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# Using Participatory Design to Improve the User Experience of an Educational Intranet: a Prototype Solution

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## Abstract

This project explores student opinions of the current design for the Teesside University School of Computing (SCM) Intranet. The purpose of this study was to discover the main frustrations and shortcomings of the current SCM intranet and to identify the most useful features. The methodology employed was analysis of the results of a series of focus groups and questionnaires gathering previously unknown insights of the student experience and through participatory design - directly involving student participants in the design process to improve the experience. Focus groups were organized to involve the participants in an affinity sorting exercise, a wireframing session, and a usability testing session where they were presented with an InVision prototype design which was created based on feedback. The outcome of the research is a medium-high fidelity prototype design to illustrate improvements to the usability and the user experience of the student intranet.

A university intranet should be an engaging tool to encourage collaboration and to enable ease of information retrieval. The results of this study demonstrate clearly the improvements required to the current design so that students can take full advantage of the features offered through the intranet site. This report presents the results of the UX evaluation and includes recommendations for improvements to enhance the user experience of the SCM intranet.

## Keywords

usability study, collaboration, prototype, user experience, participatory design, questionnaire, focus group, survey, design, intranet

## Introduction

This paper presents the analysis of a participatory design process used with a series of focus groups to gather detailed feedback on the SCM intranet, and participants of a wider student audience through the completion of an internet survey. The Appendix provides additional documentation comprising a collection of resources created as part of this exploratory process and provides previously unknown UX report data for the user needs and requirements for students using the SCM intranet. A usability evaluation was performed on the current intranet design which became the foundation of the design changes driven by student feedback. A medium-high fidelity prototype was then created, evaluated through a focus group and documented through a task based questionnaire. Finally, recommendations for changes and enhancements required to improve the user experience and tips for usability practitioners designing intranets are presented.

## Literature Review

The purpose of this literature review is to explore previous research into the areas of UX, website design, participatory design and intranet design.

### A Background into User Experience

According to a survey performed across a pool of 275 researchers and practitioners from academia and industry, User Experience (UX) as a concept is a combination of the Human Computer Interaction (HCI) and User Centric Design (UCD) practices used to research the potential benefits that users may derive from a product (Law et al 2009). Using UCD to satisfy user needs in order to produce usable products is one aspect of UX (Detweiler 2007). Even though most of the interaction which contributes to user experience is via the product interface it is important to note that user experience involves more than just the visual aspects of a product, and needs to encompass the user journey and the aim of what the product is trying to deliver (Nissinen 2015). The discipline of UX design is concerned with all the elements that combine to make the interface as well as how these elements are coordinated to "allow for the best possible interaction by users" (Walton, 2015).

The definition of User Experience is explained by the Nielsen Norman Group as "…all aspects of the end-user's interaction with the company, its services, and its products." (Nielsen and Norman, 'The Definition of User Experience') and the User Experience Professionals Association (UXPA) expands on this definition by adding "User Experience works to coordinate these elements to allow for the best possible interaction by users" (UXPA, 'Definitions of User Experience'). It is important to note that there is the common misconception that a good user experience is one in which the users are happy, however this perception is not true. It is important to understand that the goal of good UX design is to create an experience that enables the user to be the most effective at accomplishing their goal (Marsh 2016).

### Intranets and portals defined

Intranets are internally used websites used by organisations customised to display relevant information (van Schaik and Ling 2005). Intranet Portals are an elaboration on a basic intranet, serving as "the hub of the corporate wheel, providing spokes of information and applications that serve diverse and increasingly dispersed workforces." (Pernice and Caya, 2014). An intranet portal serves as the heart of the information highway for an enterprise organisation and can deliver both internal content and links to relevant external content.

An important feature of an intranet design is that it should be a forum for sharing knowledge and Stocker and Muller (2013) highlight that an intranet should have discussion forums and bulletin boards as internal sites have increased usage statistics where the frequency of use was correlated to the activity of the users engaging with the site to provide content. An intranet should be designed in such a way that regardless of a user's proficiency with using a computer or a website the site should be easy and efficient to use for all (Australian Government Information Management Office, 2004). Nielsen (2007) states that even though web usability

guidelines apply to intranets the biggest difference is that the usage of an intranet is aimed at internal audiences, not customers and this calls for specialised consideration during the design process.

**Challenges of Intranet Implementation**

Intranet Portals can provide a centralised source of information however they are only effective when they support the user needs in an effective fashion (Resnick et al 2004). One of the biggest mistakes made when intranets are designed is that the design is focused around what the organisation wants the audience to know, rather than what the audience will find useful (Kim, 2003).

Neill and Richard (2012) states that intranet portals are distribution devices to display tailored information internally, however the user acceptance can be an issue which leads to the demise of the intranet's purpose.

Unfortunately, one of the biggest negatives of having an intranet in an educational institution is their usability. A common trend with intranet design is that they are designed badly (Nielsen 1999) and productivity can be improved by improving the usability of the intranet design (Nielsen 2001). Kakumanu and Mezzacca (2005) noted that inconsistency of design and lack of extensive research has reduced the acceptance and use of intranet portals.

**Good practice for UX and design**

A user experience is subjective to the individual user, rather than trying to design for an experience it is better to take many different aspects of the journey into account to provide a positive user experience (Hassenxahl and Tractinsky 2006).

Good website design is often simple and consistent layout (Misanchuk et al 2000), this advice is essentially the foundation needed to create a positive user experience, however using scenarios to guide user testing (Obendorf and Finck 2008) and to create interactive prototypes with users performing tasks is recommended to improve the User Experience within iterative design process such as Agile web development (Williams and Ferguson 2007), (Federoff 2008). Visual design is not the primary focus in UX designer however, and to improve the user experience the user journey needs evaluating to improve the emotional response that a user has during the task of trying to achieve a particular goal using the design (Platt, 2016), (Milanova et al, 2012), (Ho 2016). According to Nielsen (1999) special-purpose systems must have a straightforward navigation structure, less cluttered screen layout and a perceived ease of use (Costa 2008).

Good intranet design requires an understanding of the context of use and the user and organisational requirements (Dick 2003) without these considerations the intranet portal will not be as effective and the targeted audience will not choose the intranet site over alternative methods to accomplish the task they are pursuing. This can be challenging in cases where the needs of the user are not necessarily the needs of the organisation, and a compromise may be required to ensure both parties benefit from the design (Resnick 2004).

The difficulty in designing an intranet system is to match the navigation needs of the end users and if the information displayed does not correlate with an intuitive navigation then this leads to an abandonment of using the system [Scharff and Kortum, 2009]. Often issues arise with intranet design at the point of allowing the users to implement the solution, despite attempts to design with the user in mind which is why it is of the utmost importance to involve the user at the earliest possible stage such as interactive prototyping in order to observe and document the actual behaviour which will occur on the system in a real world application (GOV.UK Service Manual, 2016). In the 2007 Intranet Design Annual (Nielsen 2007) and future editions, the intranets with the best designs focused on making their site more relevant to the user's needs and all made extensive use of labelling and categorizing the information. This theme has continued into the present day, with Pernice (2016) listing in the 'Seven Deadly Sins' of intranet design that intranets should not have portal pages which only link to external content, and that it is important not to have global navigation which disappears, or to have content sectioned into silos through additional login screens. Such elements can frustrate the user, and ultimately

dissuade usage of the intranet, rather than create a positive experience that would foster repeated usage.

In a report by Nielsen which was compiled through user testing on a variety of intranets (Nielsen 2012) it was discovered that it is important when designing an intranet site to have consistent appearance and navigation across the whole site, however it is also important to have a task-based information architecture in order to perform tasks which would relate to the real life model. This encourages the user to engage with the intranet site in a manner that mimics how they would accomplish the task offline, and enables the retrieval of information to be effortless so that the sole focus of the user's engagement is the information they wish to retrieve, and not the method in which it is retrieved. Essentially the aim for a good user experience is to create a design that achieves the task at hand so well that the user does not notice the process;

"Good design, when it is done well, becomes invisible. It's only when it's done poorly that we notice it." (Spool, 2008).

**Participatory Design**

Participatory Design is a form of research which directly involves the end user in the design process. It draws on various research methods such as interviews, observations, analysis of artefact, to iteratively create a design involving the end user and created with the end user (Spinuzzi 2005). Participatory Design recommends that direct contact with the users is better than working through human intermediaries, and that the design team and users should work together and include the use of simulations and prototypes in order to be able to record the reactions and observations in regard to the proposed design ideas (Kujala 2003). Scariot et al (2012) describes three levels of user involvement in the design process;

- Informative involvement: techniques are used to collect information from the user through methods such as focus groups, interviews, observations or questionnaires.
- Consultative involvement: iterative designs are made and presented to the users to evaluate and the process continues through usability testing.
- Participatory involvement: the user is more influential in the decision making of the designs, and through techniques such as card sorting, workshops etc. and is more involved in the design process.

This study will attempt to combine these techniques to fully engage the users in the design process and to try and establish a greater understanding of what the user requirements are for the university intranet. It is important to note that Scariot et al (2012) also describes the concerns that can arise when a user centric approach is driven by a project, where the need to take into consideration all of the complaints and criticisms of the user can detrimentally affect a project by creating unnecessarily complex results in order to meet user needs. This sentiment is also echoed in the U.S Department of Health and Human Services' Research-Based Web Design & Usability Guidelines available on the Usability.gov website where it states that "…Users are most valuable in helping designers know what a system should do, but not in helping designers determine how best to have the system do it." These concerns will be taken into consideration during the design process and the focus on the redesign will primarily be around the main home screen on the intranet, and how the top three main concerns of the users can be addressed as part of the focus of this study.

**Data collection methods**

Improving the intranet design will not determine whether the user experience has improved unless relevant data is gathered to establish if design changes result in improved usability (van Schaik and Ling 2005). Psychometric evaluations and questionnaires are commonly used to measure the quality of interaction perceived by users (Berkman and Karahoca, 2016), (Lewis, 2002).

The suggestion to perform a case study analysing the emotional aspects of the user experience by Nissinen (2015) will be taken into consideration during this study. A questionnaire documenting the participant's opinions of the revised designs versus the original design will be created and will help analyse not only the visual and aesthetic improvements of the intranet design, but also the emotional response to using it using the Technology Acceptance Model (TAM) (Berkman and Karahoca, 2016).

The data gathered from this study will be compiled using the TAM as this is considered a robust model for predicting user acceptance (Wu and Wang, 2005), (Alkis et al, 2014) and this can be studied through structured questions asking the user's what their perceived emotional responses to the designs are during usability testing in regards to the usefulness and the ease of use during their experience on the intranet site.

It is apparent through analysing previous research in this area that UX only rarely enters the relevant academic journals and the reasoning behind this is down to the lack of empirical research (Hassenxahl and Tractinsky, 2006). Van Schaik and Ling (2005) also state that there is currently a lack of measures for evaluating web sites and this is a highlighted in respect of educational intranets. This study will provide further research and guidelines in the field of UX improvements in the area of educational intranets. It is also clear that there is a lack of measures in place to evaluate websites from a psychometric perspective and this is more of an issue in particular for educational intranets as there are very few studies performed on such sites (Hasan 2014).

## Study Design and Procedure

For this study there were four methods used to create an iterative design approach as follows;

1. **Online Survey.** Using an online survey creation tool on www.typeform.com a survey was created to gather current student opinions and feelings in regard to the current intranet site design. This survey was circulated through the current intranet site to gather data from all students currently enrolled on the School of Computing courses if they opted in to complete the survey.
2. **Focus Group on Current SCM Intranet Design.** Using a voluntary group of students a sticky note exercise using the KJ-Method (also sometimes referred to as affinity diagramming) was used to gather insights as to the current student opinions in regard to the positives and negatives of the intranet implementation. This exercise also identified which features the students use on the current intranet design, and which features they would like to have added in the future.
3. **Focus Group Wireframing Exercise.** Using a voluntary group of students a group wireframing exercise was performed to gather insights as to what students desired from the design layout of a proposed new design for the intranet.
4. **Focus Group Usability Testing Medium-High Fidelity Prototype.** Using a voluntary group of students a medium-high fidelity prototype design concept for an improved intranet site created on prototyping software at www.invisionapp.com was provided for usability testing and to gather student opinions on the suggested improvements. Students were given a task based exercise to test out how easily the requested information in the tasks could be discovered using the new design implementation.

### *Online Survey*

An online survey was constructed in order to gather the insights as to the current student opinion on the intranet design implemented within the School of Computing (Appendix 1a). The questions were a combination of defined answer choices and free text in order to record statistics as well as positive and negative opinions on the current student experience. Figure 1 illustrates the Technology Acceptance Model which was used in the design of the survey in order to gauge student reactions to how useful they perceived the website compared to how easy it was to perform tasks using it (Sauro 2011).

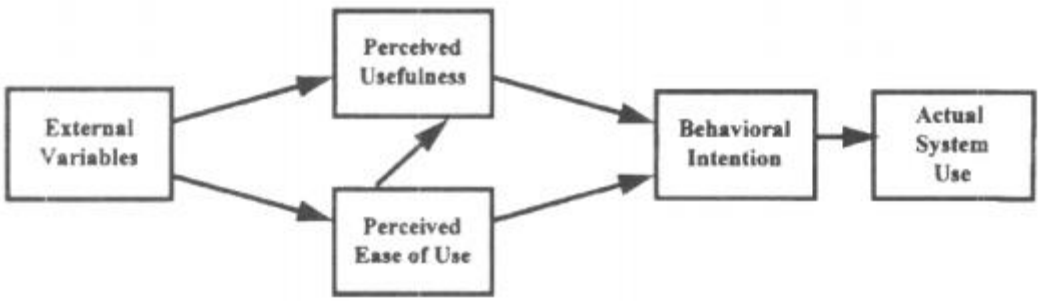


**Figure 1.** Technology Acceptance Model (Venkatesh & Davis, 1996).

***Participants***

The following is a demographic breakdown of the students who participated in the survey:

- Total participants: 35 (0% International students, 14% students with disabilities, 37% mature students).
- 71% of participants were studying at an undergraduate level and 29% were postgraduate level.
- 89% of participants were studying on a full time basis, 11% were studying part time.
- 43% of participants were in their first year of study, while 14% were in their second year of study and 43% were in their third or further year of study.
- 54% of participants attend campus daily, with 46% attending campus at least once a week.

Participants were asked to indicate which devices they use to access the SCM intranet. This information would be taken into consideration to drive what kind of new design would be implemented and whether responsive technologies should be considered during the process.

