of self-confidence in students concerning use of computers and the Internet (Figure 4.13).

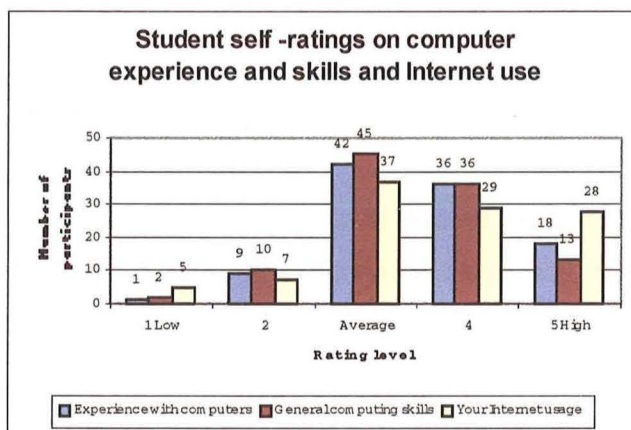


Figure 4.13: Students' Internet usage (self-ratings).

Attitudes towards going to, knowing about and enjoying university

Watt and Paterson (2000) recommend that one way to reduce attitudinal barriers amongst students would be running short induction programs to demystify higher education.

Demystification of information surrounding university education is the primary goal of the RAECU Website, and so it was considered that the attitudes that students hold about university might have a bearing on the level interest, motivation and understanding required to propel themselves toward university. Furthermore the efficacy of using information sources, like the RAECU Website, may be influenced by these attitudes.

Would students like to go to university

There was interest in finding out if students' overall desire to attend university might be influenced by interacting with the RAECU Website. It was thought that if there was significant improvement in the numbers of students in the test group that replied positively they would like to attend university, this might be seen as a sign that the RAECU Website may have been effective in changing their attitudes.

To test for whether the RAECU Website had a positive effect on the students' desire to attend university a t-test was performed on the pre and post-test responses to determine whether students wanted to attend university. The result using the difference between the squared means of X and Y, revealed no significant difference ($t = 0.371$, ns) (Table 4.23).

Table 4.23: Change in attitudes towards going to university

Paired t-Test X		1: PRE I would like to go to university?	Y	1: POST I w...
DF:	Mean X - Y:	Paired t value:	Prob. (1-tail):	
105	.028	.371	.3558	

The resulting t-score, ($t=0.371$) suggested no significant difference, indicating that the Web site did not increase student attitudes about attending university. However, as the t-test revealed no significance the contraction in the number of students opting that they would like to attend university could readily have been caused by chance. It might also be feasible that the information acquired by students requires some time to become a part of their integrated knowledge and with more time between surveys students might consolidate their understanding and answer positively. Further study needs to be undertaken to confirm this indication.

Would students like to visit an ECU campus

The study attempted to determine whether students' wishes to find out more about university had been influenced by the RAECU intervention, as this might have been an indicator of improved attitudes towards going to university. One beneficial practice for students to find out about a university is organising for them to actually visit a university campus. As Edith Cowan University is the focus of the RAECU Website the question was posed, whether or not students would like to visit an ECU campus. The question was asked in both the pre and post-questionnaires and students could answer yes or no.

To distinguish if there was an improvement in attitude due to the intervention of the RAECU Website a one-tailed t-test was used to test for any elevated change in attitudes towards visiting an ECU campus between the pre and post results. The result based on the difference between the squared means of X and Y was not significant ($t=-1.092$, ns) (Table 4.24). Finding that there was no significant difference suggests that the Web site did not contribute to students' desire to visit an ECU campus.

Table 4.24: Change in attitudes towards visiting an ECU campus

Paired t-Test	X: PRE - Would you like to visit an ECU campus	Vs	Y : POST - Would you like to visit an ECU campus
DF:	Mean X - Y:	Paired t value:	Prob. (1-tail):
105	-.047	-1.092	.1386

In the pre questionnaire there were 59 (56%) students who responded that they would like to visit an ECU campus and 47 (44%) students said they would not. In the post questionnaire there were only 54 (51%) who said they would like to make a visit to an ECU campus and 52 (49%) who replied they would not. This means that there appeared in fact a reduction in the number of students who would like to visit a campus after the Website intervention took place (Figure 4.14).

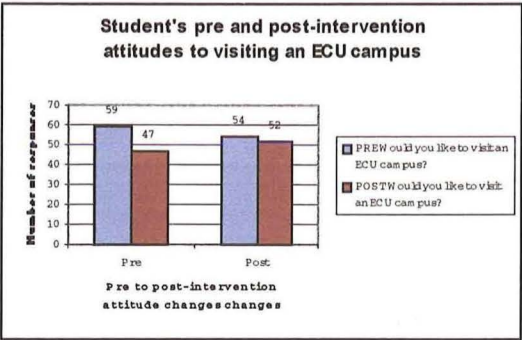


Figure 4.14: Changes in attitude to visiting an ECU campus

At first glance it may seem that the reduction in students who would like to make a visit to a campus was a detrimental effect of the Web site. Because the difference is not significant, the "apparent" reduction could easily have been caused by chance. On the other hand, another way to view the result is that the reduction is an indication of the Web site having had a desirable informative effect which, in turn, caused some students to be more at ease with the issues of university. This scenario may have reduced the need for some students to physically visit a campus. Students who remembered how they answered on the pre-test may also have purposefully given the opposite answer (to questions with a yes/no option) on the post-test. Ultimately the tool was only able to return the change in student preferences and was not sensitive enough to account for the reasons for a decrease or an increase.

