A library portal using graphical exploration for pre-entry university students

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Abstract

The University of Portsmouth's pre-entry project, PrepUp, contains a Library section which endeavours to use simple graphics and a virtual world metaphor to acculturate students to the University Library before they begin their course. Using graphical elements it contains informative items and fun features to encourage exploration and discovery. Usage and feedback suggest that this is a useful addition to the project which engages students and assists them in getting to grips with their early days at University.

1. Introduction

For many students, adjusting to University life can be a big step. Coming from school or college there may be a dramatic adjustment in the size of a campus, the freedom in schedule, or the expectations of tutors. This is in addition to the social changes they are experiencing. Mature students returning to education may have more life experience but can be out of the habit of study and unfamiliar with current academic practice. Both types of students will face issues with jargon, university routines and geography, and possibly even larger language and cultural issues for international students. Typically Freshers' weeks can be overwhelming in the amount of information new students are expected to take in. Anything that can be done to alleviate some of the pressure on that week should enable better retention of information.

The University of Portsmouth's PrepUp project aims to provide an introductory experience to new students before they even arrive on campus. The Department of Curriculum Quality and Enhancement (DCQE) has been instrumental in setting up this project and involving faculties and support services. The central aim of DCQE is to enhance the quality of the student learning experience and promote student success [1]. The PrepUP project aims to start this enhancement for students who have been offered a place at the university in the summer before their arrival. Such students are provided with a pack of information about the University including their own unique login and password to the PrepUP website. The PrepUP name derives from 'preparing University of Portsmouth' students for their time here.

"The website comprises a range of features including: skills development activities, videos of lecturers and students talking about the course and learning experience, and an animated mock-up 'lecture theatre' that deals with frequently asked questions and social networking groups, enabling you to interact with other prospective students of your chosen course." [2] Technically, the PrepUP website is stored on a unix server, however it is portable to any platform including CD. During the 'testing and development' stage the site was tested on Internet Explorer 6, 7 and 8, Firefox and Safari. This accounts for some 94.9% of our visitors in the period 1 June 2009-25 August 2009. Figure 1 shows the percentage use of all browsers visiting the site. Some 16.4% of users were still using Internet Explorer 6.0 and one visitor was still on version 5.5.
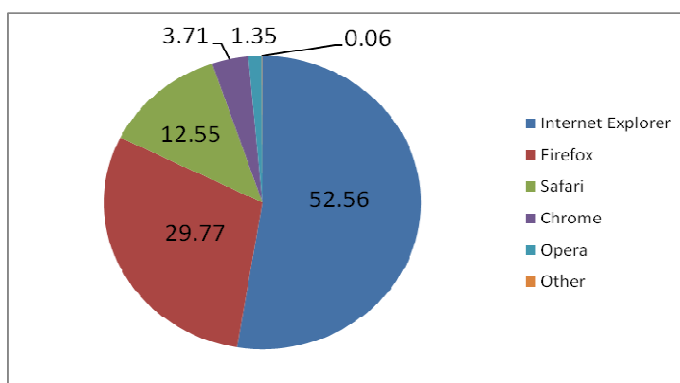
Figure 1: Percentage of users using different internet browsers

Initially the project was trialled with the Portsmouth Business School, and following the success of that trial based on the number of student registrations and the feedback received from the evaluation survey, the project was extended to include one department from each faculty within the university. It was at this point that the University Library was invited to participate and provide a library portion of the PrepUp website. Many schools and colleges have fairly small libraries so anything we could do to assist in acculturating students to a much larger and more complex facility would be useful. One of the authors has written previously on alleviating library anxiety [3] using tools such as tours (whether video, audio or 'virtual'), electronic induction via a website, and by means of an 'Alternative Library' encouraging exploration of a library web site in a decidedly non-standard form. The University of Portsmouth Library contribution to PrepUP is a precursor to the types of induction discussed there.

From the outset the Library felt that whatever else we contributed it should be both informative and have some element of fun as well. We did not want to simply replicate the Library homepage [4] with its huge wealth of information in a traditional structure. Attendance at the University's annual Learning & Teaching Conference, which in 2007 was titled 'Engaging, Entertaining & Educating: Promoting Student Learning' also provided much inspiration for thinking there might well be ways of developing something more engaging for students. One presentation in particular [5] demonstrated that students are willing to go to great lengths to explore and get involved if their imagination is engaged. The University of Salford's 'Curious?' game also fed into this process [6]. This showed that interesting design, together with compulsive game play, could be a big draw.