**Table 1**. Devices used to access the SCM intranet

| **Device Used** | **Percentage of Participants Used By** |
|---|---|
| Windows desktop or laptop | 89% |
| Android phone | 60% |
| Apple iPhone | 26% |
| Apple Mac desktop or laptop | 23% |
| iPad tablet | 20% |
| Android tablet | 17% |
| Windows phone | 6% |
| Windows tablet | 0% |

The survey asked participants to select all options from a list of features available on the current intranet design that they actively use – these can be seen in Figure 2. The most popular features of the intranet were the timetable, the ability to access email and the e-learning site Blackboard (even though these link to external pages), the view module course information page, and the find a free lab tool.

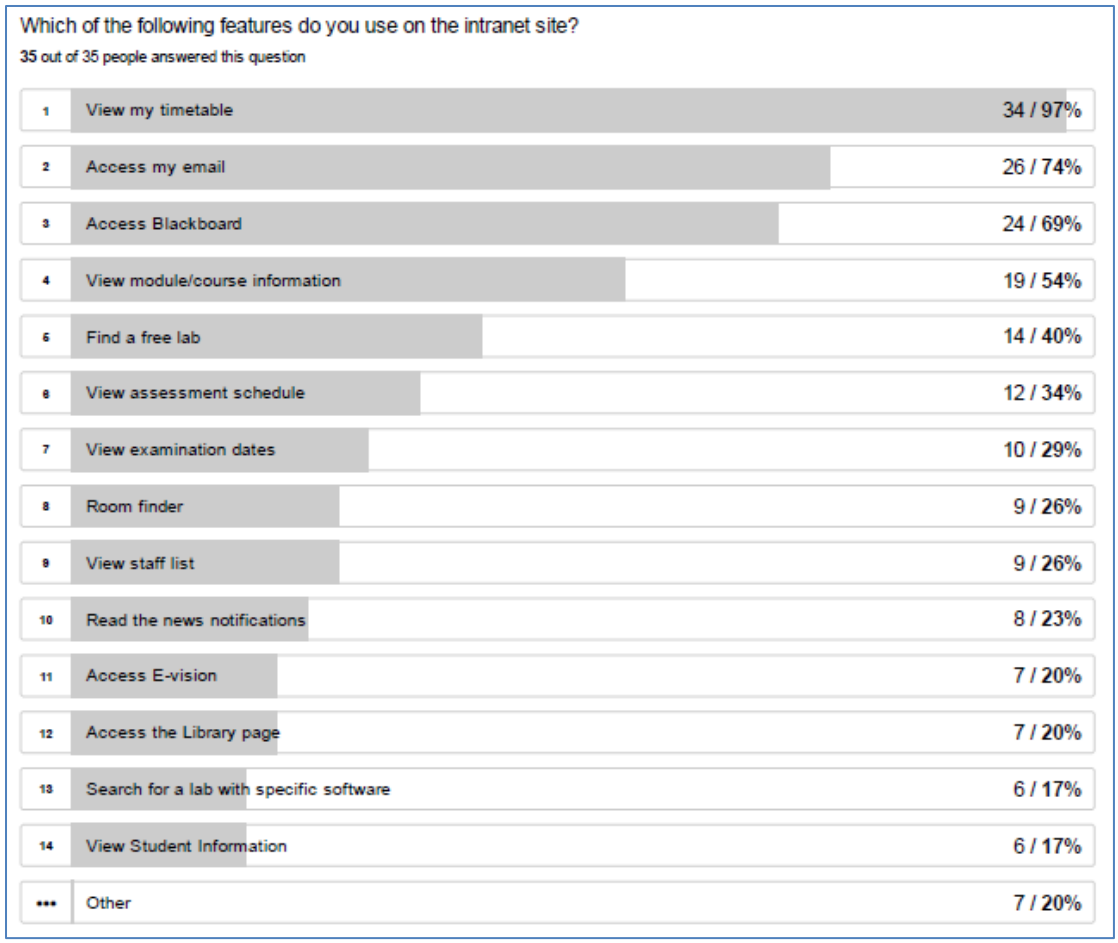


**Figure 2.** Features used by participants on the current intranet design.

It is interesting to note that these top five features also ranked in the top five answers in the subsequent question when the participants were asked which of the features available were the most *useful* to use. When asked how easy it was to find information on the intranet the responses indicated that there is much room for improvement as 54% of participants ranked the ease of finding information as only 3 – 'It's OK', with 12% believing it was difficult or very difficult to find information. This contrasts with the responses from the question asking it the intranet was useful, as 65% of participants agreed that the intranet was useful or very useful.

**Table 2**. How easy is it to find information on the intranet?

| **Response** | **Percentage of Participants** |
|---|---|
| 5 - Very easy | 11% |
| 4 - Easy | 23% |
| 3 – It's OK | 54% |
| 2 - Difficult | 9% |
| 1 – Very Difficult | 3% |

**Table 3**. Student knowledge on implemented features

| Question | Response A | Response B |
|---|---|---|
| **Did you know that you can see which class is in progress and how many computers are being used in a lab by hovering over the 'X' mark?** | No | Yes |
| Percentage of Response: | **54%** | 46% |
| | | |
| **Did you know that clicking on a room number provides you with a list of software available in that lab?** | No | Yes |
| Percentage of Response: | **54%** | 46% |
| | | |
| **Did you know that a room marked with 'X' may have a few free computers available?** | No | Yes |
| Percentage of Response: | **63%** | 37% |

Overall the responses of the survey indicated that the students find the intranet useful, however it is difficult to find certain features or to retrieve information easily and the main feature that the students would like to see implemented on the intranet is a list of upcoming ICA deadlines for courses (86%). Table 3 illustrates some features available in the lab finder area of the intranet which were unknown to students using this section. There were additional key important areas of the intranet which students were not aware of, such as the ability to access information on student placements (69%) or how to book equipment (40%).

The complete report responses including the free text comments can be found in Appendix 1b as a spreadsheet.

### *Focus Group on Current SCM Intranet Design*

In order to conduct effective UX workshop sessions the six steps laid out by Kaplan (2016) were followed. The first focus group session involved performing a sticky note exercise with the KJ-Method (also referred to as affinity diagramming) to understand the perceived positive and negative emotions associated with the current intranet design and to also understand what aspects of the intranet site were deemed useful and whether or not there were opportunities to design missing functionality. The limitations scoped out to the participants were that they could only provide a single response on each sticky note, and that they were required to use one colour for positive associations and another for negative associations.

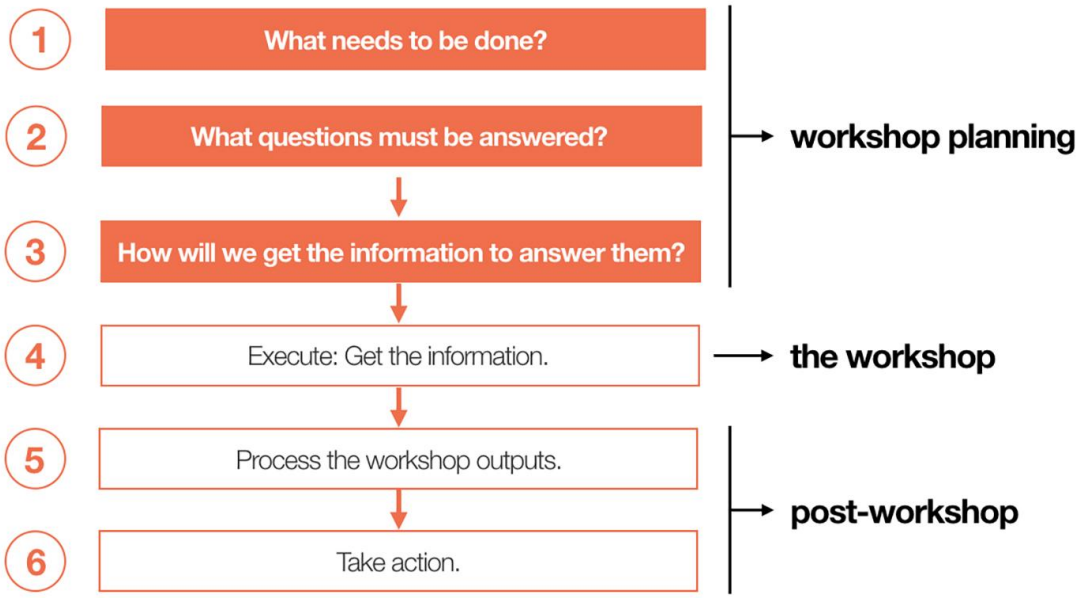


**Figure 3.** The six steps for planning and conducting an effective UX workshop (Kaplan 2016).

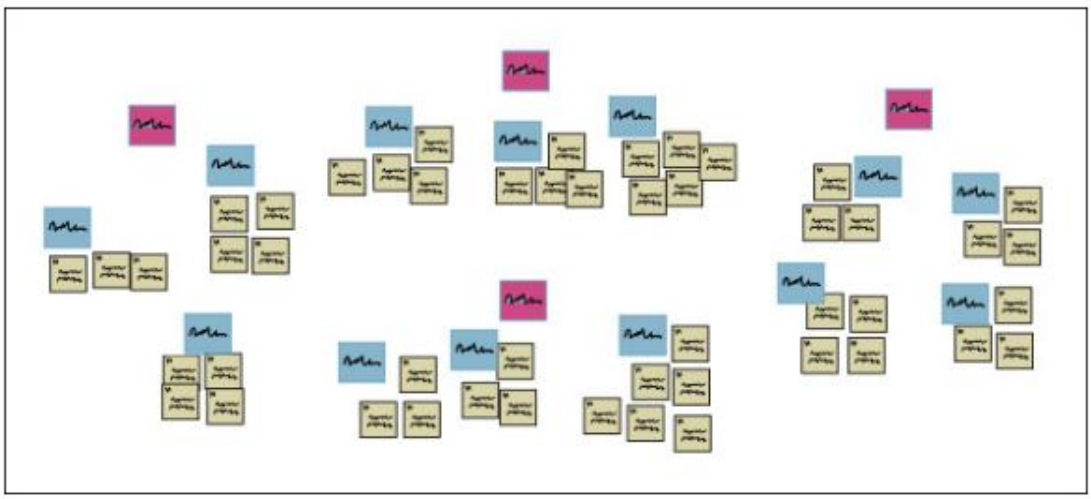

**Figure 4.** Affinity Diagram Technique or KJ Method (Six Sigma Study Guide 2013).

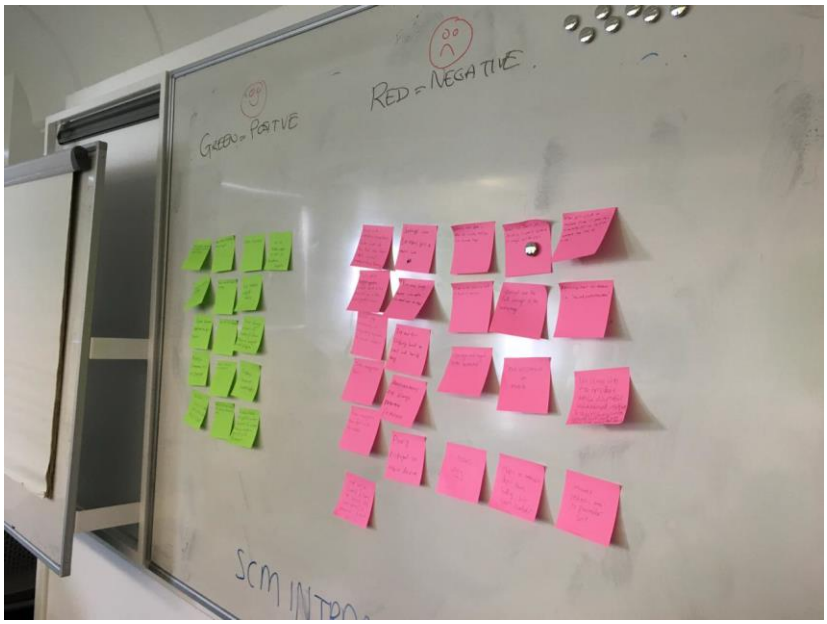


**Figure 5.** Sticky Note opinions before the clustering exercise.


**Figure 6.** Sticky Note clustered responses.

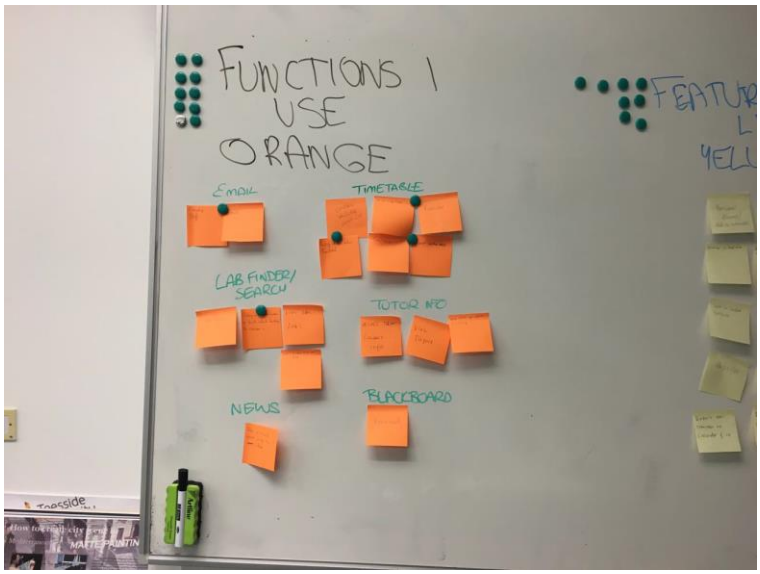


**Figure 7.** Functions used by students on current implementation.

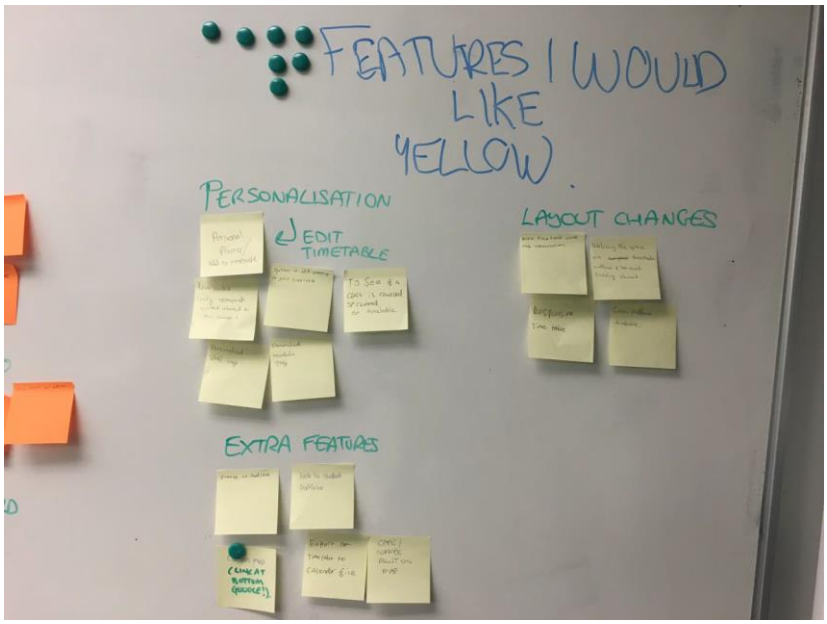


**Figure 8.** Features which students would like to have clustered by areas.

The overall consensus of the group was that the primary feature most used on the intranet site is the timetable and even though the students use this feature the most they would still like to see improvements to enable the experience to be better on a mobile device. Features such as the lab finder and staff information pages were also very important features on the intranet site. In regards to negative user experience an important factor is that personalization needs introducing to the site to reduce the amount of irrelevant content appearing and to enable the students to see at a glance content which is important to them personally. The navigation bars also need reconsidering as duplicated content is proving to be confusing to the students.