How enjoyable do students think university would be

Finally in this section concerning students' attitudes towards university, the study endeavoured to understand the level of enjoyment that students expected if they attended university. It was anticipated that if students' conceptions of university as an enjoyable experience were positively changed between the pre-test and the post-test, their expected level of enjoyment might have been affected by the intervention of the RAECU Website. A Likert scale of 1 to 5 was used to elicit the student's opinions for this item, with 1 as low (they would not expect to enjoy university), to 5 as high (they would expect to find university very enjoyable).

To discern if there was any improvement in students' level of expected enjoyment due to the intervention of the RAECU Website, a one-tailed t-test was used to test for any improvement in expected enjoyment levels between the pre and post-tests for how enjoyable students thought university would be. The result using the difference between the squared means of X and Y, revealed no significant difference ($t = 0.537$, ns) (Table 4.25).

Table 4.25: Change in attitudes towards enjoyment of going to university

Paired t-Test	X ₁ : PRE How enjoyable do you think going to University would be?	Y ₁ : POST How enjoy...	
DF:	Mean X - Y:	Paired t value:	Prob. (1-tail):
105	.028	.537	.2962

Students' overall expectations that they would enjoy university did rise between the pre and post-tests but it was not shown to be significant in the t-test carried out. Although revealed to be insignificant the result may hint that some students became more interested in attending university. Even the small shift found might point to some students experiencing a sense of

raised self-efficacy and this may translate into increased determination to attend university. As with the question of visiting an ECU campus the t-test was only able to reveal if there was a positive shift in student preferences and not sensitive enough to account for the reasons for an improvement.

CHAPTER 5

CONCLUSION

Project summary

Universities are turning towards the Internet to disseminate information, high schools are now well connected and students appear quite adept at utilising the technology (Education Department of Western Australia, 2000). The problems of transition from high school to university are well researched and the way forward lies in finding and facilitating efficacious solutions.

Research has shown that alarming percentages of first year university students have an unhappy start to their studies (Pargetter, 2000). Doring (2000) also suggests that students' pervasive beliefs about success will affect what they become involved in, the way they go about these activities, and the levels of satisfaction or dissatisfaction they derive.

Summary of literature

The review conducted to inform the study revealed that in general, existing online solutions offer categorically suitable information. Few of the existing online solutions offer engaging interactivity with the information or are designed as an effective learning environment. Within all this the pedagogical considerations seem scant. Another problem still seems to be one of user motivation to view such Web sites in any depth and engage with the appropriate material at an appropriate level and at an appropriate time.

There are many issues in the specialised literature on the problematics of transition. Including all manner of financial, intellectual, physical and psychological considerations looking from both internal and external standpoints. The bulk of the literature can be seen to focus on particular aspects of transition with only a little work of a holistic nature. The first section of the review indicated the specialised problems of transition and the reasons for them. They are

reasonably well researched and recorded and researchers are now looking into the methods and implementation of solutions.

As an implementation can now be based on the Web, the review also focused on how the Web is being used to provide information and assist transition. Searching the Internet for existing solutions revealed that although every local higher education institution had some form of Web presence, the cohesive pedagogical considerations were low, except for a few exceptional instances, (eg. The Monash Transition Program, 2001; and Oregon State University, 2001). These exceptions were usually also the institutions that were also conducting research into transition. Producers of the less exceptional Web sites often boasted about particular components, but the pedagogical cohesiveness of their design did not cover the whole site.

The attributes of supporting transition students led to a framework describing the elements of successful solutions. The framework suggested that chosen media should have sympathetic attributes to promote an environment of efficacious solutions. Existing solutions that used the WWW were looked at and some stock of their design and content taken.

Research questions

The study attempted to evaluate the efficacy of the Web site in three main ways. Firstly the study sought to understand how effective the RAECU Web site was in engaging and attracting students about transition. The first two evaluation questions were:

How well does the RAECU Web-based solution *engage* transition students? and

How well does the RAECU Web-based solution *attract* transition students?

Secondly in an attempt to gauge the influence of teaching strategies on students' knowledge acquisition the study posed the question. To what extent does the form of implementation (Teacher-directed or Student- centred) influence knowledge gained by students about life at ECU?