It was soon realized that the skills and technical abilities of Library staff would be insufficient to go too far down the design route ourselves, but DCQE were offering to provide the design and technical expertise if we provided the ideas and content. A small team from the Library worked together to produce a graphical representation of what we were imagining using PowerPoint with the understanding that this was simply a mock-up of what would eventually be constructed using Flash. Two images from this PowerPoint file are shown in Figure 2 and Figure 3 and demonstrate the desire from the outset that the Library contribution would be graphically rich. Figure 3 shows something of our thinking on how we might develop a very simple 'book' type help with turning pages which didn't eventually make the final project although a guide to library jargon did.
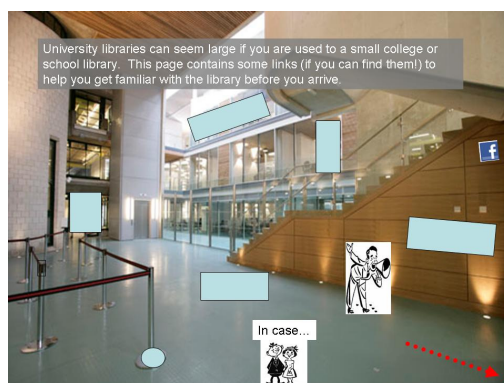
Figure 2: Prototype PowerPoint slide

Figure 3: Mock up of jargon guide

Building on work done with 'The Alternative Library' at a previous university [7], it was felt that a graphical approach would be much more appealing than pure text. Internet technology has moved on in the intervening years and it is much more likely that prospective students would have access to computers that would easily be able to handle the technical requirements of the graphics. Although NETBAGs (1980s text based adventure games) might have a certain retro appeal, we decided that a brand new extension to the University Library [8] would provide visual interest and excellence that would prove attractive to students as well as beginning the task of acclimatizing them to the Library building from the outset.

Content for the Library section might offer basic information, 'what we offer' and 'how we can help' and contain some short guides which could include what to study over the summer break, an audio/virtual tour or even a quiz or trail through the library website. Some of these ideas were implemented, some may yet come to fruition, but one very early thought was that this might be much more like a virtual world than simply a suite of web pages. Roo Reynolds, then a 'Metaverse Evangelist' at IBM and now the Portfolio Executive for Social Media at BBC Vision, provided much inspiration in his excellent presentation on 'How big business learned to love virtual worlds' [9]. His encouragement to see virtual worlds as an immersive experience that far transcended the apparent limits of a 'video game' was instrumental in making us want to provide something for students that engaged them more deeply.

As an aside, it is worth noting at this point that the Library was exploring various Web 2.0 type social networking technologies in an effort to interact with students in a more interesting way than our traditional website. For some time we had been investing in a presence at the biannual Freshers' Fayres in an effort to present the Library in an engaging way. In one year, for example a pirate themed 'hidden treasure in the library'; in another year a Dr Who themed 'bigger on the inside than it looks'; and most recently a Cluedo boardgame themed body in the library trail that incidentally taught information literacy skills. Creative ideas such as this are also being developed into other projects, currently works in progress for the elearning team, such as 'The body in the library – re-usable learning object'. This learning object shows how to use the library as a distance learning student, with the student as a detective discovering clues which will help develop information literacy. It allows a way of providing information for and interacting with new students in a friendly and engaging way.

These ideas in turn had led to the development of a Facebook page for the Library (with some 430 plus students signing up as 'fans' at the time of writing) as well as a blog (http://reden.wordpress.com/) that daily presents a 'Thing of the Day' – something weird or bizarre or interesting from around the internet that might or might not have an informational theme, and even a Twitter stream that in its early stages and with very little promotion already has nearly 150 followers.

2.   The Library in PrepUp

The virtual library presence is built with Adobe Flash software CS4 using the latest Action Script programming language, Action Script 3. It is dynamically loaded onto the page using Javascript. By researching the version penetration of Adobe Flash Player "the world's most pervasive software platform" [10] we decided to use an older player, Flash Player 9. In mature markets worldwide, including the UK, 99.8% of users use at least Flash Player 9. [11] For users that have Flash Player 8 or older we have scripted in a preloader which, when the page first loads, detects the user's Flash version and connection speed. If they haven't got the relevant player it will ask them to upgrade and offer a link to the latest Flash version. The Millward-Brown study [12] which forms the basis of the statistics

above also points to the global use of Flash which is important for our International students who this year have become the focus of the latest developments in the PrepUP project (see Section 4).