The full Focus Group Report can be found in Appendix 2.

### *Focus Group Wireframing Exercise*

The second focus group used participatory design through wireframe sketching to develop concept design ideas for the new intranet design. In the first half of the session participants were asked to individually sketch down their ideas, and then in the second half of the session participants were put into pairs and instructed to combine the positives of their individual ideas to create an improved collaborative wireframe.

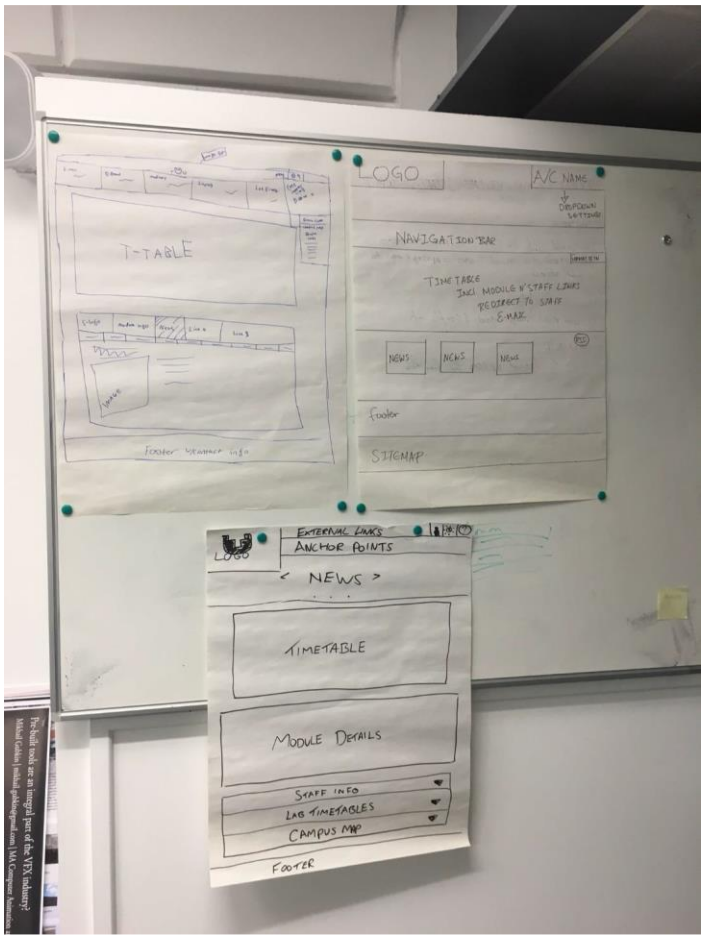


**Figure 9.** Final three wireframe concepts as designed by students.

The overall consensus of the group was that the timetable needed relocating to the topmost position on the page and that the navigation bar needed to be simplified so it was easier to understand how to find information.

The full Focus Group Report can be found in Appendix 3.

### *Focus Group Usability Testing Medium-High Fidelity Prototype*

The process used to test the concept design with the students was using a medium-high fidelity prototype hosted on InVision through usability testing in a group. This allowed all of the students to participate and to interact with the design concept as if it was presented in a webpage format without the need to write the code to create the hyperlinked pages. This also meant that the students were briefed on the limitations of using this prototype format compared with using an actual HTML page which would limit certain features of the prototype.

Students were asked to perform tasks following a questionnaire, and to also give their opinion on the new design concept.

After evaluating the responses gathered in the questionnaire the general consensus was that:

- Students preferred the new design over the current design.
- The simpler layout was appealing and they liked the use of icons as part of the navigational structure.
- Navigation was made simpler to use and easy to understand.
- Having personalized information first with the ability to search for additional information secondary was a better implementation.
- Students preferred having an enhanced timetable which provided further information when clicked on.

The full Focus Group Report, questionnaire used for usability testing and link to the prototype can be found in Appendix 4a and 4b.

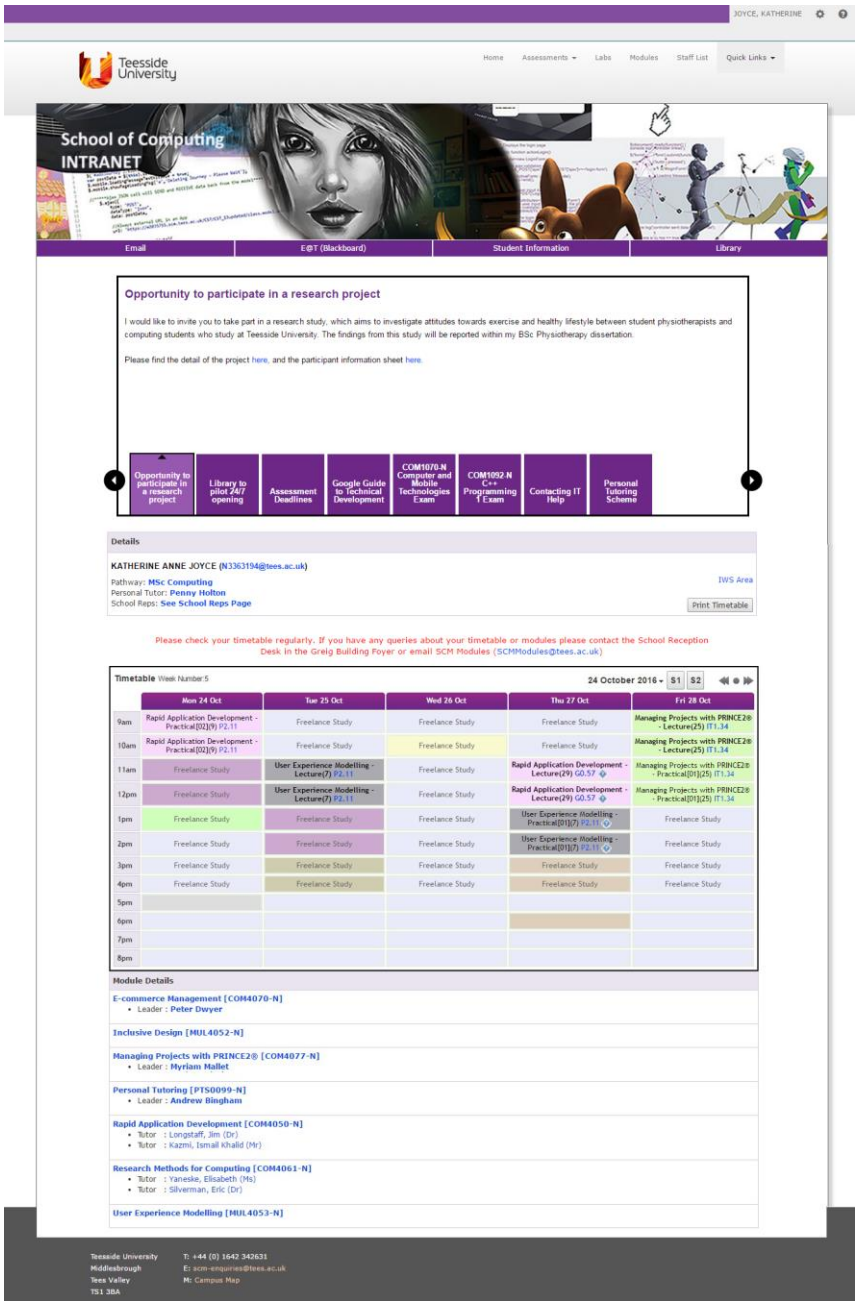


**Figure 10.** Original SCM Intranet Design.

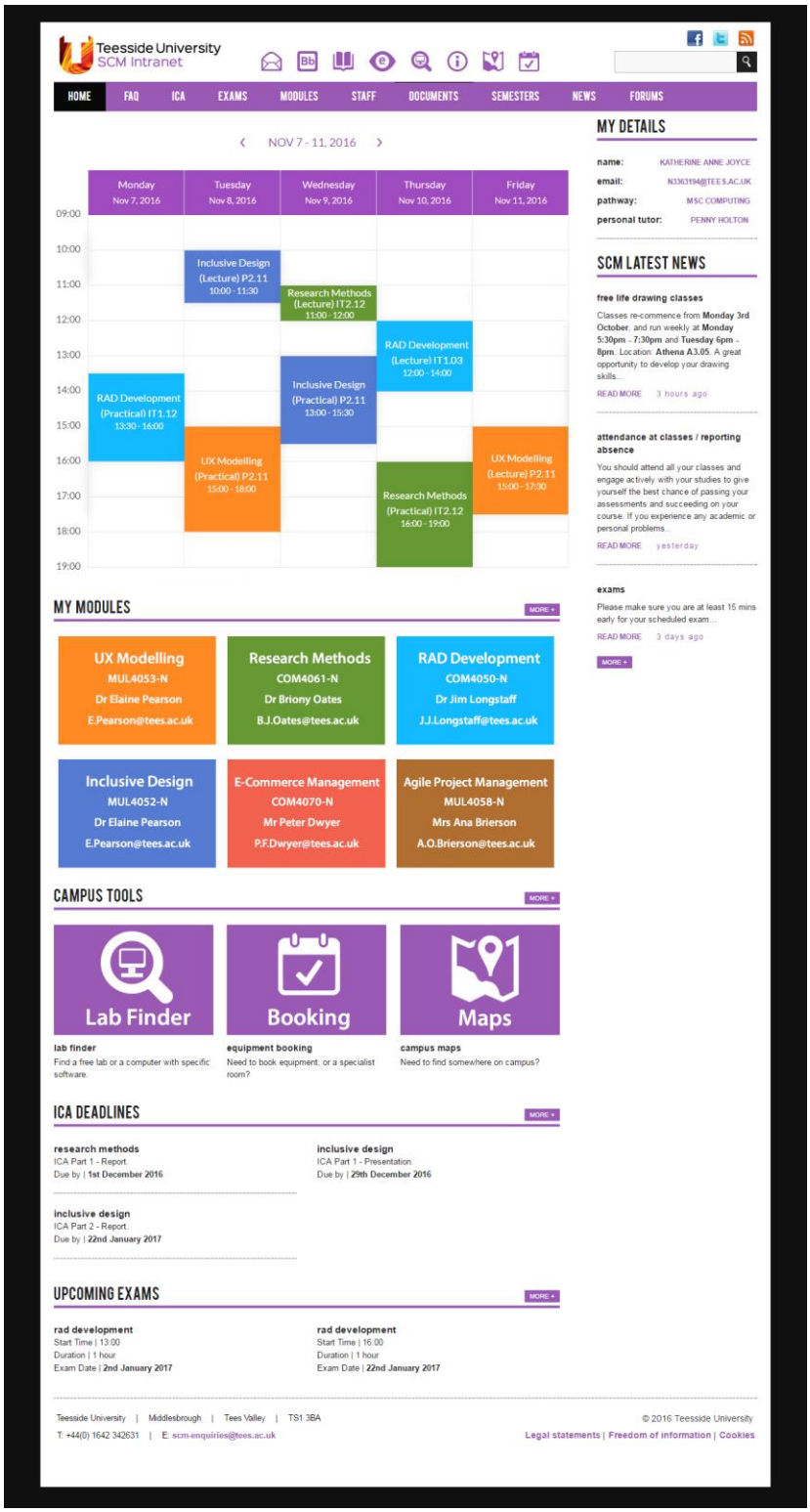


**Figure 11.** Prototype of redesigned SCM Intranet.

## Results

The data collected from the online survey corroborated the results gathered from the students in the focus group sessions which indicated that participants of both these methods of evaluation had strong and consistent opinions of what features were useful to use on the current intranet site, and which elements gave frustration.

**Table 4**. Student ranking on which features are actually used (Online Survey results)

| Feature on current intranet | Percentage of Participants Use |
|---|---|
| View my timetable | 97% |
| Access my email | 74% |
| Access Blackboard | 69% |
| View module/course information | 54% |
| Find a free lab | 40% |
| View assessment schedule | 34% |
| View examination dates | 29% |
| Room finder | 26% |
| View staff list | 26% |
| Read the news notifications | 23% |
| Access E-vision | 20% |
| Access the Library page | 20% |
| Search for a lab with specific software | 17% |
| View Student Information | 17% |
| Other | 20% |

**Table 5**. Student opinions on which features are frustrating (Online Survey results)

| Area of frustration | Number of students in agreement |
|---|---|
| Timetable implementation | 17% |
| Difficult to view on mobile device | 20% |
| News implementation | 17% |
| General layout or design | 37% |
| No personalization | 9% |

A spreadsheet listing all collected data can be found in Appendix 1b.


