Learning and Information Services

Usability Survey

Report I
General Overview

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Acknowledgments

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Executive Summary

The UHI Usability survey investigates student and staff perceptions of the usability of eight learning and information services: Email (Groupwise), Virtual Learning Environment (Blackboard), MyUHI, Messenger, UHI Communities, Video Conferencing, UHI Helpdesk, and on-line Library. The survey also evaluates user satisfaction with network space, mailbox size, web filter, and the speed and reliability of the UHI website and services when working from a college or learning centre.

- Students feel more confident than staff in knowing their way around the UHI websites and services. There is some relation to age but confidence levels differ between these user groups independent of differences in age.

- Staff awareness of six out of the eight services evaluated in this study is over 80%. The UHI Communities service is recognised by 61% of staff; the Messenger service is recognised by 53%. Students are clearly less often aware of most services than staff, with the exception of Email where the difference is negligible. Students are least aware of UHI Communities (39% aware), Messenger (46% aware), and Video Conferencing (56% aware).

- Zooming in on the evaluation of services by students and staff who have used them, it becomes clear that Email, Messenger and the Helpdesk service score best on the usability indicators: "easy to use", "does as expected", and "am satisfied using the service". MyUHI, UHI Communities, and the Virtual Learning Environment receive the poorest scores on the usability items from staff. Students are least positive about the UHI Communities and Video Conferencing services.

- Though the Messenger service is evaluated relatively favourably on the usability items, it scores poorly when it comes to the question whether the information and help provided with the service is sufficient.

- Members of staff are significantly less positive in their evaluation of all services, except for the Messenger service, the Video Conferencing service, and the on-line Library service.

- Though the UHI Communities service clearly receives poor ratings both from students and members of staff, the MyUHI service receives almost equally poor usability ratings, at least from staff. Since the MyUHI service is one of the most widely used services, improvements are likely to benefit more users. Desired improvements to this service concern: information provided about the service and the applications that can be accessed through MyUHI, more easy and reliable access to the service (log-in & speed issues), editing/saving/printing documents at home, access to staff areas, and compatibility.

- Finally members of staff are significantly less satisfied than students with the following aspects of the UHI website and services: speed, reliability, web filter, and especially network space and the mailbox size of Email.

1. Introduction

The UHI Usability Survey is part of the Learning and Information Services IT Usability Project which aims to ensure that the full range of services available to UHI students and staff is effectively discoverable and usable. The project takes an evidence-based approach, involving engagement and observation of a range of real users, as well as usability experts (Storm, Greller, Gruber, Janssen, & Westera, 2009). Purpose of the Usability Survey is to generate a general overview, which allows for comparisons across services, user groups, and faculty etcetera. Thus the survey results can be taken as a frame of reference, which will guide the selection of topics for further inquiries and actions.

Usability studies seek to answer the question to what extent a particular system, tool or application enables users to complete designated tasks *effectively*, *efficiently* and to the *satisfaction* of the user (ISO, 1998). Though a survey is not suitable to generate objective information on effective and efficient task completion, it is quite suitable to establish information on user satisfaction and to see how this might diverge among different services and user groups (Hornbæk, 2006). Also *user perceptions* of effectiveness and efficiency can be evaluated through a survey.

2. Goal

The goal of the UHI Usability Survey is to measure student and staff *awareness*, *usage,* and *perceived usability* of Learning Information Services. For a number of the services actual use of Learning and Information Services could be established objectively, through analysis of log records. However these figures do not give any insight as to why a particular service might be used less than expected. Perhaps targeted users are not aware of the service, or dissatisfied with it. The survey is meant to provide additional information concerning awareness and use of the UHI services and to help clarify figures on actual use, e.g. the fact that student group Y hardly uses service X, seems related to a lack of awareness of the service, rather than it's usability.

