Abstract

This paper describes results of a study evaluating the content, functionality and design features of an innovative online website called the Doorway to Research (http://rsc.acid.net.au/Main.aspx), which was developed to support international graduate students studying at universities in Australia. First, the key features of the website are described. Second, the result of a pilot study involving 12 students and faculty members who tested key aspects of the design, content and functionality of the website and provided written and oral feedback based on task-based questions and focus group discussions are explored. Finally, recommendations for future development are presented. Results of the study indicate general student satisfaction with the website and its design, content and functionality, with specific areas identified for further development.

Keywords: Innovation, technology, international graduate student, web-based resources, NESB students, social networking.

1. Introduction

This paper describes results of a pilot study of stakeholder responses to an innovative online website for international graduate students studying at universities in Australia called the 'Doorway to Research'. First, an outline of key features and considerations of the website development will be described. Then the results of the study will be presented. Finally, implications and recommendations for further development will be discussed.

The use of online environments to support international and non-English speaking background (NESB) students has grown significantly (e.g., Bates, 2001; Bretag, Horrocks, & Smith, 2002; Chumley-Jones, Dobbie, & Alford, 2002). As the Australian post-graduate research system currently has strict time limits for completion of higher degree research (HDR) students (AEI, 2010), the primary goals of the 'Doorway to Research' website are to enhance research and research training by increasing student understanding of cultural and academic differences between their home cultures and Australian culture (Ingleby & Chang, 2009); to enhance their language skills to support the requirements of successful graduate studies in Australia; and to enhance their knowledge and skills in their academic research areas of interest (Marcus & Gould, 2000; Pearce, 2002).

The Doorway to Research website is intended to enhance the quality of the research and research training experience by expanding and enhancing:

- Understanding of Australian culture and language;
- Understanding of Australian research culture;
The online resources include four key topic areas:

- **Life in Australia** – This topic features resources based on materials from the Australian government to provide key information and advice;
- **Research in Australia** – This topic features links to key research facilities, funding agencies and universities in Australia;
- **Research Training** – This topic features links to resources that support reading, writing, listening and speaking in English; as well as professional development for researchers; and intercultural skills development.
- **Fields of research** – This topic features links, activities and information about research studies within different disciplines.

Resources and functions incorporated into the website include videoclips, self-assessment activities, and individual student profile pages incorporating social networking functionality. For example, search functions within the site will enable users to identify other users by region, topic and research interest. By connecting with like-minded colleagues before arrival in country, new students may begin their studies within a community of learners (White, 2004; Woodman, 2004). It is anticipated that these online communities will also extend to provide on-going support and collaboration throughout the students’ studies, and ideally, post-graduation (Web, 2002).

Anticipated learning outcomes include increased confidence and enhanced understanding of the Australian cultural and research environments, and increased networking with contacts for support during candidature; and skill development in English comprehension and use (Cotterall, 2004; Waschauer, 2002). By improving the quality of their personal and professional experience, it is anticipated students will experience more satisfactory progress through candidature and timely completions will result (Finch, 2001).

### 1.1 Background

In 2008, the Queensland University of Technology (QUT) in Australia identified the development of its profile as a research intensive university as a key goal. One of the performance indicators in realising this goal was to increase the proportion of international graduate students from 20% to 50% over a five-year period.

The University Research Students Centre (RSC) was aware that many of its international graduate students experienced delays between receiving their acceptances and arriving to commence study, usually due to visa approval processes. Students reported frustration during this time as they awaited commencement. They also reported anxiety in the first months in Australia as they sought to make the transition to graduate studies and life in a new country (Martin, MacLachan, and Karmel, 2001). It was agreed to develop a website to deliver information and activities to students while they were awaiting commencement to support transition.

To support these students, the RSC decided to develop a website to help prepare students before their arrival in Australia, by delivering online information and support to students between the period of their acceptance to their graduate programs and their arrival into the country. It was anticipated that increasing international graduate student numbers could create challenges for the institution in terms of providing support in terms of differences related to cultural, linguistic and academic factors. These factors also informed the development of the DR website in terms of the use of online delivery, and key design decisions related to content, design, and functionality.
1.1.1 Cultural, linguistic and academic factors

Cultural, linguistic and/or academic differences between student home cultures and/or institutions and the Australian context may impact students' progress. Culture is a filter through which we perceive and experience the world. Thus, cultural differences may effect communication between students and their supervisors, students and other students, or students in the greater community (Marcus & Gould, 2000). Providing clarity of the appropriate and reasonable expectations of students and supervisors in terms of the research training environment in Australia is a key consideration.