Figure 4 shows a schematic diagram of how the Library portion of PrepUp is arranged. Note that all the images are framed in the same way as the two introductory screens (shown here at the top left).
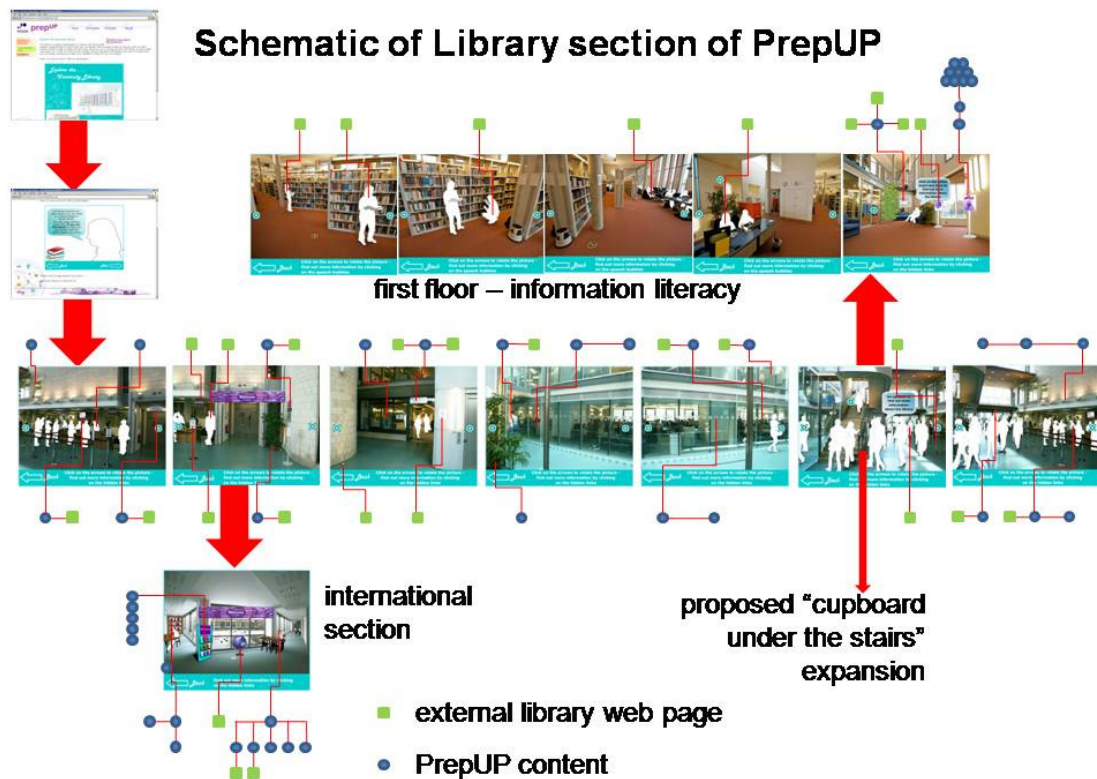

Figure 4: Schematic of project

A welcome screen begins with the following text above two images of the Library taken from architectural conceptions:

"The Library is a popular meeting place on campus with around 6000 students coming through our doors every day. Our friendly staff are ready to help you find just what you need - whether that's on paper or online. We have areas where you can sit and discuss work with friends, as well as silent study areas, an IT suite with 180 PCs and a wireless network throughout the building if you want to connect from your own laptop. Whatever you need to do, there's a place for you in your Library.

Check out what we have to offer by clicking below." (See Figure 5).

This welcome text remains visible above all of the Library's PrepUp content.
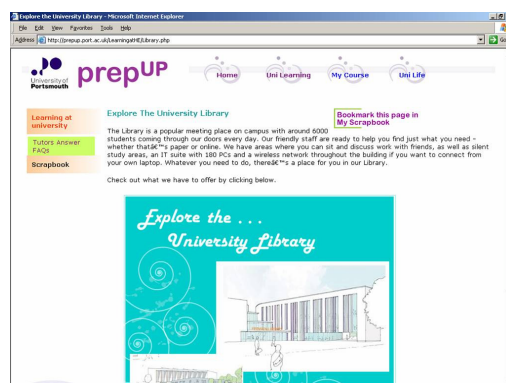
Figure 5: Library welcome page