Finally the study sought to determine what might influence the level of knowledge gained by students using a Web-based solution by considering; what influences the level of knowledge gained from this Web-based solution? This last question drew on three different indicators

- Prior experience
- ITC skills of users
- Attitudes of users

Methodology

An instrument was developed to provide data for the study in the form of two questionnaires. The first questionnaire was administered to students before the intervention of visiting the RAECU Website and the second questionnaire was conducted after the intervention (both questionnaires may be found in Appendix A). Content for the questions were drawn from the RAECU Web site.

The survey questions were separated into construct groups that related to the stated inquiry in order to validate the connection with the study's research objectives (Table 3.1). Clear, culturally equitable language use and sequencing of the questions were considered carefully. The methods of response used for the survey questions were carefully considered as to whether they would produce qualitative or quantitative data. A Likert scale of 1 (low) to 5 (high) was utilised for most questions attempting to elicit students' opinions. Some questions that required students to rank a number of items used an ordinal system with a few requiring only a yes/no answer. Questions that were unsuited to responses using a quantitative measure such as a Likert scale, were delivered in an open-ended form with space provided for students to write their answers.

In choosing the sample population the method used was intended to produce a random sample of high school students from years 10 and 11. Two of the schools were drawn from private schools and the remainder from state high schools. All schools were in the Perth metropolitan area and the final sample consisted of 106 students. The main reason given for schools not participating was curriculum constraints related to available time. All survey sessions were conducted in the respective school's computer labs under normal computer lab conditions.

The students' visitation to the RAECU Web site was implemented in two ways. One method was teacher directed (TD) whereby students were prompted to use a strategy (eg: the Jigsaw strategy, see Appendix B). The alternative method was student centred (SC) and in this case students were directed to the RAECU Web site and then left to browse with no formal direction. The second or post questionnaire re-administered the same questions as the pre-questionnaire and in addition elicited Web site options and preferences

Once data collection was completed the data were transposed into an Excel97® spreadsheet using appropriately titled columns for each variable. Once all data was entered and verified, the spreadsheet was exported as delimited plain text and imported into StatView® version 2.0 (a Macintosh-based statistical program) for analysis.

The statistical analysis of the data consisted of:

- t-tests for comparison of pre and post scores
- Analysis of Variance (ANOVA) for comparison between variables and the teaching strategy enacted and
- Percentiles and graphs for visualisation of proportionate levels.

Paired, one-tailed t-tests were used to compare the sum of each respondents scores for all the knowledge-based questions on the pre questionnaire with the sum of the scores for all the knowledge-based questions on the post questionnaire.

For analyses of variance between variables and the teaching strategies enacted, the ANOVA method utilised the Scheffe F test, which denotes the existence of an effect but not the strength of it. The level of confidence was set at 95%. The report includes tables showing the count, mean, standard error and the standard deviation of each group, the values for F and p and the degrees of freedom, along with whether or not the factor is significant (s or ns).

The survey results

The cohort's average self-belief of their experience with computers was 3.58 or students saw themselves as slightly above average (Table 4.2).

General computing skills and Internet usage showed similar ranges returning averages of 3.45 and 3.64 respectively. These figures tend to suggest that high school students felt confident with computer equipment and comfortable using the Internet technologies (Table 4.2).

Many students accessed the Internet from more than one point. The most common access point was from school (81%) while 78% of the students also reported accessing the Internet from home.

The comparison of pre and post-test knowledge scores

An important aspect of the study was the intention to explore whether use of a Web site was likely to be able to improve students' knowledge in terms of the information needed to make informed decisions about university life and course choices. The literature suggested that a Web site used appropriately had strong prospects to effectively provide students with appropriate and meaningful information. For this reason students were exposed to RAECU Web

site in classroom settings and scores were obtained from a pre-test and post-test so that this question could be further investigated. A t-test was used to compare the overall scores from knowledge questions on the pre and post questionnaires. When this improvement was tested for significance using a t-test, the improvement was found to be significant, ($t = -6.457$, $p < 0.001$, s).

Although this was the only test that revealed significant improvement the study overall returned data that were encouraging. Tests that looked for improvement in knowledge retention revealed a minor knowledge gain and with further research, results may become more decisive.

Reflections on the project

The impetus for this evaluation emanated from a practical need to understand the diverse proclivities of 'typical' RAECU Web site users. The evaluation was troublesome to scope, as the RAECU Website was an ongoing multi-faceted project. The approach that the evaluation took focused on the Website's efficacy. This is to say, the study attempted to enlighten the Web site's designers as to how effective the RAECU Web site was in successfully transferring its information to its users. The study also examined the ability of the Web site to engage its users, how enjoyable they found the experience and whether the implementation of teaching strategies might be helpful in improving the knowledge acquisition of users when visiting the Website.

The logistical organisation of the surveys seems to have been appropriate and the data collection activities were accomplished well. All parties successfully completed their requested tasks, but some students found the activities difficult to grasp in the five-minute introduction. As a consequence some of these students found it hard to get going and this may have led to insufficient time for them to complete their tasks properly. Closer attention to the introduction of the required tasks that students were asked to engage in may allow improved initial conceptions and in turn promote more considered responses. The initialisation of the collaborative teaching strategy to be used while visiting the Web site could be made more clear-cut in its instruction allowing students to expend less time coming to grips with what was required and more time attending to the task.