Linguistic challenges may include high level, and often highly specific, language skills and/or knowledge. For example, graduate students are expected to be able to write appropriately in a specific genre or discipline, present orally in seminars and at conferences, as well as interact appropriately with colleagues and others. They are expected to know and be able to use discipline specific terminology appropriately, and to read regular academic journal articles (Web, 2002). Engaging in critical thinking and reading to articulate and evaluate new ideas is a challenge for all research students, and can be made more so when involving a second or third language.

Finally, different countries and different institutions often have distinct academic cultures. Differences may include expectations regarding student and teacher/supervisor roles and responsibilities, discipline-specific skills expectations, or even different understandings of approaches to research (e.g., what it is, how it's done) and requirements for different types of research degrees (Briguglio, 2000). Short videos by key researchers discussing their approach to supervision of research students and expectations of the candidate's journey is one approach to addressing this need on Doorway to Research.

1.1.2 Online delivery

The RSC was aware that many of its international graduate students experienced delays between receiving their acceptances and arriving to commence study, usually due to visa approval processes. Students reported frustration during this time as they awaited commencement. They also reported anxiety in the first months in Australia as they sought to make the transition to graduate studies and life in a new country. Given the window of opportunity to provide support at a distance, developing a website to deliver information and activities for students online while they were anticipating commencement to support transition appeared to address these key issues most effectively and efficiently. Providing free access 24/7 to research discipline specific information in English which student can read and listen to is aimed at strengthening linguistic skills as well as understanding.

2. Design considerations

Development of the website was also influenced by a number of key design issues: information access, relationship development, linguistic and cultural awareness development, multi-institutional access, and privacy concerns.

2.1 Information access

The initial impetus for the development of the Doorway to Research was to create a portal for international students which could simplify access to relevant information regarding living and studying in Australia and Australian institutions. For example, while many university websites have extensive information on many different topics, limited search functions may make it difficult for students to access the information, minimizing the impact (Chumley-Jones et al, 2002).
In addition, it was determined that an online environment could provide the best access for users in diverse geographical locations (e.g., pre-arrival graduate students), allowing both synchronous and asynchronous access to access content, discuss content, add content, and/or evaluate content (Woodman, 2004; Woodman & Kazouillis, 2007). Another key design issue was a desire for the minimal use of text in the interface. Many international students come to Australia from non-English speaking backgrounds (NESB), thus text-intensive websites can be problematic (Marcus & Gould, 2000; White, 2004). They can ‘get lost’ in a sea of words and miss relevant information. The principle of ‘less is more’ was therefore a key feature of the design of the Doorway to Research website. Furthermore, use of graphic rather than textual information, and use of multimedia (e.g., video clips) to illustrate key concepts in English and other languages can increase usability by presenting critical information in alternate modalities. The site will have both public and private content areas, supporting external inquiries (and possible future marketing) through publicly available resources, while also supporting private social networking functions.

2.2 Social networking and relationship development

To address the isolation often experienced by new graduate students, who by the nature of graduate study tend to work in small groups or individually, a key aspect of the design of the Doorway to Research was the incorporation of social networking functionality (Cahill, 1997; Cotterall, 2004). This functionality should allow users to create their own profile pages (e.g., like in Facebook), identify other students from their own cultural and/or academic background at their (or other) institutions to ‘friend’, etc. By making such connections prior to arrival in country, it is anticipated that new students would be able to find support within a community of scholars, discussing life and academic issues with others who had ‘been there’ already, and therefore be better prepared upon arrival to begin their studies and research.

2.3 Linguistic, cultural and research development

Providing access to online resources for autonomous language skills development was also a key design feature of the Doorway to Research (Finch, 2001). Many international graduate students experience difficulty in working and living English. However, generic language programs may not be appropriate to learners at their level. Finding time to study language can also be challenging. Therefore, providing links to key language development sites for different language skills, allowing users to rank sites, and providing strategies for identifying more personally relevant sites can promote autonomous learning whereby learners expand and explore their personal journey of language development (Bretag et al, 2002; Briguglio, 2000; White, 2004).