The survey will help to acquire a general overview of awareness, usage, and user satisfaction, making it possible to identify:

a. specific areas/services where usability issues are most prominent
b. the scope of a usability issue in terms of user categories involved (e.g. new students, more advanced students, staff)
c. whether and where improvements have been realised (through repeated measurement)

Yearly measurements will ensure that the survey develops into an instrument to investigate possible usability issues, and to monitor improvements in the area. This report describes the results of the first round of data collection, which was held in September 2009, three weeks into the new academic year so that possible usability issues of newly enrolled students could be identified. The data gathered through this survey will provide a baseline or benchmark, for future survey outcomes.

In order to keep the time needed to complete the survey within reasonable limits, the survey has been limited to eight services. Services included in the survey are those which are generally available to all students and staff:

- Email
- Virtual Learning Environment
- MyUHI
- Messenger
- UHI Communities
- UHI on-line Library
- Video Conferencing
- UHI Help Desk

More technical 'background' services relating to system performance (e.g. File Space, Wide Area Network Service, WWW Filtered Cache) have been evaluated as well, but less elaborately.

Other services like Electronic resources and Telephony are less widely used and dependent on, for instance, course design. This makes other methods (like focus groups) more suitable to evaluate user satisfaction in relation to these services than a set of general user satisfaction questions.

3. Method

Each of the services was evaluated through a set of questions pertaining to awareness and use, as well as usability. (Throughout this report we will refer to usability meaning *usability as perceived by users*).

Prior to the inventory of awareness and use of each service, respondents have been asked to indicate how confident they are in using the UHI website and services and to what extent different sources have contributed to their confidence. Not feeling confident using the system more generally, might explain lower use rates.

Awareness and use were measured through a single question asking users to indicate how familiar they are with the service. Answer options ranged from "I don't recognise this service" to "I use this service daily".
Usability was measured through three statements, one for each usability aspect identified by the ISO definition:

- perceived effectiveness: "The service does everything I would expect it to do"
- perceived efficiency: "I find this service easy to use"
- satisfaction: "I am satisfied with this service"

Answers ranged from "strongly disagree" to "strongly agree".

For each service an additional statement was included to see whether overall information and help provided with the service is sufficient:

- "Information and help concerning the use of this service is sufficient".

The latter statement provides a clue as to possible solutions: if usability issues exist for a service it is important to know whether improved information and help might offer (part) of

a solution. If usability issues appear to exist despite sufficient information and help, clearly solutions must be sought elsewhere.

For the Library Service a different approach was adopted, since it combines a number of services which are quite different in terms of usage and possibly, usability issues. In order to take this into account without unduly increasing the questionnaire size, use and usability of these services was evaluated through a table presenting simple yes/no answer options.

Services relating to system performance (e.g. File Space, Wide Area Network Service, WWW Filtered Cache) have been evaluated indirectly, and through a single question asking users to indicate their overall satisfaction with speed, reliability, network space and web filters.

Additional background information on respondents was gathered through the questionnaire or retrieved from the student record system, in order to allow for usability issues to be identified as related to particular user groups (e.g. students/staff, different student or staff categories), or contexts (faculty, distance teaching, smaller or larger colleges etc.)

Appendix 1 provides a print version of the full questionnaire. The questionnaire was reviewed by a number of UHI staff members and submitted to a test in a pilot involving 4 students and 4 members of staff. The pilot test consisted of a combined approach of remote usability testing and concurrent think-aloud protocols (Bolton, 1993; Haak, Jong, & Schellens, 2003; Haak, Jong, & Schellens, 2004). Participants were invited to fill in the questionnaire, and think-aloud while doing so. Their actions and thoughts were being monitored remotely through screen sharing via Skype. This method provided valuable insights into the interpretation of questions and answering options and led to several adaptations, e.g. taking a different approach for the on-line Library service.

Using an on-line questionnaire bears some risks in that response is likely to be low and to be skewed towards the IT literate. Fortunately we can compare the group of survey respondents with the general UHI population, on a number of characteristics (e.g. age, gender, faculty, Partner College etc.) so that we can get a fair impression of how representative the results are in those respects. Though we can not do this for IT literacy, analysis of non-response might offer some clues for instance if we find different response rates for new students or older students.