From there a second introductory screen invites users to explore the subsequent pages and attempt to locate the links which are hidden within the images. Next users enter a sequence of actual photographs of the Library's atrium. These seven photographs provide a near 360° panorama of the space and each picture contains from three to six 'hidden' links. All told on the ground floor there are 40 such links, 18 of which link to external pages on the main Library website, 22 being content designed specifically for PrepUP. In fact, although the links are not immediately visible, passing the mouse over the portion of the image which contains the link turns that part of the image purple (the university's corporate colour). Some are harder to find than others. Also immediately noticeable is the fact that the people in the photographs have been blanked out. This avoids issues with privacy but also avoids the 'ghost library' syndrome of empty photographs. In addition it invites students to place themselves within the space to 'fill in the blank' as it were.
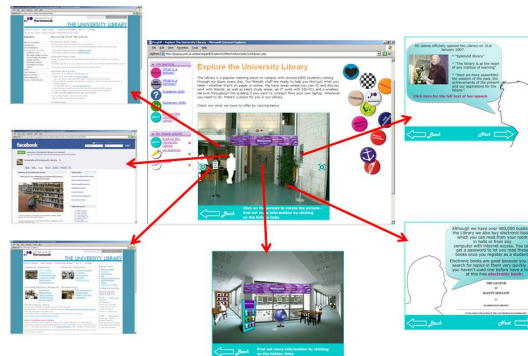
Figure 6: Example of view with links

Figure 6 shows an enlargement of one of the screens with the links highlighted and screenshots of where the links lead, (in this case three external sites on the left and three internal pages – two on the right and one below).

Once a link has been found, it will either lead to an external web page or a self-contained nugget within PrepUp. External pages open in another window to facilitate returning to the PrepUp space and to make it clear that you've left the project space. Internal nuggets vary from the briefest of introductions to the Library Catalogue or referencing (with further links to the relevant external pages), or portions of the project that were designed specifically for the purpose – such as the guide to Library jargon (see Figure 7), the 10 top tips for getting the most out of your Library (see Figure 8), or the helicopter

Figure 7: First page of jargon guide


Figure 8: Second page of top tips

Figure 9: Second page of quotes

parenting section which provides lines to drop into conversation should students' elders need reassurance (see Figure 9). Many of the links provide information as one would expect, but some of the links are purely there to provide a sense of fun and hopefully drive a desire to explore further. For a further explanation of the rationale behind this 'easter egg' type of approach see Collinson and Williams (2004) [7]. The links to Thing of the Day (see Figure 10), or the description of Freshers' Fayre activities fall into this category.
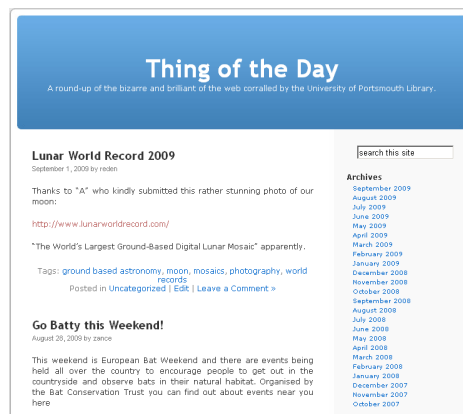
Figure 10: Thing of the Day

3. First Floor

All of the above went into the initial phases of the Library's corner of PrepUP. From the earliest stages we had ideas to take advantage of the physical library's upper floors and expand onto the virtual first floor offering help aimed at students ready to move on to the next phase of their learning. Here there are links to the Library's growing portfolio of Information Literacy tools. After the initial trial and first year of usage which was deemed successful following positive feedback from students, the next phase developed. A new major link, visible at all times, was placed on the image of the main staircase in the atrium and this takes the user upstairs. In addition, a speech bubble from a silhouetted figure on the ground floor invites the user to explore further.

The schematic in Figure 4 show the five of the six screenshots that form this part of the site. (The sixth is the 'reverse' view of the first screen to allow users to return to the ground floor if desired.) Once again, this is a panoramic view of the Library's latest extension. Upstairs, instead of hidden links which have to be 'found' by moving the mouse, there are silhouettes of a handful of people who have questions. The questions are to do with problems that students might be facing in undertaking an assignment and can be seen by placing the mouse over the silhouette. Clicking on the outline of the person will then take the user to the information literacy tool that is relevant to that question.