Cultural differences can also influence general as well as academic understanding and experience (Bruce, 2009; Cahill, 1997; Ingleby & Chung, 2009; Marcus & Gould, 2000). Therefore, one goal was to incorporate case studies that introduce and explore differences between Australian and other cultures can raise awareness of such differences, and lead to better understanding of expectations and perceptions (e.g., how is this different from what is done in my country).

Finally, different countries and different institutions often have distinct academic cultures. Differences may include different expectations regarding student and teacher/supervisor roles and responsibilities, varying discipline-specific skills expectations, or even different understandings of approaches to research (e.g., what it is, how it’s done) and requirements for different types of research degrees (Cahill, 1997). Therefore, the Doorway to Research provides links to research support sites for specific institutions, as well as case studies for specific situations which may be encountered within Australian academic context.

These resources include: access to resources developed to support Research Graduate Capabilities including project management, writing and critical thinking. It was
anticipated that pre-arrival students could benefit from reflection on the skill set and the pedagogical approach adopted in the materials, and arrive better prepared to begin their studies and research.

2.4 Other issues

Consideration was also given to a number of other issues which were identified during the development process have impacted on design decisions. For example, although initially intended for the Queensland University of Technology only, interest in the Doorway to Research was shown by a number of other institutions within the Australian Technology Network universities (ATN). Therefore, site functionality included modifications to allow any future partner institutions to personalize their own institutional information and administrative functions (e.g., adding users, etc.). Also, public content created by QUT was made more generic to Australia, rather than specific to Brisbane (or Queensland).

The incorporation of social networking functions within the website raised issues related to the creation of both private and public areas. Ensuring individual user control regarding access to their private and public pages was addressed by password protection to private areas, and providing individual users control over access to their personal information (e.g., location, name, network, etc.) (Bates, 2001).

Changes were also made to the section intended to help students develop their language skills. Although all graduate students accepted to the University are required demonstrate high levels of English language (Cahill, 1997), concerns have been raised by supervisors and other research personnel about this issue with the RSC.

3. Content

The Doorway to Research website incorporates three main types of resources:

- Key information,
- Skills development activities, and
- Interactive networking opportunities.

3.1 Topic areas

Resources were identified across four key topic areas: Life in Australia, Research in Australia, Research Training; and Fields of Research.

3.1.1 Life in Australia

This topic area features resources based on materials access from the Australian government provide key information and advice to support understanding of what will be expected of international students commencing study in Australia. Topics covered range from packing and budgeting to finding accommodation and accessing utilities.

3.1.2 Research in Australia

This topic area features a range of links to key research facilities, funding agencies and universities in Australia. There are also links to key policy and procedure that inform research in Australia. Finally information about the nature of the Research awards offered in Australia highlighting differences in course structure and thesis requirements.

3.1.3 Research Training
This topic area features a range of categories of language skills with links to resources that support reading, writing, listening and speaking in English. This section also includes intercultural training and professional skills development. Resources have been selected acknowledging the language needs of research students and their anticipated language capacity and need on admission. Through the resources the students are introduced to a suite of online resources developed by the ATN eGrad School to support research skills development identified as linked to employability. Heightened focus is placed on particular skills that may be culturally specific including referencing and critical thinking.

3.1.4 Fields of research

This topic features resources catalogued against the Excellence in Research in Australia Fields of Research. The ERA is a new framework for recent in Australia. Within each of the fields students can access links, activities and information about research studies within distinct disciplines. Within the Australian context “Fields of Research” may include: Mathematical Sciences; Physical Sciences; Chemical Sciences; Earth Sciences; Environmental Sciences; Biological Sciences; Agricultural & Vet Sciences; Information & Computing Sciences; Engineering Sciences; Technology; Medical and Health Sciences; Built Environment and Design; Education; Economics; Commerce, Management, Tourism and Services; Studies in Human Society; Psychology and Cognitive Sciences; Law and Legal Studies; Studies in Creative Arts and Writing; Language, Communication and Culture; History and Archaeology; and Philosophy and Religious Studies. This provides a discipline specific introduction to eResearch resources provided by the individual universities to support research candidature.

3.2 Identification of resources

Resources were designed to focus on particular needs identified through knowledge of student performance issues and discussion with key staff at QUT engaged in international student support.