Survey results will be reported in two documents. Report I (this document) provides a general overview of the results, comparing awareness, use and satisfaction both across the services and for the two main user groups: students and staff.

Report II will provide more in-depth analyses, comparing results for more specific categories: e.g. faculties, newly enrolled compared to advanced students. In short this second report will describe to what extent awareness, use and satisfaction is influenced by a number of variables: user characteristics and context variables like college size, higher education versus further education, faculty etc. This second report will also contain summaries of the comments and suggestions students and staff gave through the open ended questions which have not been included in this first report.

4. Results

In total 970 responses were collected: 450 from students, 446 from staff, and 74 respondents who did not identify themselves as a student or a member of staff. (Of this latter group about half dropped out early in the questionnaire, with the start of the evaluation of the second service).

Staff response was analysed to see to what extent it can be considered representative for the overall population. Overall staff response was 10%, but varied greatly according to Academic Partner (Appendix 2, Table 1).
As to the students in the survey a more extensive response analysis was carried out taking into account Partner College, gender, age, study mode (part-time/fulltime), study context (FE/HE), and faculty (Appendix 2, Table 3 – Table 7).
Overall student response was very low: about 2%. Though low response figures constitute a problem in terms of the results reflecting the situation in the population at large, it still makes sense to make an effort to increase the likelihood of the results reflecting the population at large by correcting for over- or under representation of certain categories in the available data. Interestingly student representation across different colleges was fairly proportionate, though Perth students were clearly underrepresented. Besides, part-time students and FE students were underrepresented.
A weight variable was used to correct for over and under representation of Partner College (for staff) and for the under representation of FE students. The latter correction also compensated for the under representation of students from Perth College. Though for the staff user category this procedure resulted in a raise of respondent numbers (which 'inflates' statistical testing), the increase is not dramatic and statistical tests will be checked in the non-weighed condition as well.
Even if response rates were low, still nearly 1000 users of the UHI website and services informed us of their experiences, offering valuable insights as to where and how improvements can be made.

4.1 Confidence

"There are so many changes; I don't think anyone knows their way round the systems."

Actually the situation is not as bad as this comment from a member of staff suggests. Figure 1 clearly indicates that a considerable number of students and staff agree or even strongly agree to the statement "I am confident I know my way around the UHI website and services".
Interestingly, Figure 1 also indicates that students feel more confident than staff. A t-test comparing mean scores of students and staff confirms that students feel significantly more confident than staff (equal variances not assumed, two-sample t(896)= 4,7, p< 01; student Mean=.69, SD=.90; staff Mean=.40, SD=.94).
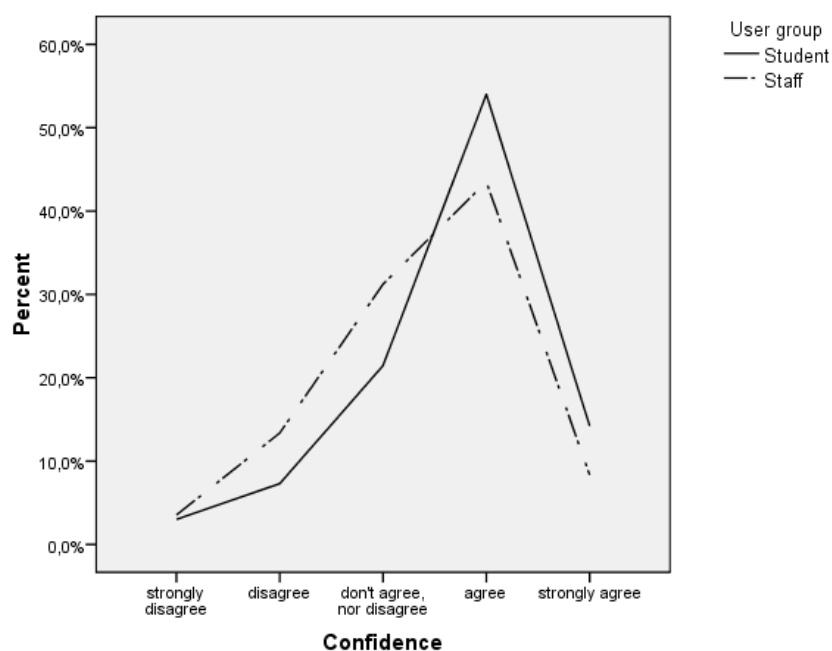
Figure 1: Student and staff confidence