Reflections and improvements to the survey tool

In hindsight the survey tool could have benefited from closer scrutiny with concern for the subsequent analytic generalisability of the collected data. The included survey questions seemed sufficient but could be improved by being more comprehensive and sensitive to the constructs of the research. The questionnaires might also further be improved if they encompassed fewer

areas of inquiry and increased items that relate to each construct. Similar studies should take great care to only include items that are keyed specifically to the stated research questions. Furthermore the ensuing data should be of a type that is appropriate to the study's question and readily analysable so as to produce useful conclusions. An example is the inclusion of open-ended questions, as they required the application of more intensive qualitative methods and as such were under utilised here. As a consequence this study was only able to attend to issues of web-based attraction in a general fashion with few conclusive findings

Suggestions for using the Web to assist with transition

The results of the study suggest that most students are confident with computers and online technologies and that they believe they have developed effective browsing skills, but that these do not seem to have transferred into effective learning skills. The results suggest that:

1. We should keep trying with web solutions and develop them to be more effective, taking into account pedagogical concerns and sound instructional design practices. Web site designers of transition sites should keep in mind that students are not accustomed to searching for specific information and consequently need to design Web sites with browsing strategies in mind.

The results in the use of a teaching strategy while students work with a web site revealed slight benefits to the level of knowledge they acquired. Although this study found no significance in using a strategy the results were encouraging and consequently it is suggested that:

1. The encouraging results of the use of strategies suggests that Web Designers, mentors and teachers of transition may benefit from the utilisation of outcome-based teaching strategies such as the jigsaw strategy put to use in this study (see Appendix B). It is suggested that they be applied when students' are expected to use Web-based tools.
2. It is suggested that when Web site designers and teachers are determining which strategy to make use of, the end-user's task should be carefully considered in unison with the Website's intended resources so that appropriate pedagogical concerns may be incorporated.
3. Low knowledge acquisition and high self assessment of ITC skills suggests that teachers need to spend time instructing students' on specific strategies for using Web-based tools rather than assuming that the students' technology and Internet skills are sufficient for finding and retaining specific and related information.

During the study it also became obvious that the students had many differing opinions on the interface. As it is well nigh impossible to design a Web site that will appeal to all members of the target-audience, what might the prospects be of workable concepts to combat this?

One notion to cater for such a wide set of opinions relating to preferred interface design is to incorporate the concept of 'Skins'. Skins are an alternative graphical interface to a software program. A skin is a pre-packaged set of graphics that includes all the pieces necessary to change the look and feel of a particular interface. Graphics could include bitmaps for buttons, title bars, sliders, radio buttons, check boxes, and borders. A skin alters the size, shape and position of the item it is skinning. Skins do not change the functionality of a program, just its interface. Stardock.net (available online) gives 'Winamp' as a functional example of skins and speaks of Microsoft which is soon to introduce a skinning system for Windows, known as 'Blinds for Windows'.

The 'skins' concept could be similarly imposed on an entire Web site design, thus allowing for many diverse design configurations that might appeal to different portions of the user population. 'Transition Island' is a prototype of 'skinning a Web site' and is at present being developed for the RAECU Web site (Seddon, 2001) and will be the subject of further research.

The possibilities for skins to provide a plethora of optional environments and methods to traverse a webspace would seem bounded only by a designer's imagination and the development resources available. Brian Heumann, a user-centred design consultant at IBM, has been developing Java-based solutions for the personalisation of Web sites that do not effect the underlying HTML code (Heumann, avail online).

Further research

In a New World of electronic information dissemination the encouraging but inconclusive results of this study highlight the need for perseverance with Web sites for transition. The tools and framework of this study could to be further developed in order to gain a more comprehensive understanding of how online information and communication technologies can be used most effectively to assist high school students with the issues of transition to university. Fastidious design of future studies to determine the efficacy of a Web-based information space could add much needed knowledge and evaluation methodologies to the arsenal of Web site designers.

In terms of engagement and enjoyment of the Web site, the study was unable to determine distinct causes for higher or lower ratings. Further studies would benefit if the tool were enhanced by expanding these areas to incorporate deeper and more sensitive questioning. If a survey tool is developed that allows for expanded cross-analysis of a user's engagement and enjoyment it may be possible to come to more robust results.

In order to accommodate the varied interface wishes of a large group of users the concept of skins was suggested. The technical capability to engage skins is developing fast and additional research might also be undertaken to determine methods of selecting germane metaphors and hence a 'best set of skins' to make available for use on a web site aimed at a particular audience such as high school students.

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APPENDICES

Appendix A

- Student Questionnaire One - Given prior to exposure to the RAECU Web site.
- Student Questionnaire Two - Given after exposure to the RAECU Web site.

Race Around ECU (RAECU) website evaluation 2001 - Questionnaire A

This survey is designed to collect information about Western Australian high school students' knowledge, views and beliefs about studying at university. It will also be used to evaluate the "Race around ECU" website.