The resources included:

- Video welcomes from graduate students from a range of countries and research backgrounds;
- Self-assessment/Short quiz activities with feedback features that facilitated access to appropriate on line resources and links;
- Research activities linked to discipline specific stimulus materials that could be stored, shared and reviewed,
- Institution specific information including course rules and graduate student service points, and
- Individual student profile pages where students can store resources, search across the system for students with common interests and readily access preferred activities and information.

Networking opportunities have been incorporated into the activities and profile page. Search functions include the ability to search by region, topic and research interest to allow the student to select engagement with other participants as well as key experts (e.g., experienced supervisors, international support services staff and training support staff). Networking functions were intended to help the students form friendships and create research links, as well as practice and/or develop discipline specific language skills, both pre- and post-arrival on campus.

4. Site functionality

A number of key features were incorporated into the design of the site. Adoption of common web community icons has been used to make the site more user-friendly.
Minimal use of text was also used to minimize possible confusion by NESB students. The social networking functions use layout and design features similar to more popular sites such as Facebook, while allowing the users the ability to tailor the look and feel of their own site and inviting others to share information they load for reference.

Inclusion of short video footage featuring students from a range of countries and in different languages is aimed at making new users feel comfort through viewing familiar faces and hearing familiar accents. Short titles and easy to access content in pop up boxes is intended to ensure the site facilitates access to information, helps users to find content rapidly, as well as linking to profile pages for on-going reference.

For institutional use, in terms of content, while regular review of the material may be possible the site encourages users to provide feedback and contribute to the updating and correction of the site going forward. Functionality has also been developed to allow for the easy loading and revision of materials by the University Research Students Centre in order to reduce costs going forward as on-going input from the web and design team may be limited.

As noted previously, functionality has also been incorporated that would allow administrators at different universities to include materials exclusive to their students in addition to the more generic information provided. The extent to which this will be required is yet to be considered but adds another dimension for tailoring the site to the needs of specific cohorts.

5. The study

A primary aspect of the Doorway to Research project was the incorporation of empirical assessment of the key design features of the website. To ensure quality assurance in the development process of software and online resources, on-going testing of functionality, design and content was incorporated into the development design. To date, two pilot tests of the site have been done with increasing numbers of stakeholders. This paper reports on second pilot study which occurred in May 2010.

5.1 Purpose

The purpose of the study was to pilot test the Doorway to Research website with the main target usergroups including graduate students and academic faculty members. The focus of the data collection was on user perceptions of three main features of the website: design; content and functionality.

5.2 Participants

Participants in the focus group included 75% (n=9) international post-graduate students (5 males, 4 females), and 25% (n=3) male academic faculty members, for a total of 12 participants. They included representatives from the faculties of Health (25%, n=3), Built Environment and Engineering (25%, n=3), Science and Technology (33%, n=4), Creative Industries (8%, n=1), and Education (8%, n=1). All participants responded to an email sent to graduate students and faculty at the university asking for volunteers to trial the Doorway to Research website.

5.3 Methodology

Data was collected in two ways. First, participants were asked to do specific tasks individually on the website during a session in a computer lab at the university with DR development and research team present to answer questions. These tasks targeted key aspects of design, content or functionality. Participants were asked to record their impressions or comments on a handout as they completed each task.
Second, the whole group participated in an oral question and answer session, in which questions of their general perceptions of the website (similar to Tasks 13-15) were asked, with responses to questions recorded by a member of the research team.

Participant responses were compiled and anonymized by assigning an identification letter to each participant. Responses were analysed in terms of the individual tasks (i.e., responses to the specific tasks and/or questions), as well as general trends related to the three key issues (e.g., design, content, functionality). Only comments which appeared unambiguously positive (e.g. “good”, “I like it”) or negative (“I didn’t like it”, “it didn’t work) were labelled and reported in these categories.

5.4 Results and Discussion

Responses to each task are analysed and discussed individually in the next section. First, responses to the task questionnaires are presented, followed by results of the group discussion. Responses are analysed in terms of the individual tasks, as well as overall perceptions of the three key issues (e.g., design, content, functionality), and illustrated by participant comments as relevant.

5.4.1 The Task Questionnaire

First, the data from the task-questionnaires will be explored. Participants were asked to individually complete a number of tasks related to content, design or function of the DR website, then provide written feedback to specific questions. Respondents were assigned a letter as identification.