This 'general picture' does not change when we compare students to lecturers only. As yet it is not clear how to interpret this difference. It could be argued that student experiences with the UHI website and services are less complicated than those of staff. Most notably this is the case for the Virtual Learning Environment (VLE): using the VLE in taking a course or in giving a course requires different levels of expertise. But there is also a possibility that these differences reflect a generational difference, assuming that students are younger on average and feeling generally more confident in using computers and navigating websites. Further analysis will have to shed light on this because there are other possible explanations still. Some studies for instance suggest that people are more likely to overestimate themselves when they are still in the early stages of developing competences and skills (Boud & Falchikov, 1989; Dunning, Heath, & Suls, 2004). In order to further probe these possible explanations we analysed the effects of age and 'experience' on the confidence levels for both groups separately, using 'the number of years in current job' as an indicator for staff experience and 'advancement' as an indicator for student experience. There are clear correlations between confidence and user group (r= -.15, p<.01) as well as confidence and age (r=-.33, p<.01). No significant correlations could be observed between confidence and the two experience indicators (years in job, advancement in study). Analysis of partial correlations indicates that the relations between confidence and user group on one hand and confidence and age on the other hand exist independent of each other, i.e. the effect of user group cannot be explained by the fact that staff members are on average older than students. So although the differences in confidence levels are partly related to age, the difference between students and staff confidence levels exists independent of this. Different use of the services might be a factor as suggested above.

More generally the results on confidence raise the question what levels of confidence would be acceptable. Can confidence be expected to be the same for different user groups, bearing in mind that their use of these services might be very different? In this respect there might well have been more reason for concern if students had felt less confident using the UHI website and services than UHI staff.

Students and staff were also asked to indicate which sources contributed to their current level of confidence and whether this contribution was small or important (Figure 2).
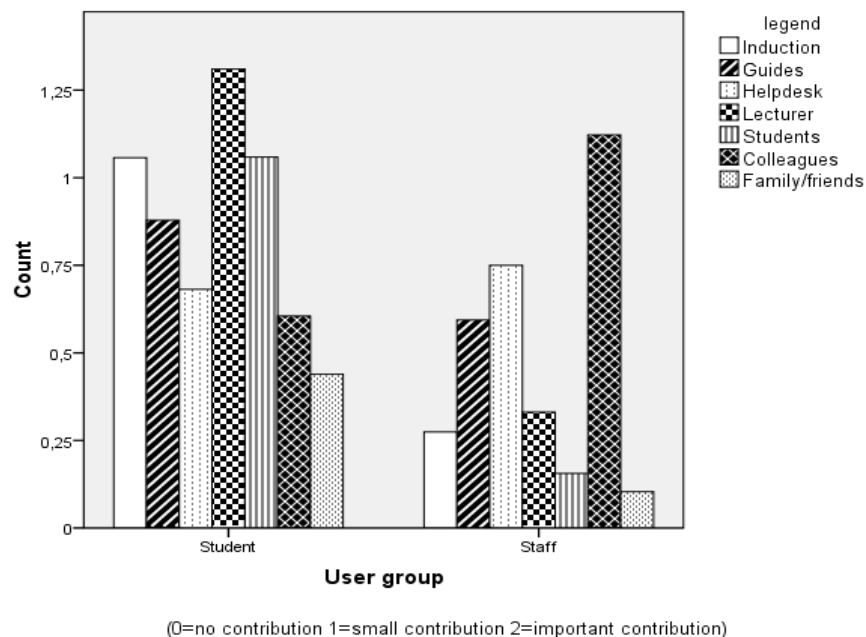

(0=no contribution 1=small contribution 2=important contribution)

Figure 2: Sources contributing to student and staff confidence (mean scores)

On average Lecturers appear to have contributed most to students' confidence, followed by equal average contributions of Induction and Students. For members of staff, the largest contribution came from Colleagues, followed by the Helpdesk and Guides. Though to some extent this is an effect of different circumstances (e.g. staff rely more on colleagues, students more on lecturers) this is not the case for Guides. If it is the case, as suggested above, that staff's use of the UHI website and services is more complex, one would expect that they rely more heavily on guides. It is not clear at this stage whether smaller reported contributions from guides by staff, might be explained from a (perceived) lack of guides available to them or by the fact that they find available guides hardly contributing.