**Figure 12.** Focus Group Session One – positive experience features

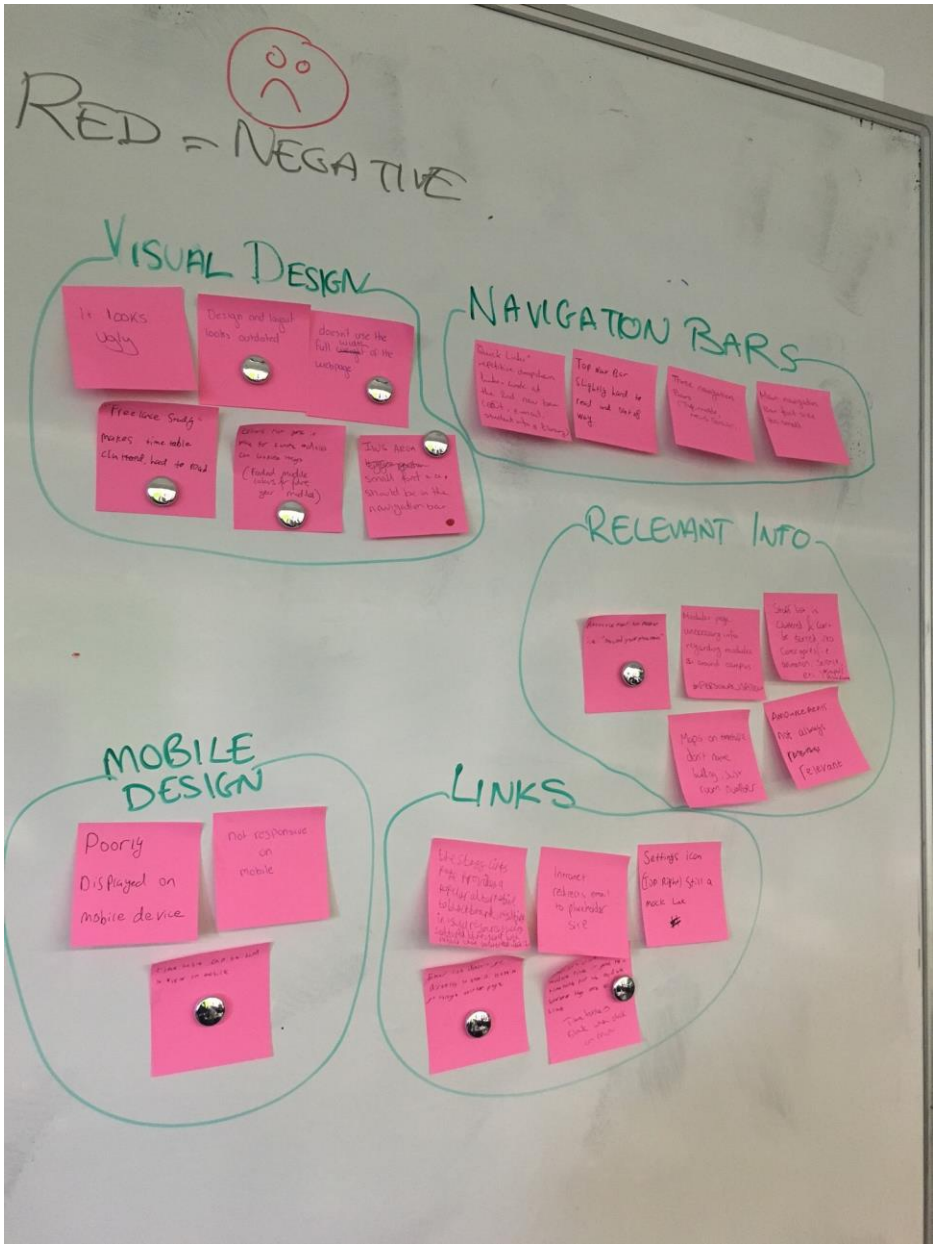


**Figure 13.** Focus Group Session One – negative experience features

The outcomes pointed towards the importance of a mobile responsive design, so when researching alternative options for the timetable implementation the Tiva Timetable plugin was considered and was used in the design.

**Note : Tiva Timetable implementation**
The InVision prototype of the design proposed uses the visual design of the Tiva Timetable plugin however it has no functionality implemented currently. Please see Appendix 5 to view a HTML prototype site demonstrating the timetable plugin features.

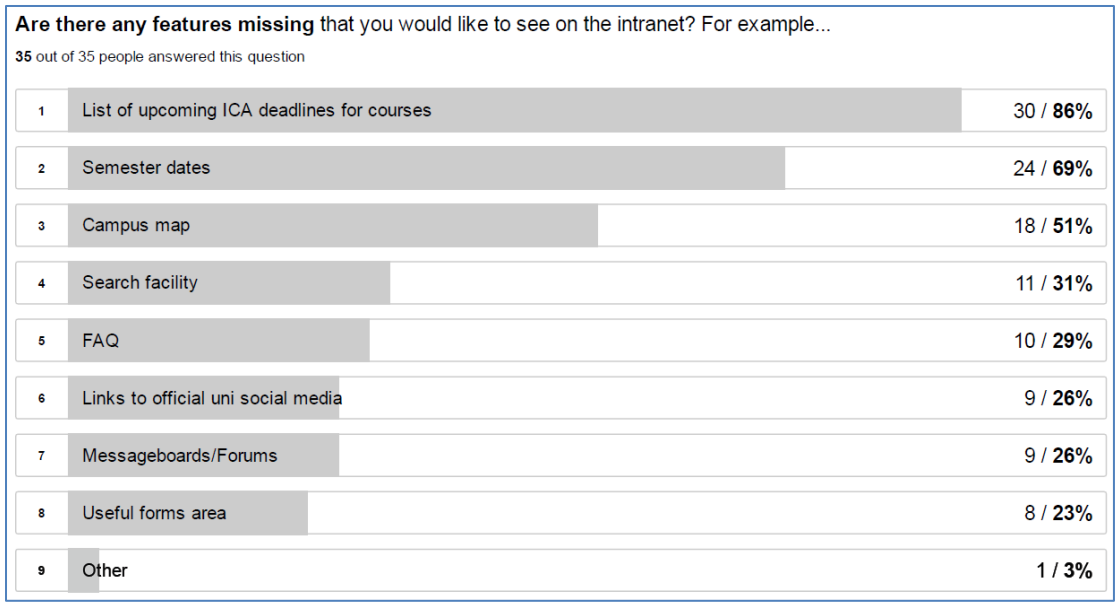


**Figure 14.** Student responses to the online survey for new feature suggestions

### *InVision Design Prototype*

The improved design was based around a combination of student feedback and through researching existing university intranet designs from other universities and organizations to compare layout concepts. After analyzing the feedback from the participants four personas were created to use in the design process (Appendix 7). The use of personas is a recommended UX technique to always keep the user as the focus of the design and to force the consideration of the target audience. There are problems with using personas however, such as some designers can rely too much on the 'imaginary person' rather than also going out and speaking to the user who will be using the product (Mathis, 2016). To prevent this from happening during the design process the prototype solution was usability tested by the same participants who had given initial design feedback in order to keep them part of the entire process beginning to end.

### *Navigational Redesign*

One of the main areas of frustration was the navigational design of the current intranet site. There were four layers of navigation implemented (Figure 15) which caused the students confusion as it was not clear which of the navigational options should be used as the primary source of finding information and further pages. These were as follows:

- **Layer 1** *(circled in red)* – Navigation copied over from other SharePoint implementations elsewhere on the intranet including dummy links that did not actually direct anywhere
- **Layers 2 and 3** *(circled in green and orange)* – Navigation which had nested submenus and a 'Quick Links' section which duplicated links in other menus
- **Layer 4** *(circled in pink)* – Navigation which makes the most sense, however some students were not aware these options were clickable hyperlinks as they did not look like buttons as they blended in with the graphic banner

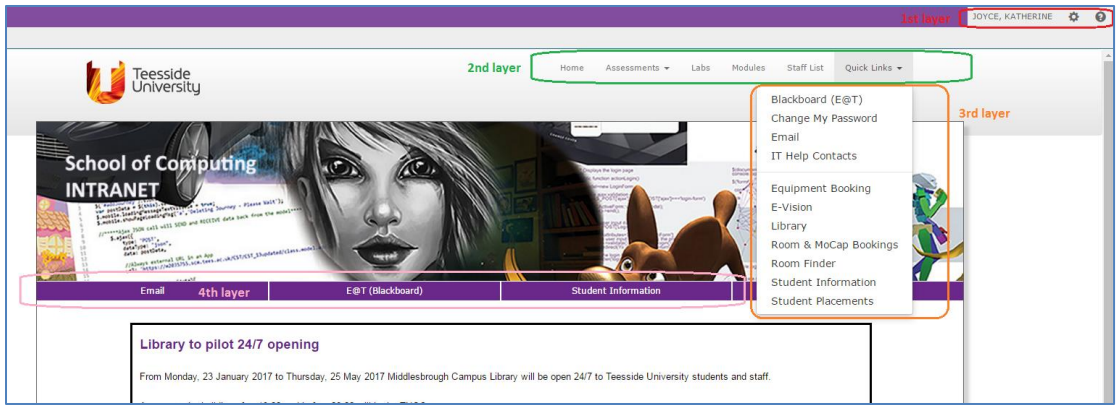


**Figure 15.** SCM intranet design with four layers of navigation

A simpler navigational layout was created to reduce the layers of content available to the student. A main purple navigation bar which was shallow in design and did not have any nested menus was created to prevent information getting hidden beneath submenus. The consideration between shallow or deep menus was made so that that the user would be able to get to their desired location in fewer clicks than using a nested menu (Mathis, 2016).

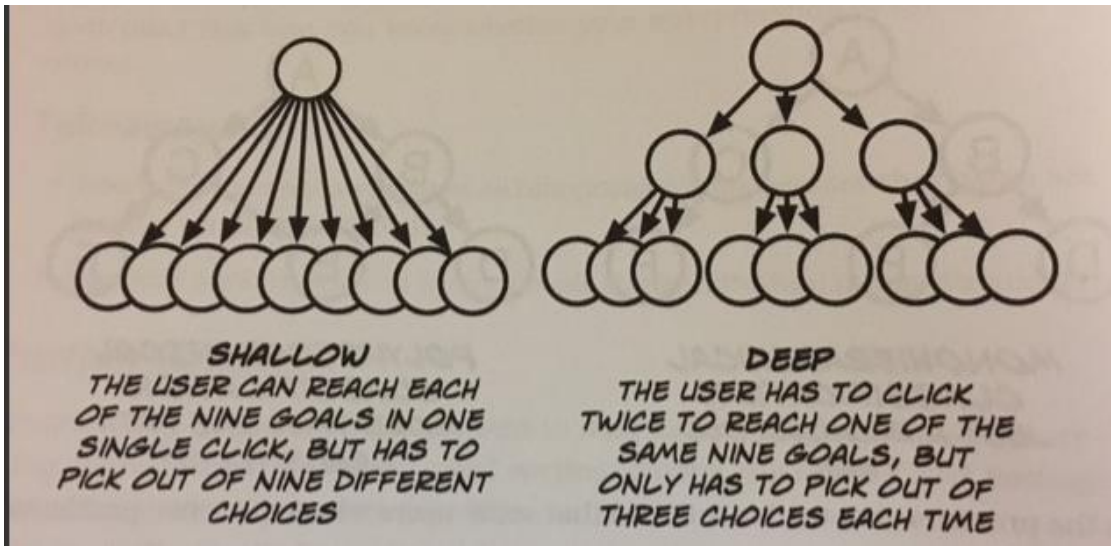


**Figure 16.** Shallow vs deep navigational hierarchies - *Designed for Use* (Mathis, 2016)

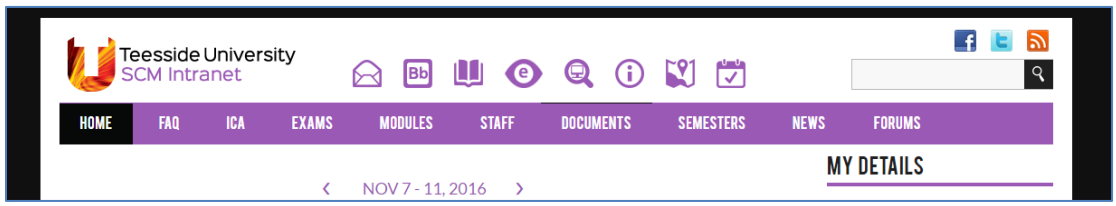


**Figure 17.** New intranet design with two layers of navigation

A visual submenu was also created which hosted the most frequently used external links (such as email and Blackboard) and popular tools as gauged by the focus group responses.

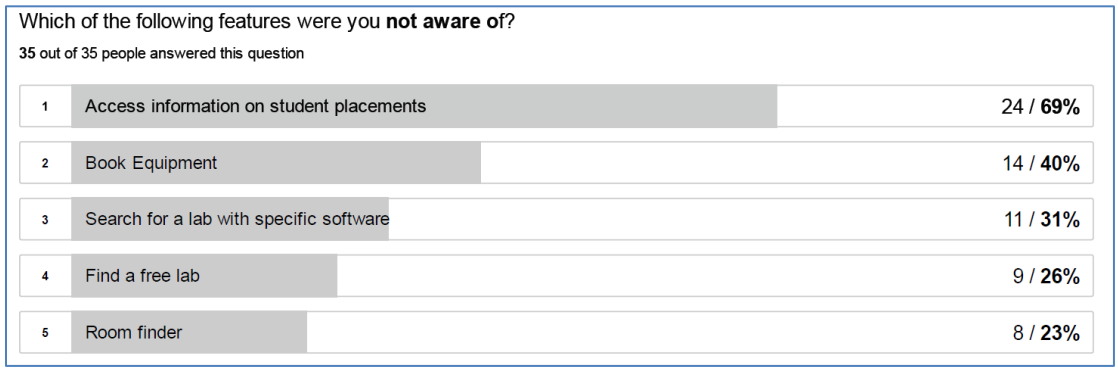


**Figure 18.** Feature responses to online survey

The student feedback indicated that some features were not easily located within the current intranet design, and so many students did not know about the ability to access information on student placements, how to book equipment, or even search for a free lab. The new intranet design took these considerations into account and it was decided that these features would be relocated to a more primary position on the page for students to find.