Task 1: What are your first impressions of the website (e.g., design, layout, content, ease of use?)? Any suggestions for changes?

According to participants, their first impressions of the website appear favourable, with the majority citing the design as “Easy” (58%, n=7), the layout as “Good” (42%, n=5) and the content as “Good” (17%, n=2). Some comments included:

"The design and layout is attractive and easy to use” [B]

"I had a very good first impression" [I]

"I could spend hours on this, there is a lot of very useful information”. [I]

Some suggestions for modifications included in terms of layout:

"Too white a middle frame and can be a little dark like the home page in the other page” [A]

In terms of content and design, two participants had concerns about wording:

"The content structure is unclear. E.g. should "Field of Research” be under "Research in Australia”? [C]

"I would call it Doorway to Research in Australia or Australia's Doorway to Research”. [J]

Another pointed out that "Flash won’t work on iPad”. [M]

Task 2: Watch one of the videos on the front page. Which video did you watch? Did you find it helpful or interesting? Was there anything you like/disliked about it? Why?
Participants looked at a number of different videos. Most of the video clips are of current international graduate students introducing themselves (usually in both English and their mother tongues), and explaining briefly about their research projects. Reception of the videos appears to be mixed, with some participants (33%, n=4) indicating they liked the videos, while an equal number (33%, n=4) disliking them, or making negative comments.

Positive comments cited the cultural and linguistic diversity of the speakers:

"Sri Lankan speaker (Mr Semasinghe); It's very nice to find a video segment in Sinhala. Balance of male and female. May be two (a girl and a boy) from each language."). [B]

However, there was some concern about the content of the videos.

For example, [D] says

"I didn't think the videos would be helpful for the incoming students, because they are mostly the general introduction about their circumstances and the advantages of studying in QUT."

Similarly, [H] indicates the videos "(didn't) have so much information".

Task 3: Using the Doorway to Research site, can you find information about visa conditions related to “Working in Australia”? Did you find the information? How easy was the navigation? If you had difficulties, what were they? Is there any information you would like to see added?

The majority of participants found the navigation “Easy and clear” (66%, n=8). Some comments included “Yes, very easy” and “Easy and clear”. However, a minority (33%, n=4) found it difficult due to the multiclick requirements.

For example, [A] notes

"It is too complicated to access. I need to go Life-In_Australia > Working > Then I get the screen. It is too complicated. I need to click too many steps."

Some suggestions for modifications included multilingual information (25%, n=3), and the inclusion of testimonies from other experienced international graduates with tips for success in Australia (or in their specific field) (17%, n=2).

Task 4: Using the Doorway to Research site, can you find out the number of universities in the state of Queensland? How well did the navigation and search functions work? Were you able to find the information? Any suggestions or comments?

The majority indicated that the navigation was "Easy” or "Worked well” (58%, n=7). Some comments included “Clear instruction and navigation” [C]. There were no specifically negative comments, although some suggestions for modifications included

"Scholarship information is missing. I think a lot of students will be interested in it” [C]

"the university list should be more readily available (without having to go to many links).” [B]

Therefore, while participants appear to feel positively about the navigation and search functions (e.g., the design and functionality), they have some suggestions about the type and focus of future additions for the content. These suggestions illustrate their
interest in more academic and research focussed content, rather than linguistic/cultural information, which is arguably consistent with their status as postgraduate research students, who have already been accepted to study in an English medium institution.

**Task 5: Log in to the Doorway to Research site (you will have received your login password in your email this morning). Was the logon process easy? If not, what difficulties did you experience? Any suggestions for making logon better?**

The majority of participants said they found the logon process easy (75%, n=9), with no specifically negative comments.

**Task 6: Go into your PROFILE and edit and update it. Add tags that represent you and your work. Edit the country of origin so that it is correct. Was the editing process easy? If not, what difficulties did you experience? Any suggestions for making the process better?**

The majority of participants indicated they found editing and updating the profile easy (75%, n=9), while only 25% (n=3) found it difficult.

As [H] notes:

"Yes, it was (easy). If they know how to work with this social network, it would be easy for them to manage it."

Some suggestions for modifications included

"Why not using various colours for different countries? Grouping similar interest tags into a common panel?" [C].

One particular bug was also identified in terms of editing the country of origin, which was not working during the trial. It has since been addressed.