Among the group of students 4% have reported no contribution from any of the sources mentioned, compared to 16% of staff. This is also reflected in respondents commenting that they gained confidence simply by going ahead and using the website and services.

Comments and suggestions on sources contributing to confidence

Quite a number of users - most notably members of staff (N=27) but some students as well (N=9) - have commented that they gained confidence on their own through *'trial and error'* or as one member of staff put it: *"Just spending significant amounts of time hunting for things"*. Besides several comments suggested additional sources to be included in the answering options in a next round: college IT staff, library staff, prior experience and training.

4.2 Awareness and use

The concepts of awareness and use have been combined into a single question inquiring how familiar the user is with each of the services on a scale from 1 to 6:

1. I do not recognise this service
2. I recognise the service but have not used it
3. I have used the service once or twice only
4. I use this service occasionally
5. I use this service weekly
6. I use this service daily

Table 2 summarizes responses in terms of three categories: no awareness, awareness but no use and use.

Table 2. Student and Staff awareness and use of UHI services (%)

	Students			Staff		
	Not aware	**Aware no use**	**Use**	**Not aware**	**Aware no use**	**Use**
Email (Groupwise)	3	3	94	1	3	96
Virtual Learning Environment	21	13	66	5	35	60
MyUHI	25	20	55	12	16	72
Messenger	54	29	17	47	33	20
UHI communities	61	26	13	39	26	35
UHI on-line Library	25	35	40	17	36	47
Video Conferencing	44	37	19	5	24	71
UHI Helpdesk	23	49	28	2	13	85

Comparing the different services, on awareness and use by the two user groups several conclusions are most evident:

- Email is most widely used by both students and staff
- The services which both students and staff are least likely to recognise are Messenger and UHI Communities: 54% of students and 47% of staff is not aware of the Messenger service, and again 61% of students and 39% of staff do not recognise UHI Communities.
- The biggest gaps between students' and staff use of services exist for UHI Communities (13% students vs. 35% staff), Video Conferencing (19% students vs. 71% staff), and UHI Helpdesk (28% students vs. 85% staff).
- About half of the students are aware of the helpdesk service without having used it.

More detailed information on usage (frequency of use) will be presented in the next section in combination with figures on usability.

4.3 Usage and usability

Usage and usability figures will be described for each service separately, but we start with an overview of usability statistics for all services[1], in order to have a frame of reference at the outset. Mean scores are presented in separate graphs for students and staff, with scores ranging from -2 (strongly disagree) to 2 (strongly agree). Significant differences between mean scores of students and staff for a particular service are indicated in the staff graphs by * (p<.05) or ** (p<.01).