For example, Referencing@Portsmouth was a tool unveiled in 2006 [13] to assist students with their referencing queries and which has proved enormously popular – with students from other universities as well as our own. The 'question' in PrepUP which leads to this tool is from a student

knowing they ought to be referencing material but not sure how to go about it. There is also a newer suite of tools collected under the banner of findit@portsmouth [14] that is still under development, but currently includes help on finding items on a reading list, learning how to find and obtain journal articles, and moving beyond books and websites by exploring the 'information landscape'. Again, questions raised by the silhouetted figures in PrepUP link directly to these tools which are external to the PrepUP site itself.

Other features of the first floor, however, are 'internal' links again – for example a photo of the Faculty Librarians and their assistants in which individuals are clickable and which provides both a textual introduction and an aural snippet in mp3 format together with a link to the member of staff's profile page. There is also a noticeboard which gives an overview of the information literacy tools which will be found on further exploration of the floor.

4. International PrepUP

One of the Library's ideas for developing our portion of the site was to include an 'international' section welcoming our many overseas students. At the same time, the larger PrepUP project – in the light of the success of the initial project - was planning a similar expansion at the behest of Directorate. The team developed iPrepUp, the details of which were sent to international students in August 2009.

Integrating into university life is particularly problematic for students who may have experienced a different learning culture to the one they will encounter in UK higher education. International students may be unsure about how they should approach their lecturers or with notions of group work and independent learning. In addition, they may be unfamiliar with the concept of plagiarism, data protection and copyright. The iPrepUp project includes information about these important areas plus details about the course a student will be studying, videos of staff and students answering FAQs and much more besides.

At the moment iPrepUP is a pilot, but if it receives positive feedback from students it will be extended to include more information about learning and living in the UK. Very early feedback suggests that it is being well received by both staff and students:

"I've had a look at PrepUP and iPrepUP, they look very informative and useful for new students. The look and feel is good and the navigation is easy." (Information Services Project Officer)

"I have looked at the iPrepUP website and just wanted to pass on some feedback, firstly the websites layout is brilliant and looks very interactive, I especially like the video section." (New Student Union sabbatical Vice President)

"Looks super - thanks!" (Head of Department)

The eLearning team are considering developing a more integrated solution, with 'build on load' that will meet students' needs. By using an intelligent system the site will cater for the specific requirements of undergraduate, postgraduate, full time/part time and other students and ensure that they are pointed to information that is relevant for them and are not faced with a myriad of redundant material.

The Library's international section is somewhat simpler and is once again made up of an image to explore – maintaining the graphical theme of the Library's contribution and still encouraging discovery rather than explanation.   See Figure 11.
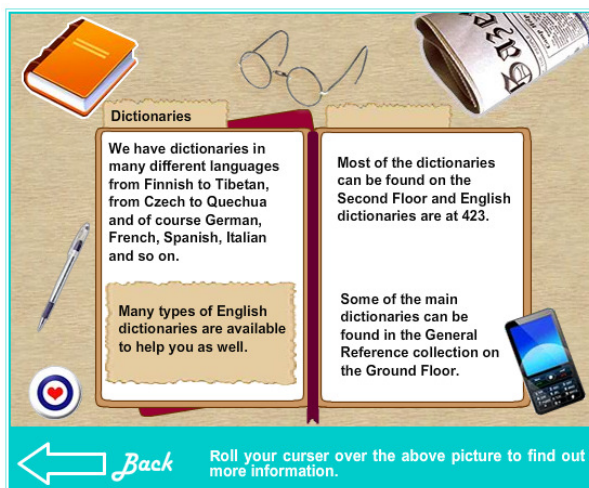

Figure 11: International section

Some of the contents include:
-   a representation of the multilingual welcome banner which hangs in the atrium of the physical library

- a specially written 'leaflet' welcoming students from abroad which has been translated into various languages
- a bookcase highlighting our literature, geography and history sections from a large range of countries around the world
- a desk which can be zoomed in on and gives the user the option to pick up certain objects on the desk to explore (e.g. a book giving information about language dictionaries, or a newspaper promoting our foreign language newspaper holdings etc) – See Figure 12
- links to external sources of useful help and information.

One example of the latter are the International Reflections of Leeds Met University (http://www.lmu.ac.uk/internat/reflects/index.htm) which are both interesting and informative and can spark ideas for further development.

Figure 12: Example of content page from international section

With the addition of the first floor and the international section, the Library PrepUP project now has some 78 links to find, 30 of which lead to external pages and 48 of which are pages designed specifically for PrepUP.

5. Usage and Feedback

In the period June 2008-October 2008 there were 3722 hits on the index page. Table 1 shows the number of visits per person.