His comment is also interesting, as it specifically identifies the issue of prior experience with social networking as critical in ease of use of these functions. Although it was not specifically asked in this study, it became clear during the session that some of the participants were very 'tech-savvy' (e.g., including a couple who worked and/or researched in IT), and some had very little experience. Although the sample size in this study is too small to investigate this link, it raises some interesting questions.

**Task 7: Join the “Testing Doorway” Group. Was the joining process easy? If not, what difficulties did you experience? Any suggestions for making it better**

While 58% (n=7) found this task difficult, 42% (n=5) found it easy. Some of the difficulties or issues raised by participants related to issues such as the purpose of the group, and privacy issues:

"I don’t know what is the purpose of the group. I need to understand when I am going to join" [A]

There was also some confusion regarding the use and definition of the term ‘tag”

"Difficult to find the right tag. Many tags have the similar context (e.g. many are about "Groups". I thus was confused with which one of them I should have gone with” [C]

"No. I don’t know what you mean by TAG. Give an example and explanation in the TAG part. What is the purpose? Where should we find the TAG in the page?) [J];"
One suggestion for modifications included "Colouring the tags for different categories" [C]

The user feedback suggests that designers need to always remember the diversity of backgrounds of the users, in terms of language, cultural and/or experience with technology. The instructions and help sections need to be improved to provide clear information, taking into consideration possible language issues, as well as influences of differences in user experience and/or expertise with social networking functionality.

**Task 8: Can you locate another user? Have a look at their profile and select “Follow this user”. Was the process easy? If not, what difficulties did you experience? Any suggestions for making it better?**

Locating another user appeared to be “Easy” for the majority of participants (75%, n=9), with one commenting “Keep this function, it is excellent” [A]. Only 17% (n=2) participants indicated difficulty or other concerns. For example, although [A] likes the function, he also commented that “There is no privacy at all. I look like I am naked to everyone.”

Some suggestions for modifications included

"Research related information on the profiles following. After all, this is a site for ECRs [Early Career Researchers].” [C]

"Can you search for a user without having to scroll through names; This might be easier if the site grows.” [M]

Therefore, it appears that most participants had a favourable response to this function. Also, as [M] notes, using social networking becomes more interesting and useful only when there becomes a ‘threshold’ of active users. [For example, it took Facebook several years before it reached a ‘tipping point’ in use].

**Task 9: Locate the Grammar Safari site in the Writing Skills area. Rate it (good or bad). Bookmark it. Was the website easy to find? If not, what difficulties did you experience? What did you think about the site itself? Why? Did you rate it?**

While 58% found finding and rating the site “Easy” (n=7), some concerns were raised about difficulty in finding specific information. For example,

"Many tags have overlapping contents. If I have a grammatical problem, I may not know exactly where I should go.” [C]

So, while the navigation was easy, and the content was considered relevant, clarification of search functions appear to be a concern.

There was also discussion about the area in which this site was found, which was called "Research Training”.

"How should I have known that Research training take us to all these skills.”[ J]

It is interesting to note that this section was originally named “Language Skills”, based on the hypothesis that users would want or need to develop their English language skills, because they were from NESB backgrounds. However, a key finding of the first pilot study, which involved five international graduate students, was a strong negative reaction to the idea that their language skills specifically (e.g., in English) warranted a special category. They felt that language skill development would be most useful if
contextualized within a more general research skills development program, especially one that focused on specific language skills, relative to (1) their advanced level of study (e.g., masters or PhD in research), and (2) their discipline-specific language use needs (e.g., reading and writing journal articles, presenting conference papers, etc. in IT, Biochemistry, Education, etc.).

Task 10: Locate your Field of Research? Was the process easy and intuitive? If not, what difficulties did you experience? What sort of material would you expect to find here as a new international research student?

Locating their own Field of Research was found to be easy by the majority (58%, n=7), with only 17% (n=2) indicating difficulty. However, the lack of information remaining in some specialist areas was noted (33%, n=4).

Suggestions included:

"Could put some information about each area” [F]

"It can put some information about person which has important publications or finding area.” [F]

"I would suggest you to put an option "search“ and students can type in their research area. It would be much easier and saving of their time.” [H]

This issue is acknowledged by the development team in the Group discussion. Because of the early stage of development of the site, the expectation is that in the future representatives of each of the Fields of Research (e.g., from various faculties, and possibly additional universities) would provide support for identifying relevant and specialist resources for students in these often very specific areas.