Efficiency

Figure 3 shows for all services the mean scores for students and staff on the statement "I find this service easy to use". The figure clearly reveals that both staff and students find Email, Messenger and Helpdesk the most easy to use services, though staff scores tend to be somewhat lower and are significantly lower for the Helpdesk, if still at an average of 1 (= agree).
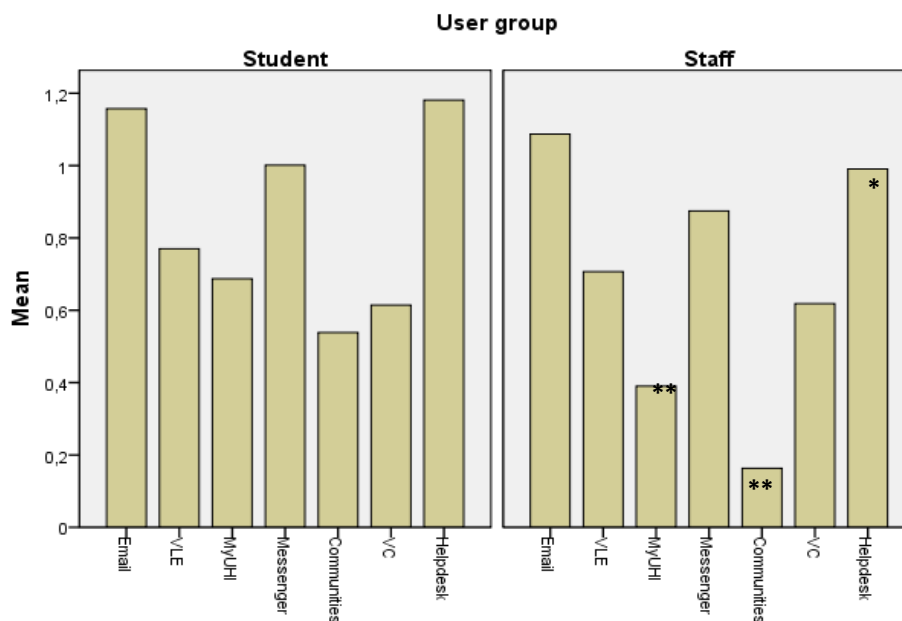

Figure 3: Ease of use of services as perceived by students and staff

Apparently students and staff who have been using the VLE service do not differ in their evaluation regarding the ease of use of this service. This is clearly not the case for the MyUHI and Communities services: members of staff evaluate the ease of use of these services significantly less positively than students. We will go into these differences in more detail when we discuss the results for each service separately in sections 4.3.1 to 4.3.8.

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[1] Except the on-line Library Service (see Section 3).

Effectiveness

Figure 4 summarizes the mean scores for students and staff on the statement "The service does everything I expect it to do".
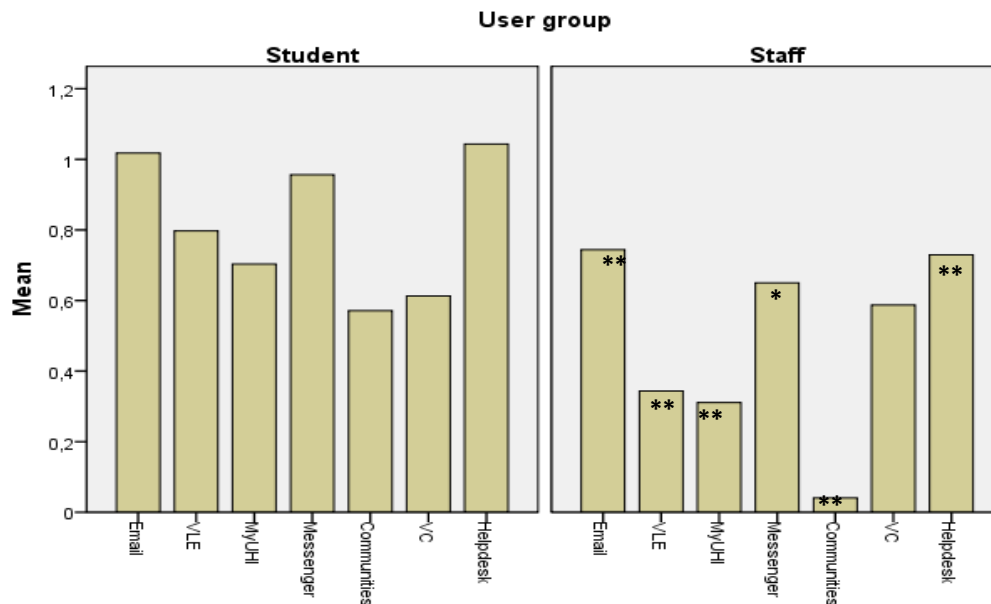

Figure 4: Expectation fulfilment as perceived by students and staff

Students' expectations appear to be significantly better met than staff expectations by all services except the Video Conferencing Service, which is evaluated equally by students and staff. Especially the UHI Communities Service scores low on expectation fulfilment – at least compared to other services. VLE and MyUHI also stand out somewhat poorly compared to the other services although less strongly so. Whereas students and staff were equally positive about the ease of use of the VLE, students are significantly more positive regarding the extent to which the service does what they expect it to do. Comments made through the open ended questions should shed some light on why members of staff find the VLE to fall short of their expectations.