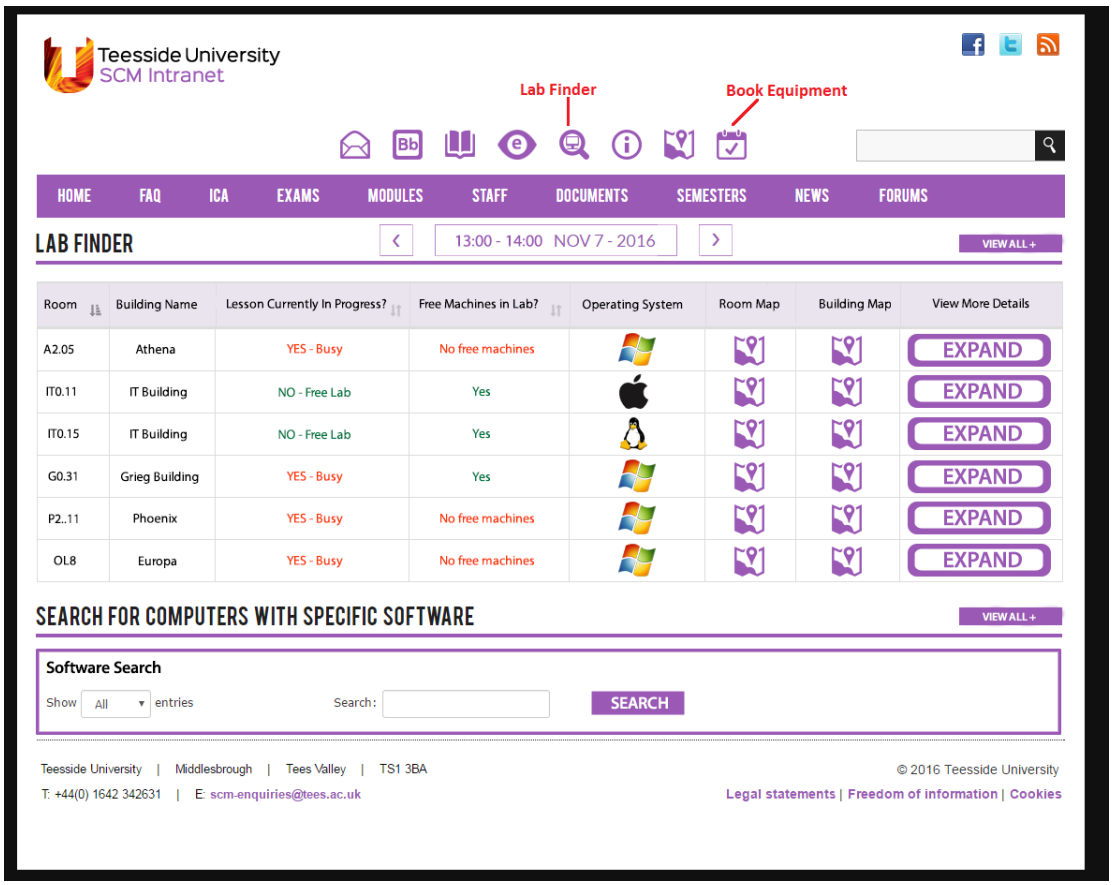


**Figure 19.** Lab finder page showing ability to search for specialist software and find free labs

***New Features Implemented***

From the student responses a set of new features were implemented into the new design prototype. The reasoning behind this was to provide a more useful intranet experience and to provide an easy to use site.

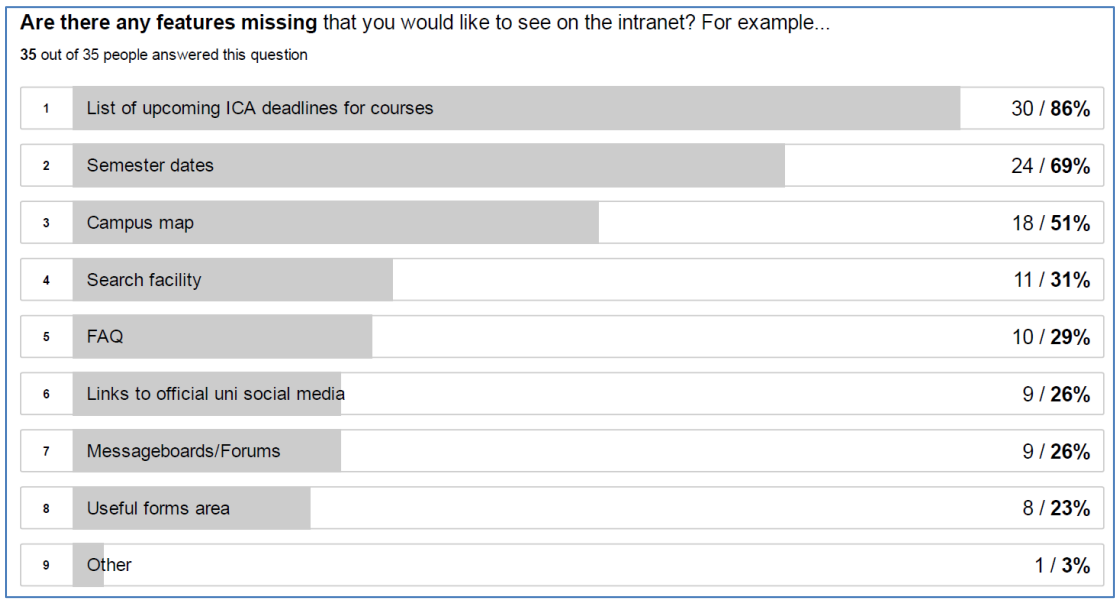


**Figure 20.** Features missing from the current intranet implementation

In an online article by Nielsen (2013) he states that "Even a few active contributors can add substantial value to the entire organization…" and that "user-generated intranet content can help address many questions…" the article goes on to add that "search must be integrated". It was for these reasons that it was deemed important to create the ability to have students interact with each other socially and to create a student forum section.

Figure 21 illustrates the following features which were implemented into the design;

- ICA deadlines (1)
- Semester dates (2)
- Search facility (3)
- FAQ section (4)
- Links to official social media (5)
- Forum for students to interact (6)
- Useful forms area – titled 'Documents' (7)

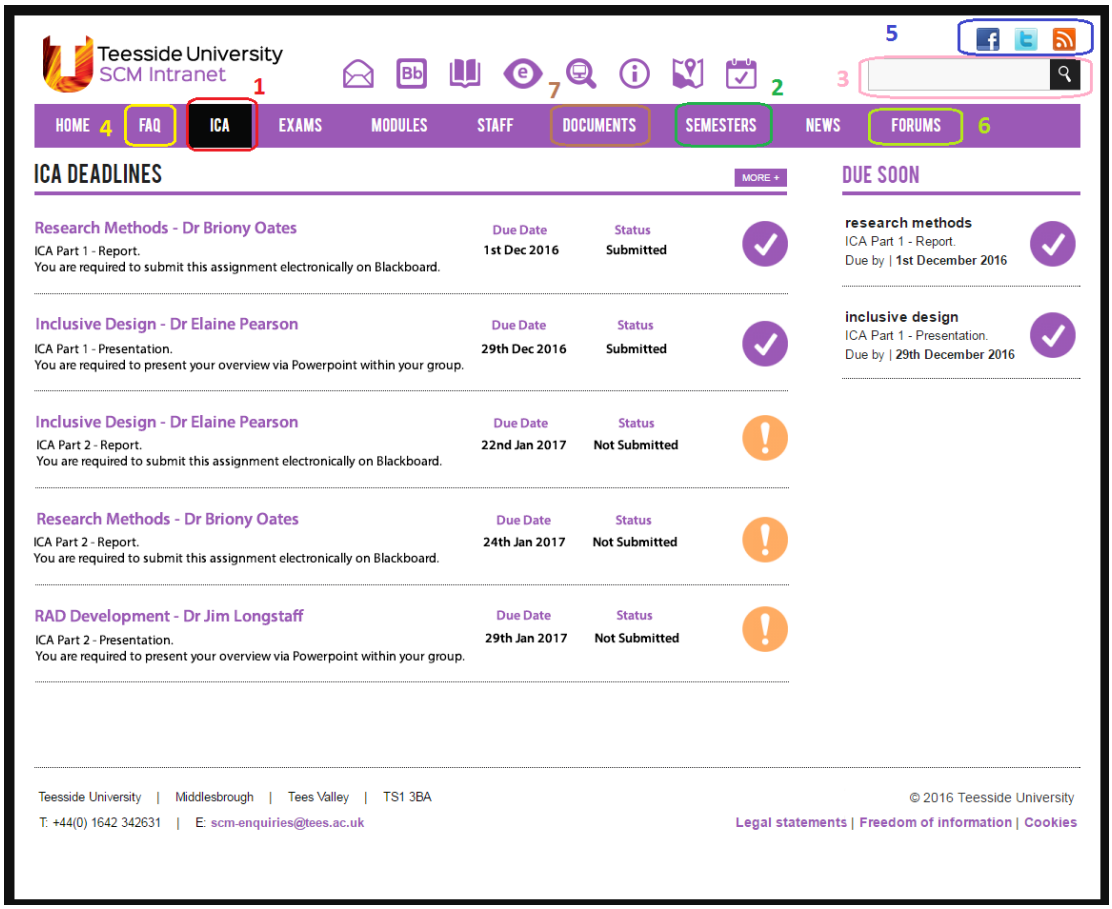


**Figure 21.** ICA deadlines page illustrating added features to the intranet design

***Student Responses to Usability Testing***

The students performed two tasks as part of Focus Group Session Three – the first being a general set of questions documenting their opinions on what they think of the new design, and the second being a tasked based exploration session where they were asked to perform a range of tasks using the new design prototype to see what experience using the new design gave them compared to the current intranet implementation.

Positive comments in regards to the new design;

- Students were happy about using the design and that the timetable would be responsive on a mobile device
- Students found it easy to find information as defined in the task based exercise

In regards to negative comments to the improved design the students stated the following;

- Some graphic icons in the navigation bar do not clearly represent what they are for
- The timetable implementation should have the ability to jump between semesters

The general consensus was that students preferred the proposed design over the current implementation and that they could intuitively find information easily after spending only 15 minutes initially becoming familiar with the new layout.

A report on the full student feedback can be found in Appendix 4b.

**Table 6**. Student responses to prototype solution

| Question | Response A | Response B | Response C |
|---|---|---|---|
| **What do you think of the navigational layout of this design?** | It is easy to use | Using it is the same as navigating the old intranet design (not better or worse) | It is difficult to use |
| Percentage of Response: | **100%** | 0% | 0% |
| | | | |
| **How does this design make you feel about using the site?** | It makes me feel anxious – it is difficult to find things | It is clear to find things and I am happy about using it | - |
| Percentage of Response: | **100%** | 0% | - |
| | | | |
| **Do you think this design is more up to date that the previous design?** | Yes | No | - |
| Percentage of Response: | **100%** | 0% | - |
| | | | |
| **Do you prefer this design of the previous design?** | This new design | The previous design | - |
| Percentage of Response: | **100%** | 0% | - |
| | | | |
| **Do you think anything is missing from this design? (If yes please specify)** | No | Yes | - |
| Percentage of Response: | 66.67% | 33.33% | - |
| **Specified Response:** | - | Titles should be put under the visual icons at top to identify their purpose | - |
| | - | I think the news carousel should still be present on the main page | - |
| | | | |
| **Would this design make it easier to find information, or more difficult?** | Easier to find information I am looking for | More difficult to find information I am looking for | - |
| Percentage of Response: | **100%** | 0% | - |

The student questionnaire results indicated that 100% of students found the navigational layout easy to use and indicated that it is clear to find things. General positive comments stated the following;

- Good use of the School colour and not overused in the design
- Use of flat icons makes the site feel more modern
- Home screen design layout is good with important information easy to find
- Timetable implementation is better and provides more useful information

## Recommendations

There are a number of usability issues with the current SCM intranet design, the biggest issue being that students find the navigational layout confusing and detriments their ability to find information easily. The secondary issue is that the timetable positioning is not ideal, and even though the School's intent is to ensure students read the news notifications this should not come as a detriment to the student experience of engaging with the intranet site. The third issue discovered through this research is that students are dissatisfied with their experience of viewing the site on their mobile devices, and 86% of students are using their mobile device to access the intranet to check their timetable. The prototype devised as part of this work uses an implementation of the Tiva Timetable which is a responsive plugin which is easy to use both on desktop and mobile device. It is recommended that this plugin is explored further and an implementation of the timetable is amended to either use this plugin, or a similarly responsive solution to improve the mobile experience.

It is of the utmost importance when designing a website or intranet system to take into consideration the user's needs throughout the entire process and as part of the series of focus groups the following information was discovered;

- Many of the features which have been created to improve the student experience in real life such as the lab finder tool or the ability to book equipment were not being used due to the difficulties experienced on the intranet and not being able to locate these tools. These features need to be relocated to a more discoverable position as demonstrated in the prototype solution
- Relevant information is important. One of the key frustrations of students was being presented with too much information or irrelevant information in key locations such as the staff and module pages. These features need to be refined so that an entire staff or module list is not presented first, and rather information is filtered first to be relevant to the student, and then expanded later with search or filtering options
- Personalization is important. Students would often ignore the news carousel completely because they had become used to being presented with information which was not applicable to their current form of study. This created a situation where they would potentially miss announcements which were of interest as they had stopped looking at this feature and simply scrolled past it each time they accessed the intranet
- UCD must be performed in order to create a suitable solution which fits the user requirements and increases user engagement with the intranet site
- Students found the current intranet design to appear outdated and having more than one navigational bar available was confusing
- The most popular links used on the intranet were links which redirected to external pages such as email, Blackboard or other areas of the School of Computing website

It is recommended to further expand the prototyped design solution and to perform usability testing on a wider group to get more significant results and to gauge which features can be refined or indeed removed from the intranet site. As this project focused on a redesign of the existing implementation and did not intend on removing or scaling the usage of every component available to the student it would good practice to evaluate all the features available and remove some of the content which is not used.

## Conclusion

This project explored the usability of the SCM intranet and gauged student opinions on how useful they find it as a source of information. There were many problems identified with the current implementation and after a series of focus groups to design an improved intranet using participatory design derived from student feedback and wireframing techniques a solution was presented as an alternative. Frustrations included the site not being optimized for mobile devices causing difficulties viewing timetable content on a smaller device, and difficulty finding some of the features which were put on the intranet to aid students booking equipment and finding free labs. Even though the intention of these tools is to improve the student experience, the delivery method in which they were presented to the students meant that some students were not even aware that these features existing on the site, and they had not been able to find them prior to their involvement in this project. Navigational issues and content overload can cause users to switch off and no longer engage in the site, and this was evident from some students no longer checking the news carousel as they had become accustomed to it displaying irrelevant information. It is important to design a global navigational system where the navigational layout is simple and consistent and does not enable the user to potentially get lost amongst the site. The prototype solution minimized the layers of navigation available to the user to encourage them to direct their focus and be able to find information easily. Improving the user experience involves ensuring that every measure is taken to ensure that the user is not hindered by, or even aware of the process that they must follow in order to achieve the goal they are trying to accomplish. The improved design presented as a medium-high fidelity prototype enabled the participants to intuitively find information under sections which made sense and were descriptive enough to signpost where information would be found in each location.