The information you provide will be used only for this study. Your answers will be kept confidential by the university researcher and never shown to anyone else such as a parent or staff at your school. Your survey answers will be entered into a computer for analysis but no names will be recorded in the computer. The results of the research will be reported in summary group form and will not identify any individual student.

Name: _____

School: _____

Age: _____

Gender: Male ☐ Female ☐

I am happy for the information that I give in this survey to be used for the purposes stated above.

Signed: _____ Date: _____

This part asks about your computer skills

1. How would you rate the following?

(1-very poor 5-very strong)

1 2 3 4 5

Experience with computers

General computing skills

Your Internet usage

2. Where do you access the Internet?

(Tick ALL applicable)

Home

School

Library

Other _____

This part tests your knowledge of university

3. Which of the following do you think best describes a university unit?

(Tick one)

A degree course is made up of units

A unit is one year's study

A unit is your main subject of study

Accommodation where students live

4. Which of the following do you think best describes a university faculty?

(Tick one)

Faculties are elective subjects

Courses are organised into faculties

A class of students

A large lecture hall

5. Which of the following do you think best describes a university degree?

(Tick one)

One full year's study

An award for completing a course

A 3 or 4 year course of units

How hard you work during the year

6. Which of the following best describes a university school?

(Tick one)

All students who are in a particular year of study

Faculties are divided into subject-based schools

A classroom with laboratory facilities

A class of students

7. Which of the following best describes a university undergraduate?

(Tick one)

A student who has just graduated

A tutor who works with new students

A student who has not yet graduated

A research assistant

8. Which of the following best describes a university major?

(Tick one)

The main subject stream of a degree

The Coordinator of a study program

All the units studied while at university

A Professor

9. What is the 20+ Pathway at ECU?

(Tick one)

A degree course is made up of 20 units

People over 20 may apply for direct entry

The top 20 students in each year of a course

A system of student loans

10. How well do you feel you understand what your career options are, concerning the types of courses you could study at university?

Thank you for helping with this study and completing this questionnaire.

(Tick one)

- I know a little
I feel that I know enough
I would like to know more
The job I want does not require university

This part asks about student finances

11.What is HECS?

(Tick one)

- An academic scholarship
Deferred payments of university fees
A system of marking
Student Guild fees

12.About how much will it cost to study one unit at university?

(Tick one)

\$100	\$500	\$1,000	\$2,000

This part asks about university workload

13.About how many *face-to-face* hours per week does one unit take up?

(Tick one)

3	6	10	15

14.About how many *face-to-face* hours per week is needed to do a full-time degree course?

(Tick one)

5-8hrs	12-15hrs	20-25hrs	25-35hrs

15.How many semesters are there usually in one uni year?

(Tick one)

5	4	3	2

This part asks about your attitudes.

16.Please rank these universities in the order you would prefer if you were to attend university.

(Rank 1 = 1st preference - 5 = last preference)

- Curtin University
Edith Cowan University
University of WA
Murdoch University
Notre Dame University

(Rank 1 most important to you... 7 least important)

- Finances/cost
Family/Personal
Workload
Friends & socialising
Not knowing about the university system
Getting a job afterwards
Getting used to university life

18.Would you like to visit an ECU campus?

YES	NO

19.I would like to go to university?

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

20.How enjoyable do you think going to university would be?

Very low	Low	Average	High	Very high

17.The following are some of the difficulties that students face at university. Please rank them in order of importance to you.

Thank you for helping with this study and completing this questionnaire.

Race Around ECU (RAECU) website evaluation 2001 - Questionnaire B

This survey is designed to collect information about Western Australian high school students' knowledge, views and beliefs about studying at university. It will also be used to evaluate the "Race around ECU" website.

The information you provide will be used only for this study. Your answers will be kept confidential by the university researcher and never shown to anyone else such as a parent or staff at your school. Your survey answers will be entered into a computer for analysis but no names will be recorded in the computer. The results of the research will be reported in summary group form and will not identify any individual student.

Name: _____

School: _____

Age: _____

Gender: Male ☐ Female ☐

I am happy for the information that I give in this survey to be used for the purposes stated above.

Signed: _____ Date: _____

1. Which of the following do you think best describes a university unit?

(Tick one)

- A degree course is made up of units
- A unit is one year's study
- A unit is your main subject of study
- Accommodation where students live

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

2. Which of the following do you think best describes a university faculty?

(Tick one)

- Faculties are elective subjects
- Courses are organised into faculties
- A class of students
- A large lecture hall

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

3. Which of the following do you think best describes a university degree?

(Tick one)

- One full year's study
- An award for completing a course
- A 3 or 4 year course of units
- How hard you work during the year

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

4. Which of the following do you think best describes a university school? (Tick one)

- All students who are in a particular year of study
- Faculties are divided into subject-based schools
- A classroom with laboratory facilities
- A class of students

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

5. Which of the following do you think best describes a university undergraduate?

(Tick one)

- A student who has just graduated
- A tutor who works with new students
- A student who has not yet graduated
- A research assistant

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

6. Which of the following do you think best describes a university major?

- The main subject stream of a degree
- The Coordinator of a study program
- All the units studied while at university
- A Professor

(Tick one)

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

7. What is the 20+ Pathway at ECU?

- A degree course is made up of 20 units
- People over 20 may apply for direct entry
- The top 20 students in each year of a course
- A system of student loans

(Tick one)

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

8. How well do you feel you understand what your career options are, concerning the types of courses you could study at university?