Task 11: Locate an image on the web and upload it (as content). Was that process easy and intuitive? If not, what difficulties did you experience?

50% of participants found this task easy (n=6), and there were no specifically negative comments. Positive comments included "Very easy & intuitive“ [K] and "So easy” [H].

Again, these comments appear to support the decisions of the development team to base the design and functionality on processes familiar to most computer users.

Task 12: In your profile, go to Latest Content and select “Add New”. Can you start a blog? Was that process easy and intuitive? If not, what difficulties did you experience?

Most found this function “Easy” (42%, n=5), although couple commented on the time taken to upload.

Task 13: How satisfied are you with the experience of using this website? Would you use it again? If yes, how often and for what purpose(s)? If no, why not? Would you recommend it to your friends/colleagues? Why or why not?

The majority of participants (58%, n=7) were satisfied with the experience of using the website. Some comments included:

"Yes I would use it again.” [B]

"Yes, will definitely use it again. Has lots of information that I did not know of and would like to browse further.” [I]
"I like the general look and feel of the site; Yes I would encourage incoming students to use the site. I think it would prepare them or alert them to the expectations in the research training domain” [L]

Even those who were not as favourable indicated they would probably use it or refer others to it:

"Average, I may say or under average (Satisfied). Maybe, it didn't leave me a strong image (Would you use it again?) Yes, I would. Such a website is what people really need. It'll have significant contribution but it just needs some more polish” [C]

Another participant [A] also likes the site in general, but suggests a "need to modify and need more testing”.

It would appear that in general reaction to the Doorway to Research site was quite positive. In fact, the only negative comments could be considered more recognition of the early stage of development of the site, then overall criticism. The latter comments tend to focus more on minor function or content issues, than larger questions of purpose.

It could also be noted that some of the differences in responses to this kind of question may be related to the relative expertise of the participants: both [A] and [C] have extensive backgrounds in ICT or IT, including web design. At noted earlier, due to the small sample size, it is impossible to investigate this possible factor further in this study.

**Task 14: Was that similar to experiences with other sites? How was it different? Have you used any similar websites (e.g., university info sites, Facebook or other social networking sites)? How does this site compare (e.g. better, worse, the same)?**

The most participants who had experience with social networking found the site “good” (42%, n=5). Some comments included

"It is good that we can know before I am coming to Australia” [A]

"A good social networking website for academic purposes.” [B]

[C] compares the Doorway to Research to another website (e.g., http://academia.edu), commenting:

They serve different purposes and user groups. However, as both are sites for researchers, I think academia site has better design for research information. Of course, Doorway has more social information.”

Similarly, [I] notes "It is better and more informative than university websites.”

It is also useful to note that not all participants had experience with social networking (17%, n=2). As noted earlier, the implication for designers of such websites is to ensure clear instructions on use, including perhaps notes on why using social networking could be of advantage to users.

**Task 15: Was there anything about the website that made it easier to do your tasks? Which features of the site did you like the best? Why? Which features were the easiest to use?**
The simplicity of the design and functionality, and breadth of content of the Doorway to Research were cited as the best features of the website.

“I liked the website overall. Very useful and full of information.” [I]

“Easy to browse” [I]

“I like its simplicity and plainness” [L]

“Simple to use” [L]

“Well done to the people who thought of the idea and those that have implemented it” [L]

These comments appear to support the design decisions made by the development team in the initial stages of the Project, including the belief it would be of use to the target usergroups.

Task 16: Was there anything about the website that made it especially difficult to do your tasks? Were there features you disliked? Why? Were there any features you would not use? Why?

Key features of concerns also included those identified previously: amount of information and search features, both of which could influence ease of finding specific information.

“Too much information and hard to find required information” [A]

“Navigation problems because many contents are overlapping” [C]

These suggestions are related to content and search functions, and are not uncommon in the design of sites. However, they do suggest areas for future development for the design team.

Task 17: Are there any suggestions for features or applications which could be changed to make the site more useful (examples) and/or user-friendly (examples)?

There were a number of suggestions for additions including the need to add mobile sites by [A], a preference for avoiding directing to users to external websites from [B], a suggestion for links to social communities, such as the Taiwan Student Association from [C], and a request for the use of more pictures in more sections from [I].