1 - 2	3 - 5	6 – 10	11+
214	85	51	15

Table 1: Visits per person to the PrepUp site

Within that, there were 542 hits on the Library portion of the site. At this point it should be remembered that the PrepUp project was limited to just a handful of departments in its first year after the initial Business School trial and only now, as Phase III gets under way, is it being rolled out across the University. For comparison there were over 2000 hits on the 'my course' section of PrepUp, 805 hits on the 'Life' section, 275 hits on the link to the Facebook information which provided groups for students to join and meet with each prior to their arrival, 236 hits on a virtual tour of a lecture, and 111 on a numeracy skills section.

Comments from a survey of students are shown in Table 2. Here you can see that of the 63 responses, 60 found at least some of the Library section useful and the majority felt that 'most of it' was useful.

Answer Options:	No use at all	Very limited use	Some of it useful	Most of it useful	All of it useful
Tutors answer FAQs	0	1	17	39	6
Academic Skills material	0	1	19	33	10
Numeracy Info	1	4	27	25	6
Exploring the Library	0	3	14	39	7

Table 2: Student Feedback, n=63

Obviously, there are no statistics yet for a similar period through to October 2009, but early figures show a big increase in usage. In additional the wider PrepUP project team have adopted Google Analytics to provide statistics in some detail. Some of the figures available are presented here and in Section 1. In the period June 2009-25th Aug 2009, there were 41,453 hits on the site from 2,961 visitors making 6,153 visits. Within that there were 515 hits on the first page of the Library portion of the site. Again for comparison, there were over 1653 hits on the 'my course' section of PrepUp, 1855 hits on the 'Life' section, 1530 hits on the link to the Facebook information which provided groups for students to join and meet with each prior to their arrival, 671 hits on a virtual tour of a lecture, and 395 on a numeracy skills section.

In the light of the international section, it is interesting to note that of the 6,153 visits, there were 58 individual countries represented and Table 3 shows the top 10 countries of origin of visitors.

Country	Visits
UK	5404
Bulgaria	213
Romania	48
Norway	32
Cyprus	30
United States	26
Spain	26
France	25
Italy	23
Germany	22

Table 3: Top ten country origins of visitors

6. Future

Plans for the Library portion of future phases of PrepUp are ongoing. While we don't want to overwhelm prospective students with information, there are still ways in which we may be able to develop or extend the contribution we've made to the project already. For example, still up for discussion at present is whether we put the first floor section behind a very short simple password and expect users to collect the letters of the password by exploring the ground floor before ascending the stairs. This would increase the game element of the space at the risk of 'hiding' useful material. The point would be to allow them to investigate some of the basics about the Library first before going further afield into the information literacy tools. Alternative Reality Games have been described as "getting yourself hooked on intellectual crack cocaine" [15] and getting this level of engagement for library based training would be a worthwhile objective.

Another idea is for a 'cupboard under the stairs' in which we plan on presenting the core of a workshop that is run by the Library on the 'Dark side of the web' warning students about the potential pitfalls and problems of social networking spaces and their privacy issues. Initial ideas about the growing internationalization of Higher Education in the UK have already been turned into the small international section described in Section 4.

Other plans for the future include consideration of how much more we'd want to add to the space. At present it is only a miniature virtual world but obviously there is room for this to grow. It might be feasible, for example, to allow students to use an avatar to explore and to meet and chat with other students replicating the Library's social space provision. Jacobs [16] looks at the relationship between social networking and integration into university life, reminding us that "in the last five years modes of communication have changed beyond all recognition". We think this will continue. In addition, it would be useful to survey students in detail about their perception of the Library's contribution to the project specifically and how they would like to see the space develop. It would also be interesting to conduct longitudinal studies of students introduced to the University via PrepUP and look at their final results, usage of the Library, satisfaction levels and other quantitative and qualitative measurements and to compare this with students who weren't acculturated in this way. As the PrepUP project matures, this kind of research should become possible and invaluable.

P.D. James, the crime writer, said on opening the physical extension in 2007: "For me the library is at the heart of any institution of learning, and particularly a university. Here we have assembled the wisdom of the past, the achievements of the present and our aspirations for the future." [17]. We see no reason why virtual Library space shouldn't be at the heart of the virtual University.

Although the whole PrepUp project is still in its infancy, the Library is firmly committed to providing a presence which we believe will help students become familiar with both the building and our facilities as well as assisting them on their path to information literacy. If some of this acculturation can take place before students even arrive on campus it can surely only enhance their experience and stand them in good stead for their years at University.

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