- I know a little
- I feel that I know enough
- I would like to know more
- The job I want does not require university

(Tick one)

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

9. What is HECS?

- An academic scholarship
- Deferred payments of university fees
- A system of marking
- Student Guild fees

(Tick one)

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

10. About how much will it cost to study one unit at university?

(Tick one)

\$100	\$500	\$1,000	\$2,000
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. About how many face-to-face hours per week does one unit take up?

(Tick one)

Thank you for helping with this study and completing the questionnaires.

3	6	10	15

12. About how many *face-to-face* hours per week is needed to do a full-time degree course?

(Tick one)

5-8hrs	12-15hrs	20-25hrs	25-35hrs

13. How many semesters are there usually in one uni year?

(Tick one)

5	4	3	2

14. The following are some of the difficulties that students face at university. Please rank them in order of importance to you.

(Rank 1 most important to you... 7 least important)

Finances/cost

Family/Personal

Workload

Friends & socialising

Not knowing about the university system

Getting a job afterwards

Getting used to university life

15. Would you like to visit an ECU campus?

YES	NO

16. I would like to go to university?

(Tick one)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

17. How enjoyable do you think going to university would be?

(Tick one)

Very low	Low	Average	High	Very high

18. In what ways did you find the RAECU website enjoyable to use?

19. In what ways did you find the RAECU website attractive?

20. How many minutes did you spend using the RAECU website?

(Tick one)

1-5min	5-10min	10-20min	over 20min

21. How did you use the RAECU website in a group or alone?

(Tick one)

In a Group	On my own

22. Which websites of the following universities have you visited? (Tick ALL applicable)

Curtin University

Edith Cowan University

University of WA

Murdoch University

Notre Dame University

23. How would you rate your enthusiasm to tour the RAECU website again?

(Tick one)

Very low	Low	Average	High	Very high

24. Did you find using the RAECU site an enjoyable experience?

(Tick one)

Yes, I would visit again

Yes, but would not visit again

No, but I might visit again

No, I would not visit again

25. How much did the website make you concentrate?

(Tick one)

Very low	Low	Average	High	Very high

26. What weaknesses did you find with the RAECU website?

27. What strengths did you find with the RAECU website?

28. Using the website gave me more confidence to pursue the idea of going to university?

(Tick one)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

29. Did you post a question on the RAECU Bulletin Boards (BBS)?

YES	NO

30. How useful did you find using the RAECU website?

(Tick one)

Very low	Low	Average	High	Very high

31. What sorts of useful information did you find?

Thank you for helping with this study and completing the questionnaires.

Appendix B

Jigsaw strategy

Invite the students to work as a team of 6. Each student should follow the trail of one question:

- Who?
- Why?
- What?
- Where?
- When?
- How?

Students should then *Jigsaw* their separate pieces of information to produce a report on ECU life.

*This could then be presented to the class by the group orally with or without the aid of computer presentation depending on the Internet and computer skills of the participants.

Appendix C

- **Answer key for Pre Questionnaire**
- **Answer key for Post Questionnaire**

Race Around ECU (RAECU) website evaluation 2001 - Questionnaire A

Corrected Version - ✓ denotes correct answer for scored items

This survey is designed to collect information about Western Australian high school students' knowledge, views and beliefs about studying at university. It will also be used to evaluate the "Race around ECU" website.

The information you provide will be used only for this study. Your answers will be kept confidential by the university researcher and never shown to anyone else such as a parent or staff at your school. Your survey answers will be entered into a computer for analysis but no names will be recorded in the computer. The results of the research will be reported in summary group form and will not identify any individual student.

Name: _____

School: _____

Age: _____

Gender: Male ☐ Female ☐

I am happy for the information that I give in this survey to be used for the purposes stated above.

Signed: _____ Date: _____

This part asks about your computer skills

1. How would you rate the following?

(1-very poor 5-very strong)

	1	2	3	4	5
Experience with computers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General computing skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your Internet usage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Where do you access the Internet?