5.4.2 Group discussion

After completing the individual tasks and questionnaires, participants took part in a group discussion, led by a member of the Development team. Discussions were open-ended, with prompts such as those questions used in in Tasks 15, 16 and 17. The prompts included questions such as “What did you like/dislike about the website, and any suggestions for changes or modifications”. Responses were written down. However, the specific speakers were not identified.

Content

There were six (6) suggestions related to the content of the site, and two (2) which could be considered content/design. Similarly to the individual questionnaires, the majority of participants were pleased with the content currently on the site.
Some additional suggestions included adding a section on writing the thesis and other similar documents; as well as adding more sections explaining and exploring cross-cultural differences in terms of relationships such as Student / Student and Student / Supervisor. There were also requests for information being made available in languages other than English, and also inclusion of more informational videos.

**Design**

There were seven (7) comments related to design issues. Suggestions included the inclusion of more pictures on the site to illustrate and make it more visually interesting; the need to clarify pathways to information; and the suggestion of a name change to "Doorway to Research in Australia".

**Functionality**

There were five (5) comments or suggestions related to functionality, and one (1) to design/functionality. As noted previously, the multiclick issue was identified (e.g., having to click through too many pages to get to specific information) as an area for further refining. Similarly, it was suggested that the search function could be developed.

Issues of privacy, and the ability to control or know who visits a profile page, also generated discussion. It was suggested that a clear privacy statement be included on the site, to indicate what information is private or public. Similarly, it was proposed that functions be developed to differentiate links that are internal or external, and to allow users to control this flow – including the ability to see who visited their pages.

Therefore, in general, the comments and suggestions in the Group session paralleled those found in the individual questionnaires. The majority liked the Doorway to Research website, with 83% (n=10) indicating the the website should be retained and made available to the university community.

**6. Conclusions**

This paper described results of a study evaluating the content, functionality and design features of an innovative online website called the Doorway to Research, which was developed to support international graduate students studying at universities in Australia.

The results of a pilot study involving 12 students and faculty members who tested key aspects of the design, content and functionality of the website and provided written and oral feedback base on task-based questions and focus group discussions indicated general student satisfaction with the website and it's design, content and functionality, providing support for most of the original design decisions made by the development team with a few specific areas identified for further development.

In terms of content, the overall response was very positive, with most participants appreciating the focus and scope of the content provided in the site. They applauded the inclusion of information on both life issues (e.g., life in Australia) and academic issues (e.g., research skills development, fields of research), and most participant suggestions concerned areas for further development (or addition information) within the areas identified by the designers.

The approach to design and functionality, which emphasized simplicity and clarity to address the issues of NESB students, also appeared to be positively received by the participants. The implication for designers of such websites is to ensure clear instructions on use, including perhaps notes on why specific functions such as social networking could be of advantage to users.
For example, for international students, it could be suggested that they could use social networking to (1) meet others of their cultural and/or linguistic backgrounds to develop social networks in the same geographic area or same institution; (2) meet others who share their research interests in the same and/or different institutions; (3) use their profile to set up a virtual research portfolio (e.g. with examples of their research, CV, etc.) for developing collaborations and possible job search during and after completion of their degrees, etc.

7. Future development

Future development is expected in the key topic areas. For example, in the "Fields of Research', researchers will be encouraged to contribute stories or materials that provide advice and information that help the students to situate themselves in this discipline specifically. Over time we may invite some video case studies from experienced researchers concerning: how they got their start in research; what the average day for a senior researcher is like; key factors for research career success; advice for new researchers; and common challenges faced by new researchers. In addition, key researchers and professional staff as well as students from within the discipline will be approached and encouraged to contribute to this by providing advice on useful resources they may have identified.

Ideally, each Discipline area will incorporate some introductory comments on the Research environment as it exists in this particular discipline. This may include any guides to writing within the discipline available from faculties. In addition, they will provide a catalogue of resources providing examples of written and spoken work in the discipline area (e.g., links to Australasian Digital Thesis Database, ePrints, milestone exemplars for QUT, podcast lectures). With current functionality, and these additions, site users should be able to do a range of things including: joining a discussion on the topic of the case study; saving resources as favourites in their profile; joining a group that has an on-going interest in the topic; rating the case study and providing comment on it for others to view; sending invitations to suggest other case study topics; and using links to email experts for further advice on specific issues.

References