Satisfaction

Figure 5 shows student and staff overall satisfaction with the services. With the exceptions of Messenger and Video Conferencing members of staff are clearly less satisfied using the service than students are. Both students and members of staff are on average most satisfied using the Email, Messenger and Helpdesk Services.
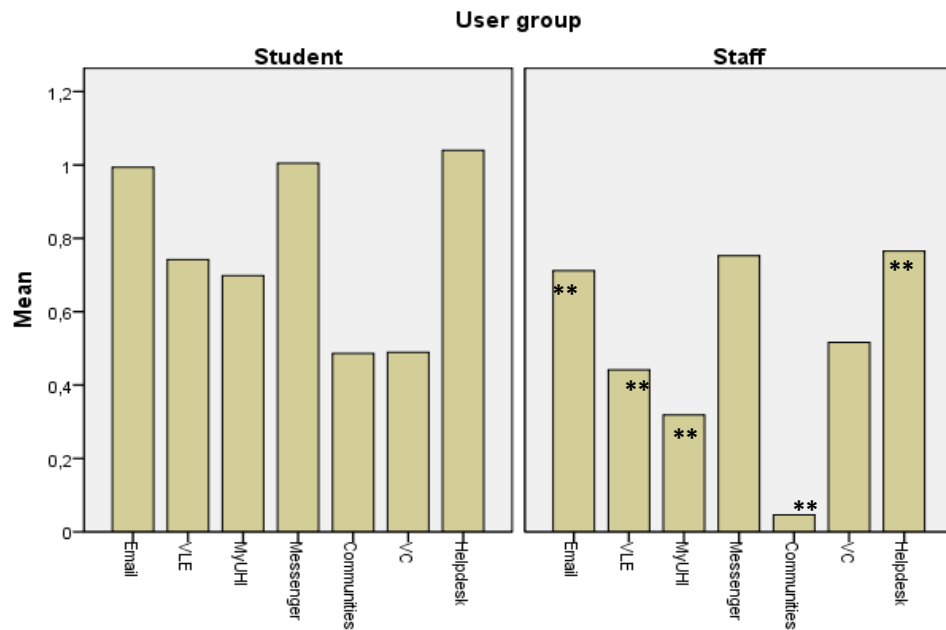
Figure 5: Student and staff satisfaction regarding use of services

Information and Help

Finally Figure 6 presents the mean scores regarding the statement "The information and help provided with this service is sufficient".

Figure 6: Student and staff evaluation of information and help provided

Again members of staff are less positive than students, with the exception of the VC service. Actually here for the first time the average score of students is lower than the staff score, though the difference is not statistically significant. Interestingly we see opposite effects for