(Tick ALL applicable)

Home	<input type="checkbox"/>
School	<input type="checkbox"/>
Library	<input type="checkbox"/>
Other _____	<input type="checkbox"/>

This part tests your knowledge of university

3. Which of the following do you think best describes a university unit?

(Tick one)

A degree course is made up of units	<input checked="" type="checkbox"/>
A unit is one year's study	<input type="checkbox"/>
A unit is your main subject of study	<input type="checkbox"/>
Accommodation where students live	<input type="checkbox"/>

4. Which of the following do you think best describes a university faculty?

(Tick one)

Faculties are elective subjects	<input type="checkbox"/>
Courses are organised into faculties	<input checked="" type="checkbox"/>
A class of students	<input type="checkbox"/>
A large lecture hall	<input type="checkbox"/>

5. Which of the following do you think best describes a university degree?

(Tick one)

One full year's study	<input type="checkbox"/>
An award for completing a course	<input checked="" type="checkbox"/>
A 3 or 4 year course of units	<input type="checkbox"/>
How hard you work during the year	<input type="checkbox"/>

6. Which of the following best describes a university school?

(Tick one)

All students who are in a particular year of study	<input type="checkbox"/>
Faculties are divided into subject-based schools	<input checked="" type="checkbox"/>
A classroom with laboratory facilities	<input type="checkbox"/>
A class of students	<input type="checkbox"/>

7. Which of the following best describes a university undergraduate?

(Tick one)

A student who has just graduated	<input type="checkbox"/>
A tutor who works with new students	<input type="checkbox"/>
A student who has not yet graduated	<input checked="" type="checkbox"/>
A research assistant	<input type="checkbox"/>

8. Which of the following best describes a university major?

(Tick one)

The main subject stream of a degree	<input checked="" type="checkbox"/>
The Coordinator of a study program	<input type="checkbox"/>
All the units studied while at university	<input type="checkbox"/>
A Professor	<input type="checkbox"/>

9. What is the 20+ Pathway at ECU?

(Tick one)

A degree course is made up of 20 units	<input type="checkbox"/>
People over 20 may apply for direct entry	<input checked="" type="checkbox"/>
The top 20 students in each year of a course	<input type="checkbox"/>
A system of student loans	<input type="checkbox"/>

10. How well do you feel you understand what your career options are, concerning the types of courses you could study at university?

(Tick one)

I know a little	<input type="checkbox"/>
I feel that I know enough	<input type="checkbox"/>
I would like to know more	<input type="checkbox"/>
The job I want does not require university	<input type="checkbox"/>

This part asks about student finances

11.What is HECS?

(Tick one)

An academic scholarship	<input type="checkbox"/>
Deferred payments of university fees	<input checked="" type="checkbox"/>
A system of marking	<input type="checkbox"/>
Student Guild fees	<input type="checkbox"/>

12.About how much will it cost to study one unit at university?

(Tick one)

\$100	\$500	\$1,000	\$2,000
	<input checked="" type="checkbox"/>		

This part asks about university workload

13.About how many face-to-face hours per week does one unit take up?

(Tick one)

3	6	10	15
<input checked="" type="checkbox"/>			

14.About how many face-to-face hours per week is needed to do a full-time degree course?

(Tick one)

5-8hrs	12-15hrs	20-25hrs	25-35hrs
	<input checked="" type="checkbox"/>		

15.How many semesters are there usually in one uni year?

(Tick one)

5	4	3	2
			<input checked="" type="checkbox"/>

This part asks about your attitudes.

16.Please rank these universities in the order you would prefer if you were to attend university.

(Rank 1 = 1st preference - 5 = last preference)

Curtin University	<input type="checkbox"/>
Edith Cowan University	<input type="checkbox"/>
University of WA	<input type="checkbox"/>
Murdoch University	<input type="checkbox"/>
Notre Dame University	<input type="checkbox"/>

17.The following are some of the difficulties that students face at university. Please rank them in order of importance to you.

(Rank 1 most important to you... 7 least important)

Finances/cost	<input type="checkbox"/>
Family/Personal	<input type="checkbox"/>
Workload	<input type="checkbox"/>
Friends & socialising	<input type="checkbox"/>
Not knowing about the university system	<input type="checkbox"/>
Getting a job afterwards	<input type="checkbox"/>
Getting used to university life	<input type="checkbox"/>

18.Would you like to visit an ECU campus?

YES	NO
<input type="checkbox"/>	<input type="checkbox"/>

19.I would like to go to university?

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20.How enjoyable do you think going to university would be?

Very low	Low	Average	High	Very high
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Race Around ECU (RAECU) website evaluation 2001 - Questionnaire B

Corrected Version - ✓ denotes correct answer for scored items

This survey is designed to collect information about Western Australian high school students' knowledge, views and beliefs about studying at university. It will also be used to evaluate the "Race around ECU" website.

The information you provide will be used only for this study. Your answers will be kept confidential by the university researcher and never shown to anyone else such as a parent or staff at your school. Your survey answers will be entered into a computer for analysis but no names will be recorded in the computer. The results of the research will be reported in summary group form and will not identify any individual student.

Name: _____

School: _____

Age: _____

Gender: Male ☐ Female ☐

I am happy for the information that I give in this survey to be used for the purposes stated above.