Involving the participants throughout the whole design process creates positive results, however the UX practitioner needs to take into account feedback and comments while also refining the information and identify the key areas where the focus of the project should sit. Not following these guidelines can lead to scope creep of the project and the temptation to try and redesign everything to include all the wanted user requirements. In doing this the design could potentially be made less efficient than in its original form, so it is important to incrementally make improvements and still lead the project according to best practices.

Following the recommendations set in this document and using the prototype design and the accompanied UX materials to further develop the prototype into a fully responsive working coded website will provide an improved user experience for students, and will provide them with an intranet portal which is easy to use and a valuable source of information. As illustrated in this project it is difficult to design an intranet site without involving the users who will be using the site, as assumptions that content can easily be found can be made and it is important to review the existing design periodically to ensure that's the user requirements have not changed.

The area of educational intranets is such a specialized topic that is has proven difficult to find specific information in this area for research as part of this project. Although a set of recommendations have been defined as part of this project there are no official design guidelines or best practices published and it would be recommended to explore future work to establish a set of standardized design guidelines for educational intranets similar to the documents D*esigning and Managing an Intranet* by the Australian Government Information Management Office. (2004) *Research-Based Web Design and Usability Guidelines* by the U.S. Department of Health and Human Services (HHS) (2003).

## Tips for Usability Practitioners

When developing intranet sites in an educational setting consider the following tips:

- Prior to usability testing a medium-high fidelity prototype of the solution it is important to explain the differences of what functionality will and will not be available using the prototyping software compared to a fully functioning website prototype
- Research current educational intranet design trends to see if there is a common theme or layout being used
- Perform a series of focus groups with the same participant group to involve them in the full design cycle – this enables true participatory design
- Collect data from not only the focus group participants but also from a wider audience of users of the intranet – this was done through an online survey
- Create a design prototype which has text content and not *loreum ipsum* text as this enables the participants to fully engage and usability test the prototype as if it were the final product
- Educational intranets should have personalized content and the ability to engage with other users – without these features the users will not be driven to engage with the site
- Beware of scope creep when involving users in the design process – do not try and address every single negative issue, rather prioritize the concerns and implement the top five

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## Appendix 1a – Online Survey TypeForm Report Data

The following are excerpts from the report created from the results of the survey hosted on www.typeform.com.

The online survey can be viewed at the following location:

https://katherine113.typeform.com/to/QaXPNL

**Full Report Location**
The full report results can be found in the following location:
**\\Portfolio\TypeForm Survey\General report - SCM Intranet Survey (updated).pdf**

Which devices do you use to access the SCM intranet?

**35** out of 35 people answered this question

| | | |
|---|---|---|
| 1 | Windows desktop or laptop | 31 / **89%** |
| 2 | Android phone | 21 / **60%** |
| 3 | Apple iPhone | 9 / **26%** |
| 4 | Apple Mac desktop or laptop | 8 / **23%** |
| 5 | iPad tablet | 7 / **20%** |
| 6 | Android tablet | 6 / **17%** |
| 7 | Windows phone | 2 / **6%** |
| 8 | Windows tablet | 0 / **0%** |

What device do you **most often** use to access the SCM intranet?

**35** out of 35 people answered this question

| | | |
|---|---|---|
| 1 | Windows desktop computer or laptop | 24 / **69%** |
| 2 | A smartphone (Apple/Android/Windows) | 8 / **23%** |
| 3 | Apple desktop computer or laptop (Mac) | 2 / **6%** |
| 4 | Apple iPad tablet | 1 / **3%** |
| 5 | Andoid or Windows tablet | 0 / **0%** |

Where do you **most often** access the SCM intranet from?

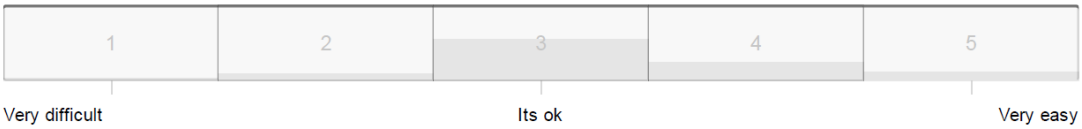
**35** out of 35 people answered this question

| | | |
|---|---|---|
| 1 | At home from a computer | 16 / **46%** |
| 2 | On campus from a computer | 9 / **26%** |
| 3 | At home from a mobile device (phone or tablet) | 4 / **11%** |
| 4 | On campus from a mobile device (phone or tablet) | 3 / **9%** |
| 5 | On the move on a mobile device (for example on public transport, in a cafe etc) | 3 / **9%** |

**How easy** is it to find information on the intranet?

**35** out of 35 people answered this question

Average: 3.31




| | | |
|---|---|---|
| 3 | | 19 / **54%** |
| 4 | | 8 / **23%** |
| 5 | | 4 / **11%** |
| 2 | | 3 / **9%** |
| 1 | | 1 / **3%** |

## Appendix 1b - Online Survey TypeForm Spreadsheet Responses

The following is an excerpt of the spreadsheet of results from the TypeForm online survey.

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | Which devices do you use to access the SCM intranet? | | | | | | | | |
| 2 | # | Are you a..? | What is your current level of study? | Are you a full time student or a part time student? | How long have you been studying at the university? | How often do you attend campus? | Windows desktop or laptop | Apple Mac desktop or laptop | Apple iPhone | Android phone | Windows phone | iPad tablet | Android tablet | Windows tablet | What device do you **most often** use to access the SCM intranet? |
| 3 | 0d90667cfdfdc5cbff857f41929d6f9b | Mature student | Postgraduate - Master's degree (MA, MSc etc.) | Full time | I am in my 4th year of study | Daily (at least once a day) | Windows desktop or laptop | | | Android phone | | | | | Windows desktop computer or laptop |
| 4 | 2c2bad8e12145206533e7cfffa761fc | None of these apply | Postgraduate - Master's degree (MA, MSc etc.) | Full time | I am in my 4th year of study | Daily (at least once a day) | | Apple Mac desktop or laptop | Apple iPhone | | | iPad tablet | | | Apple desktop computer or laptop (Mac) |
| 5 | d26d9c12100c9795ec4fa8e69e526339 | Mature student | Postgraduate - Master's degree (MA, MSc etc.) | Full time | I am in my 4th year of study | Daily (at least once a day) | Windows desktop or laptop | | | Android phone | Windows phone | iPad tablet | | | Windows desktop computer or laptop |
| 6 | cb7c1e6bf02da18cda72481faa0c5f25 | Mature student | Postgraduate - Master's degree (MA, MSc etc.) | Full time | I am in my 4th year of study | Daily (at least once a day) | | | | Android phone | | | | | Windows desktop computer or laptop |
| 7 | 084e466c49ee184c4f7da5cf4dae6981 | Student with disabilities | Postgraduate - Master's degree (MA, MSc etc.) | Full time | I am in my 4th year of study | Daily (at least once a day) | Windows desktop or laptop | | | Android phone | | | | | Windows desktop computer or laptop |
| 8 | 3b2198afa10d8c2e00a777b3d28220e6 | None of these apply | Undergraduate - Bachelor's degree (BSc, Ba etc.) | Full time | I am in my 1st year of study | Weekly (at least once a week) | Windows desktop or laptop | Apple Mac desktop or laptop | | Android phone | | | | | A smartphone (Apple/Android/ Windows) |
| | | None of these | Undergraduate - Bachelor's | | I am in my 2nd year of | Weekly (at least | Windows desktop or | | Apple | | | iPad | | | Windows desktop computer or |

| | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | AE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Where do you usually access the SCM intranet from? | | | | | | Which of the following features **do you use** o | | | | | | | | | | |
| 2 | On campus from a computer | On campus from a mobile device (phone or tablet) | At home from a computer | At home from a mobile device (phone or tablet) | On the move on a mobile device (for example on public transport, in a cafe etc) | Where do you **most often** access the SCM intranet from? | View my timetable | Access my email | Access Blackboard | Access the Library page | View Student Information | Read the news notifications | View module/course information | View staff list | View assessment schedule | View examination dates | View regul |
| 3 | On campus from a computer | On campus from a mobile device (phone or tablet) | At home from a computer | At home from a mobile device (phone or tablet) | | On campus from a computer | View my timetable | Access my email | | | | | | View staff list | | | |
| 4 | On campus from a computer | On campus from a mobile device (phone or tablet) | At home from a computer | At home from a mobile device (phone or tablet) | On the move on a mobile device (for example on public transport, in a cafe etc) | On the move on a mobile device (for example on public transport, in a cafe etc) | View my timetable | Access my email | Access Blackboard | Access the Library page | View Student Information | | View module/course information | View staff list | | | |
| 5 | On campus from a computer | On campus from a mobile device (phone or tablet) | At home from a computer | At home from a mobile device (phone or tablet) | | On campus from a computer | View my timetable | Access my email | Access Blackboard | Access the Library page | | | | | | | |
| 6 | | | | At home from a mobile device (phone or tablet) | | At home from a mobile device (phone or tablet) | View my timetable | Access my email | Access Blackboard | | | | | | | | |
| 7 | On campus from a computer | On campus from a mobile device (phone or tablet) | At home from a computer | At home from a mobile device (phone or tablet) | On the move on a mobile device (for example on public transport, in a cafe etc) | On the move on a mobile device (for example on public transport, in a cafe etc) | View my timetable | | | | | | | | | | |
| 8 | | On campus from a mobile device (phone or tablet) | At home from a computer | At home from a mobile device (phone or tablet) | On the move on a mobile device (for example on public transport, in a cafe etc) | On campus from a mobile device (phone or tablet) | View my timetable | | | | | Read the news notifications | | | | View examination dates | |
| | | | At home from a | At home from a mobile device (phone or | | At home from a | View my | Access my | Access | | | | View module/course | | View assessment | | |

**Full Report Spreadsheet Location**

The full report spreadsheet results can be found in the following location:

**\\Portfolio\TypeForm Survey\SCM Intranet Survey (updated)-report.xsl**

## Appendix 2 – Focus Group Session One

The following is an excerpt from the Focus Group Session One report:

### EXECUTIVE SUMMARY

The following study illustrates key positive and negative experiences associated with the current implementation of the SCM intranet site. It was predicted that there would be key design concerns with the current implementation of the site, including issues with navigational structure and overall design implementation and these predictions were confirmed by a focus group into investigating student perceptions of the intranet site and how the design could be improved to create a more positive student experience. Recommendations are made within this document on the key areas which need improvement to establish a better implementation of the intranet site to improve the student experience.

### INTRODUCTION

A focus group was organized to determine what the current student opinion was of the current intranet implementation and what positive and negative features and experiences students had regarding it.

### METHODOLOGY & PARTICIPANT PROFILE

#### INSTRUMENT DEVELOPMENT

The process used to develop the discussions with the participants used sticky notes and the KJ-Method (also sometimes referred to as affinity diagramming) to allow the group to quickly reach a consensus on the priorities of the subjective, qualitative data. This method is very effective for organizing and prioritizing opinions within a group environment and objectively gets groups to define the top priorities. This technique was identified as a good basis for a focus group discussion after researching various User Experience (UX) methods to capture data from users as part of Participatory Design.

The purpose of the two activities was to understand the perceived positive and negative emotions associated with the current intranet design and to also understand what aspects of the intranet site were deemed useful and whether or not there were opportunities to design new functionality which was apparently missing. The limitations scoped out to the participants was that for each topic they were only able to provide single answer responses on each sticky note, and that they could use as many sticky notes as they deemed necessary. This was to enable sorting later in the activity based on individual viewpoints per sticky note.

#### SITE SELECTION

The focus group was located in one of the labs for postgraduate students at Teesside University. The purpose behind this was due to the students that were recruited for the focus group were all studying a module around User Experience Modelling.

## PARTICIPANT SELECTION

Participants selected for this focus group were studying full time at postgraduate level at Teesside University and were accessing the intranet regularly at least once a day. They were a combination of students within the age range of 18-21 and mature students.

## DISCUSSION RESULTS

The following section provide a detailed analysis of the topics discussed, responses received and overall attitudes.

## TOPIC #1: POSITIVES AND NEGATIVES OF THE CURRENT INTRANET SITE

The topic to be discussed in the first activity was around the positives and negatives of using the current intranet site. A clustering sticky note activity was performed to visualize the group's perceptions of the current intranet site to identify whether there was a common theme amongst individual's complaints.

The responses can be seen in the **Appendices** under Topic #1: Comments, Topic #1: Positives and Negatives of the Current Intranet Site and Topic #1: Clustered Responses.

1) **Question 1:** What are the **positives** of the current intranet site?
   a) The participants stated that the following factors caused them to have a positive experience of using the intranet:
      - It has useful information for example timetable, module details.
      - It is easy to find the timetable.
      - It is easy to see the timetable for future weeks.
      - It is easy to find which rooms are free.
      - The online timetable.
      - The lab timetables are ordered neatly.
      - There are links to student support as well as academic subjects.
      - It shows contact information for tutors.
      - Has an easy to find timetable.
      - The news carousel informs students of what is happening around campus and you can navigate back and forth.
      - The timetable displays well on desktop.
      - It is easy to find your tutor details.
      - It displays student timetables.
      - Lab finder is useful for finding free rooms with special software.
      - It's easy to find the location of a room you are meant to be in.
      - Module details are right at the bottom with relevant info required to get in touch with lecturers.

b) After clustering the responses together the general consensus was that;
   - Timetable is most used feature of the intranet, and students will even sometimes use the intranet site purely to check their timetable.
   - External links and personal information is used and sought after.
   - Students use lab finder to find free rooms but also to check for special software installed.
   - Students use the intranet to find the location of where classes are scheduled.

2) **Question 2**: What are the **negatives** of the current intranet site?
   a) The participants stated that the following factors caused them to have a negative experience of using the intranet:
      - Quick Links is repeating information put into other navigation bars.
      - The settings and help icons are mock links that don't work.
      - Colours for future modules on timetable are opaque and can confuse.
      - The email link doesn't go directly to email – redirect to another page.
      - Clicking a module title on the timetable causes the timetable to jump to a blank timetable
      - The IWS area is in a really small font size and should be included in a navigation bar.
      - 'Freelance study' makes timetable cluttered and hard to read.
      - Timetable can be difficult to view on mobile.
      - The intranet layout doesn't use the full width of the page.
      - The news announcements are not relevant to me.
      - The modules page has unnecessary information not relevant to me.
      - The top navigation bar is hard to read and out of the way.
      - The design and layout looks outdated.
      - The intranet site is not responsive on mobile.
      - The main navigation bar font size is too small.
      - Layout is poorly displayed on mobile devices.
      - It looks ugly.
      - Maps on timetable don't name the building they just state a room number.
      - The staff list is cluttered and cannot be sorted into categories.

   c) After clustering the responses together the general consensus was that;
      - The visual design provided a negative user experience.
      - The navigation bars caused confusion and students didn't know which navigation bar to use.
      - The information provided on the intranet is not always relevant or lacks the ability to be personalized.
      - Students want an intranet design which displays correctly on mobile devices.
      - External links should visit the location as intended, not redirect to additional pages, or be mock links.