Signed: _____

Date: _____

1. Which of the following do you think best describes a university *unit*?

(Tick one)

A degree course is made up of units ☒

A unit is one year's study ☐

A unit is your main subject of study ☐

Accommodation where students live ☐

2. Which of the following do you think best describes a university *faculty*?

(Tick one)

Faculties are elective subjects ☐

Courses are organised into faculties ☒

A class of students ☐

A large lecture hall ☐

3. Which of the following do you think best describes a university *degree*?

(Tick one)

One full year's study ☐

An award for completing a course ☒

A 3 or 4 year course of units ☐

How hard you work during the year ☐

4. Which of the following do you think best describes a university *school*?

(Tick one)

All students who are in a particular year of study ☐

Faculties are divided into subject-based schools ☒

A classroom with laboratory facilities ☐

A class of students ☐

5. Which of the following do you think best describes a university *undergraduate*?

(Tick one)

A student who has just graduated ☐

A tutor who works with new students ☐

A student who has not yet graduated ☒

A research assistant ☐

6. Which of the following do you think best describes a university *major*?

(Tick one)

The main subject stream of a degree ☒

The Coordinator of a study program ☐

All the units studied while at university ☐

A Professor ☐

7. What is the *20+ Pathway* at ECU?

(Tick one)

A degree course is made up of 20 units ☐

People over 20 may apply for direct entry ☒

The top 20 students in each year of a course ☐

A system of student loans ☐

8. How well do you feel you understand what your career options are, concerning the types of courses you could study at university?

(Tick one)

I know a little ☐

I feel that I know enough ☐

I would like to know more ☐

The job I want does not require university ☐

9. What is HECS?

(Tick one)

An academic scholarship ☐

Deferred payments of university fees ☒

A system of marking ☐

Student Guild fees ☐

10. About how much will it cost to study one unit at university?

(Tick one)

\$100	\$500	\$1,000	\$2,000
	✓		

Thank you for helping with this study and completing the questionnaires.

11. About how many *face-to-face* hours per week does one unit take up? (Tick one)

3	6	10	15
✓			

12. About how many *face-to-face* hours per week is needed to do a full-time degree course? (Tick one)

5-8hrs	12-15hrs	20-25hrs	25-35hrs
	✓		

13. How many semesters are there usually in one uni year? (Tick one)

5	4	3	2
			✓

14. The following are some of the difficulties that students face at university. Please rank them in order of importance to you.

(Rank 1 most important to you... 7 least important)

Finances/cost

Family/Personal

Workload

Friends & socialising

Not knowing about the university system

Getting a job afterwards

Getting used to university life

15. Would you like to visit an ECU campus?

YES	NO

16. I would like to go to university? (Tick one)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

17. How enjoyable do you think going to university would be? (Tick one)

Very low	Low	Average	High	Very high

18. In what ways did you find the RAECU website enjoyable to use?

19. In what ways did you find the RAECU website attractive?

20. How many minutes did you spend using the RAECU website? (Tick one)

1-5min	5-10min	10-20min	over 20min

21. How did you use the RAECU website in a group or alone? (Tick one)

In a Group	On my own

22. Which websites of the following universities have you visited? (Tick ALL applicable)

Curtin University

Edith Cowan University

University of WA

Murdoch University

Notre Dame University

23. How would you rate your enthusiasm to tour the RAECU website *again*? (Tick one)

Very low	Low	Average	High	Very high

24. Did you find using the RAECU site an enjoyable experience? (Tick one)

Yes, I would visit again

Yes, but would not visit again

No, but I might visit again

No, I would not visit again

25. How much did the website make you concentrate? (Tick one)

Very low	Low	Average	High	Very high

26. What weaknesses did you find with the RAECU website?

27. What strengths did you find with the RAECU website?

28. Using the website gave me more confidence to pursue the idea of going to university? (Tick one)

Strongly disagree	Disagree	Neutral	Agree	Strongly agree

29. Did you post a question on the RAECU Bulletin Boards (BBS)?

YES	NO

30. How useful did you find using the RAECU website? (Tick one)

Very low	Low	Average	High	Very high

31. What sorts of useful information did you find?

Appendix D

RAECU Survey Introduction given to students at the beginning of each survey session.

RAECU Survey Introduction

Hi, I'm Jack Seddon and I come from Edith Cowan University where I am doing Honours in Multimedia.

I have been looking at website design and have built a website that is designed to be more friendly towards senior high school student who may be interested to investigate the web network at ECU - It's not a separate network but more a portal into the larger system.

What I would like you to do today is:

- Fill out a survey form - about 10 mins
- Then visit the website - <http://www.ecu.edu.au/pa/raecu/index.html>
- Then fill out a similar survey form (15 mins)

Video given to participating teachers

- ECU As You See Us

CD ROM given to participating teachers

- Includes video clips & RAECU Website

Any Questions...

Click around ECU

You may have seen on the website that we are running a competition for making websites (actually we are just testing the idea this semester).

When the next round happens for I will let you teacher know about it (and there are good prizes).

Thank you very much for having me here and helping me with my studies.
I hope that one day I can see some of you again at Edith Cowan University.