**Full Focus Group Session Report Location**
The full Focus Group Session One report can be found in the following location:
**\\Portfolio\Focus Group Session One\Focus Group Report Session One.pdf**

## Appendix 3 – Focus Group Session Two

The following is an excerpt from the Focus Group Session Two report:

### EXECUTIVE SUMMARY

The following study displays some concept wireframe ideas created by students as part of a participatory design process during a focus group session. It was predicted that the main design change would be the positioning of the timetable element of the intranet site, and the collective wireframe designs confirmed this hypothesis. It was also interesting to note that the navigational bar was also minimized to having one primary bar at the top of the page compared to the current design. The following document includes some recommendations on the key areas which need to improve to create a better design template for the intranet site to improve the student experience.

### INTRODUCTION

A focus group was organized collate a series of wireframe designs created by students to illustrate their opinions on what the layout of the intranet site should be according to their needs.

### METHODOLOGY & PARTICIPANT PROFILE

#### INSTRUMENT DEVELOPMENT

The process used to develop concept design ideas with the students was participatory design using wireframe sketching. This allowed all of the students to participate and create design concepts with disregard for their artistic ability as wireframe sketching is a simple layout concept which does not require a high level of detail past sketching layout guides. This technique was justified as a good basis for a focus group discussion after researching various User Experience (IX) methods to capture design ideas, and identifying that rapid designing using wireframes is a common concept used not only individually but can also be used within groups.

The purpose of this activity was to understand the design concepts that students would put forward in regard to how they wish to use the intranet. The students were provided with three potential layout options – single page layout, dual column layout and multiple column layout and they were free to choose appropriately.

#### SITE SELECTION

The focus group was located in one of the labs for postgraduate students at Teesside University. The purpose behind this was due to the students that were recruited for the focus group were all studying a module around User Experience Modelling.

## PARTICIPANT SELECTION

Participants selected for this focus group were studying full time at postgraduate level at Teesside University and were accessing the intranet regularly at least once a day. They were a combination of students within the age range of 18-21 and mature students.

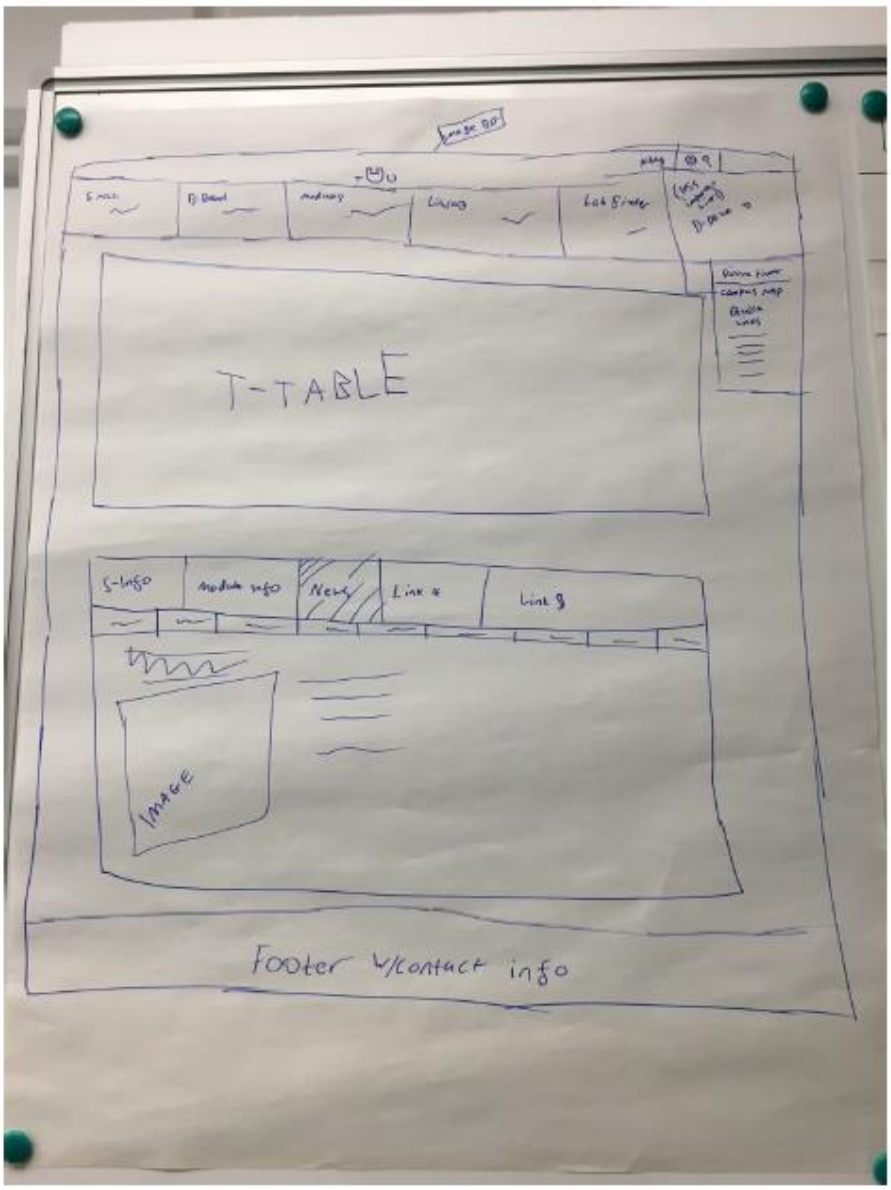
## DISCUSSION RESULTS

The following section provide a detailed analysis of the topics discussed, responses received and overall attitudes.

### ACTIVITY #1: INDIVIDUAL WIREFRAMING EXERCISE

Students were given an explanation of what the wireframing exercise was aimed at achieving. The students were given the following example illustrated on the board of what the wireframe concept for the current intranet design would look like;

The students were then asked to create a wireframe sketch to illustrate how they think the layout of the site should look. The following are what the students presented after having 15 mins to sketch down their initial ideas;




**Full Report Location**
The full Focus Group Session Two report can be found in the following location:
**\\Portfolio\Focus Group Session Two\Focus Group Report Session Two.pdf**

## Appendix 4a – Focus Group Session Three Questionnaire

The link to the InVision prototype is as follows: https://invis.io/CD9Z65B54

The following is an excerpt of the questionnaire used in the Focus Group Session Three to perform usability testing on the prototype solution.

**Full PDF Document Location**
The full questionnaire document as given to participants can be found in the following location:
**\\Portfolio\Focus Group Session Three\NewSCMIntranetDesignQuestionnaire.pdf**



# NEW SCM INTRANET DESIGN

## 1ST DECEMBER – FOCUS GROUP/USABILITY WORKSHOP

An interactive prototype of the SCM intranet has been created based on student feedback and suggestions on how to improve the current design. This prototype is a series of images which are linked through hotspot hyperlinks. This means that even though the prototype will have the look and feel of the final product, it will not have all the expected functionality of a website. The purpose of this prototype is to gage what your opinions, thoughts and feelings in regard to this design are, and how you believe it affects the user experience.

Current SCM intranet: https://scm-intranet.tees.ac.uk/

New design prototype: https://invis.io/CD9Z65B54

## PART 1 – GENERAL QUESTIONS

1) What do you think of the navigational layout of this design?
*(Please select from the following options)*
   a) It is easy to use. ☐
   b) Using it is the same as navigating the old intranet design (not better or worse). ☐
   c) It is difficult to use. ☐

2) How does the design make you feel about using the site?
*(Please select from the following options)*
   a) It makes me anxious – it is difficult to find things. ☐
   b) It is clear to find things and I am happy about using it. ☐

3) What comments do you have about the design? Examples are in regards to the colour scheme/look and feel/layout/spacing/use of icons etc…

4) Do you think this design is more up to date than the previous design?

a) Yes ☐
b) No ☐

5) Do you prefer this design or the previous design?
a) This new design ☐
b) The previous design ☐

6) Do you think anything is missing from this design?
*(If yes, please specify)*
a) No ☐
b) Yes ☐

| |
|---|
| |

7) What do you like the most about this design?

| |
|---|
| |

8) Would this design make it easier to find information, or more difficult?
a) Easier to find information I am looking for ☐
b) More difficult to find information I am looking for ☐

## PART 2 – TASK BASED EXPLORATION

**Task1** – You want to find out more information about the university – which section do you use?

*(If multiple sections are applicable then please list all that you would find useful)*

**Task 2** – You want to access Blackboard, where can you do this from on the new design?

**Task 3** – You want to access Evision, where can you do this from on the new design?

**Task 4** – You want to access email, where can you do this from on the new design?

**Task 5** – You want to access the Library page, where can you do this from on the new design?

**Task 5** – You want to know which tutor teaches your timetabled class for Inclusive Design, how do you find out this information?

**Task 6** – You want to communicate with fellow students, which area of the intranet would you find useful to do this?

**Task 7** – You pinned a news article to read later, where can you find this?

## Appendix 4b – Focus Group Session Three

The following is an excerpt from the Focus Group Session Three report:

### EXECUTIVE SUMMARY

The following study reports on the feedback given by a group of students when presented with a medium-high fidelity prototype of the suggested new intranet design during a focus group session. The prototype was presented through a prototyping website titled InVision and the prototype was constructed of pages of visual design concepts which were hyperlinked together to simulate the final website design. It was predicted that the improvements made in regards to the navigational structure and visual screen layout would encourage students to use the intranet more often than they currently do and that they would find the experience more beneficial to their needs. The following document includes some recommendations on the key areas which need to improve to create a better design template for the intranet site to improve the student experience based on the feedback given during the session using the design prototype.

### INTRODUCTION

A focus group was organized to allow a group of students to interact with the proposed intranet design to gauge whether the improvements made would improve the user experience of interacting with the site and whether it would encourage students to interact more with it. The students were encouraged to voice their opinions on the design prototype and to provide suggestions for further improvements.

The InVision prototype can be located here;

https://invis.io/CD9Z65B54

If the above link does not work then a backup copy with reduced functionality can be found in the following location;

\\Portfolio\InVision prototype\Interactive Prototype

### METHODOLOGY & PARTICIPANT PROFILE

#### INSTRUMENT DEVELOPMENT

The process used to test the concept design with the students was using a medium-high fidelity prototype hosted on InVision through usability testing in a group. This allowed all of the students to participate and to interact with the design concept as if it was presented in a webpage format, without the need to write the code to create the hyperlinked pages. This also meant that the students were briefed on the limitations of using this prototype format compare with using an actual HTML page which would limit certain features available in the prototype. The medium-high fidelity level of prototyping was justified as a good basis for a focus group discussion after researching the differences between low, medium and high fidelity prototypes and concluding that for the purposes of evaluating a

design and layout restructure of and existing site that it would be suitable given the timeframe for this project and the number of pages requiring redesign to perform this usability testing on a medium-high prototype.

The purpose of this activity was to understand the response from the students as to whether they prefer the suggested design concept to the current implementation of the intranet site, and whether such an improvement would engage them more to use the intranet site more frequently.

## SITE SELECTION

The focus group was located in one of the labs for postgraduate students at Teesside University. The purpose behind this was due to the students that were recruited for the focus group were all studying a module around User Experience Modelling.

## PARTICIPANT SELECTION

Participants selected for this focus group were studying full time at postgraduate level at Teesside University and were accessing the intranet regularly at least once a day. They were a combination of students within the age range of 18-21 and mature students.

# DISCUSSION RESULTS

The following section provide a detailed analysis of the topics discussed, responses received and overall attitudes. A copy of the questionnaire used can be found in the Appendices section under New SCM Intranet Design - Questionnaire.

## PART #1: GENERAL QUESTIONS

Part 1 of the questionnaire was to ask the students what their opinions on the redesign were and to note positives and negatives of the proposed design.

The responses can be seen in the Appendices under New SCM Intranet Design - Evidence.

1) What do you think of the navigational layout of this design?
   a) It is easy to use (100%)
   b) Using it is the same as navigating the old intranet design (not better or worse) (0%)
   c) It is difficult to use (0%)

2) How does this design make you feel about using the site?
   a) It makes me feel anxious – it is difficult to find things (0%)
   b) It is clear to find things and I am happy about using it (100%)

3) What comments do you have about the design? Examples are in regards to the colour scheme/look and feel/layout/spacing/use of icons etc...

**The participants stated the following positive comments in regards to the proposed design;**

- Good use of the school colour and not overused
- Good home screen design with important information present
- Pop ups displaying additional timetable information is helpful
- I really like the home page – the colour scheme is very similar to the original but the layout seems fresh and clean
- I like the simple layout
- The icon elements are a good size and well positioned, and makes it easy to locate information
- I like the use of flat UX design, feels more modern than the current site
- I like the simple colour scheme – the use of a main colour makes the more important information stand out

**The participants stated the following negative comments in regards to the proposed design;**

- Some icons at the top are not clear as what they are for
- Personally I find the use of other colours other than the purple a bit out of place
- The timetable should have the tab buttons for Semester 1 and Semester 2 to jump to each part of the year

4) Do you think this design is more up to date than the previous design?
   a) Yes (100%)
   b) No (0%)

5) Do you prefer this design or the previous design?
   a) **This new design** (100%)
   b) The previous design (0%)

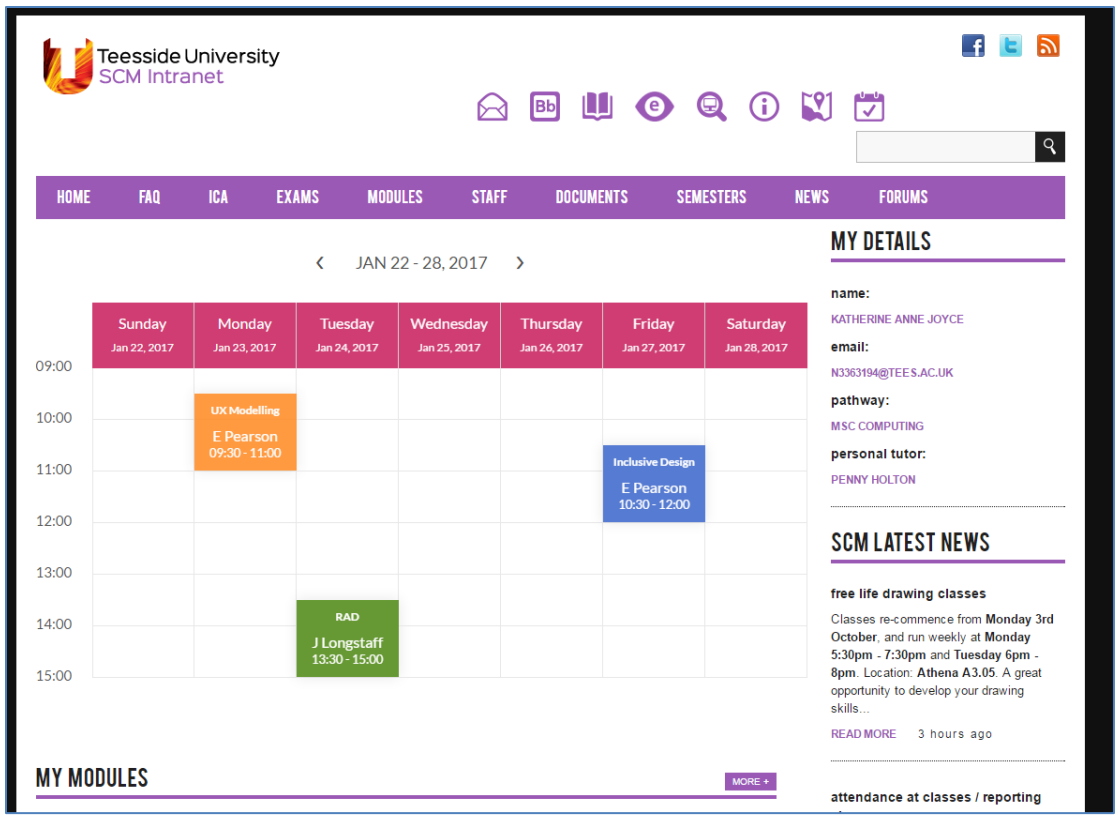
6) Do you think anything is missing from this design? *(If yes please specify)*
   a) **No** (66.67%)
   b) **Yes** (33.33%)
   - *Titles should be put under the visual icons at top to identify their purpose*
   - *I think the news carousel should still be present on the main page*

7) What do you like the most about this design?
   - Layout is uncluttered and easy to navigate
   - The simple and consistent colour scheme
   - The use of space in the layout

**Full Report Location**
The full Focus Group Session Three report can be found in the following location:
**\\Portfolio\Focus Group Session Three\Focus Group Report Session Three.pdf**

## Appendix 5 – Tiva Timetable HTML prototype

The following is a screenshot illustrating the Tiva Timetable plugin implemented.




This plugin needs to be hosted to run correctly, a hosted version of this mocked up HTML site can be found in the following location:

http://reflectionsofrage.com/n3363194/site2/

A hosted version of just the plugin functionality illustrating the options available for implementation can be found in the following location:

http://reflectionsofrage.com/n3363194/site1/

The plugin source code can be found in the following location (won't run unless hosted):

**\\Portfolio\HTML prototype\Tiva Timetable Responsive Demo**

A local copy of the HTML website implementation can be found in the following location:

**\\Portfolio\HTML prototype\Intranet Mockup With Timetable\site2**

## Appendix 6 – InVision prototype

The following is the link to the InVision prototype:

https://invis.io/CD9Z65B54

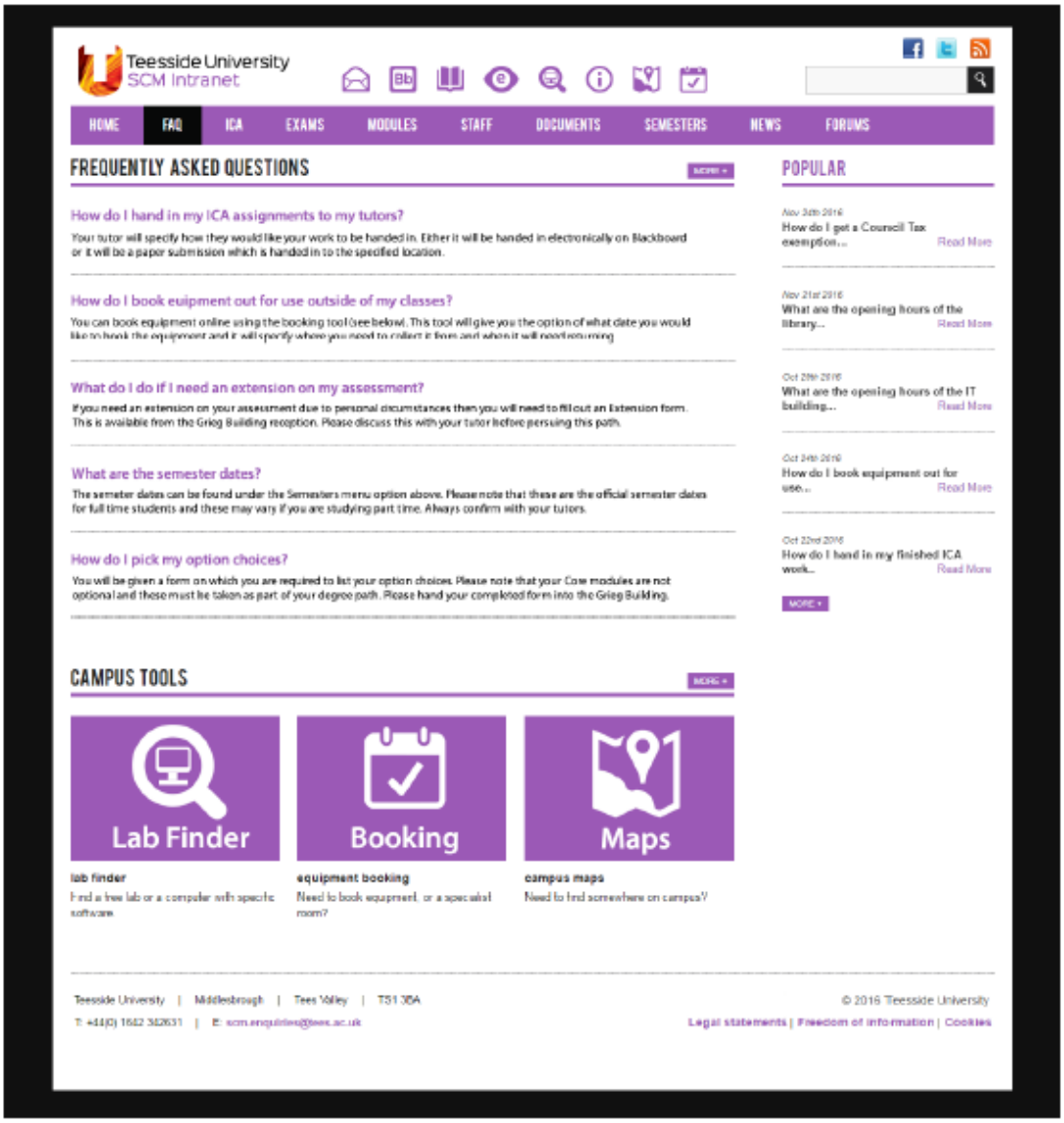
The following is the link to the local copy of the prototype:

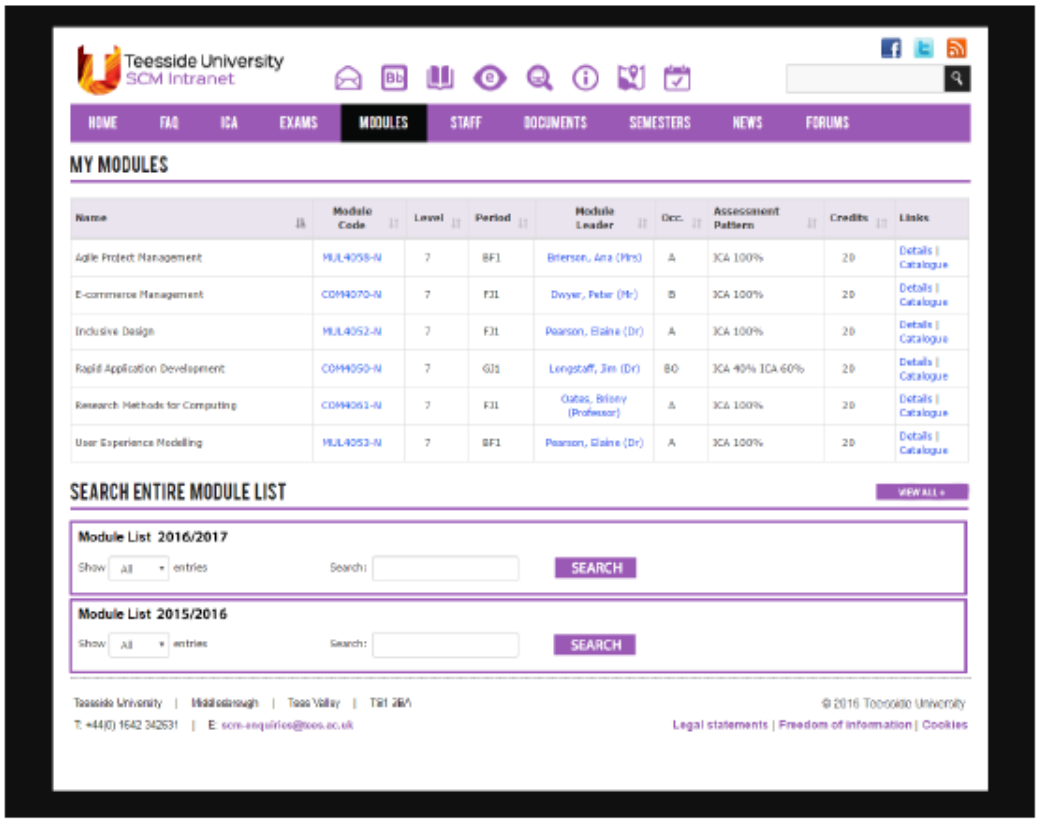
**\\Portfolio\InVisioin prototype\Interactive Prototype**

The full PDF document illustrating all screens can be found at the following location:

**\\Portfolio\InVision prototype\PDF\SCM Intranet Screens.pdf**

The following are a few screenshots of the implementation:




Teesside University
SCM Intranet
HOME
FAQ
ICA
EXAMS
MODULES
STAFF
DOCUMENTS
SEMESTERS
NEWS
FORUMS
MY MODULES
Name
Module Code
Level
Period
Module Leader
Occ.
Assessment Pattern
Credits
Links
Agile Project Management
E-commerce Management
Inclusive Design
Rapid Application Development
Research Methods for Computing
User Experience Modelling
SEARCH ENTIRE MODULE LIST
VIEW ALL »
Module List 2016/2017
Show All entries
Search:
SEARCH
Module List 2015/2016
Show All entries
Search:
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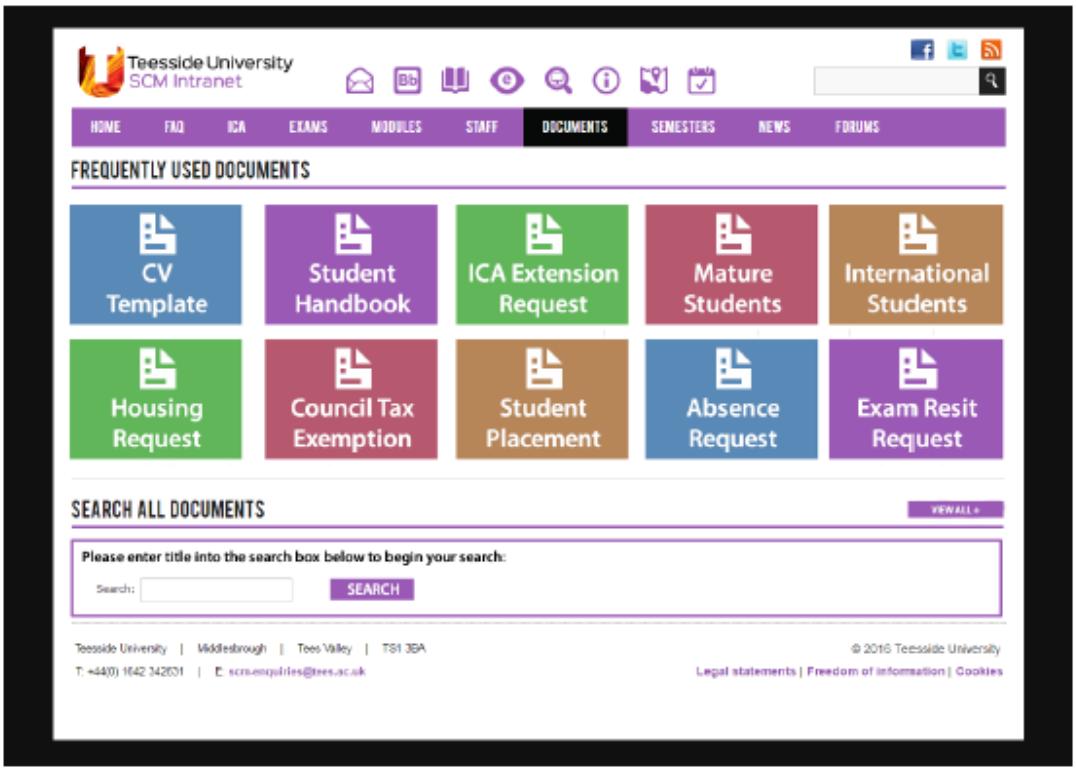
Teesside University
SCM Intranet
HOME
FAQ
ICA
EXAMS
MODULES
STAFF
DOCUMENTS
SEMESTERS
NEWS
FORUMS
FREQUENTLY USED DOCUMENTS
CV Template
Student Handbook
ICA Extension Request
Mature Students
International Students
Housing Request
Council Tax Exemption
Student Placement
Absence Request
Exam Resit Request
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MY MODULES
UX Modelling
MUL4053-N
Research Methods
COM4061-N
RAD Development
COM4050-N
Inclusive Design
MUL4052-N
E-Commerce Management
COM4078-N
Agile Project Management
MUL4058-N
CAMPUS TOOLS
Lab Finder
Booking
Maps
ICA DEADLINES
UPCOMING EXAMS

## Appendix 7 - Personas

The following are the personas used in this design project:

## Appendix 8

The author guidelines for the Journal of Usability Studies can be found in the following location:

**\\Portflio\JUS Guidelines**