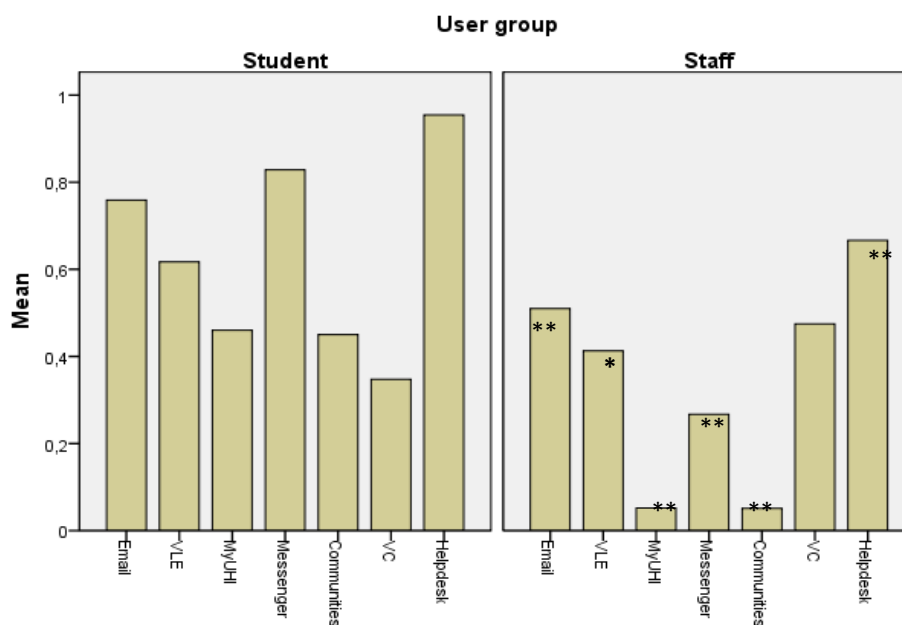the VLE and the MyUHI service when we compare these results with the previous figure presenting the results on satisfaction. Figure 5 shows that staff satisfaction regarding the VLE and MyUHI services is on a comparable, rather low level. Results seem somewhat better for the VLE service when it comes to an evaluation of the information and help provided with the service, whereas they drop to an even lower level for the MyUHI service. Clearly members of staff are least happy with the information and help provided with the MyUHI and the Communities services

The above results on usability will now be further analysed and discussed for each service separately in relation with figures on usage.

4.3.1 Email (Groupwise)

Of all the services included in the survey Email is most widely used: within both user groups 95% uses Email. However there is a clear difference between students and staff when it comes to frequency of use (Figure 7) and access to the Email service. Whereas 95% of staff using the Email service, use it on a daily base, students use the Email service less frequently (43% daily, 32% weekly, 15% occasionally, and 10% once or twice only).
Though students and staff are both more likely to access the Email service using the web browser rather than the Groupwise client software, figures differ considerably: 43% of students use the web browser, compared to 49% using the Groupwise client software. For staff these figures are 14% (web browser) and 83% (Groupwise client software) respectively. Besides 8% of students and 3% of staff indicated they don't know how they mainly access the Email service.

Figure 7: Student and staff Email usage
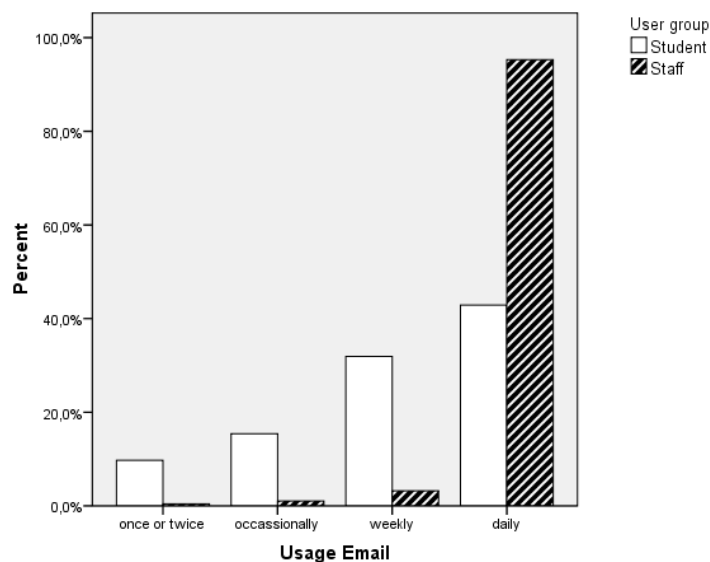
For most services significant positive relations exist between frequency of use and the usability scores. This is not surprising especially for those services which are used on a voluntary basis since dissatisfaction will easily result in decreased frequency of use. Still there are one or two exceptions, which will be addressed below when usage of these services is described.

4.3.2 Virtual Learning Environment (Blackboard)

As Table 2 in section 4.2 showed, 66% of students and 60% of staff have used the Virtual Learning Environment. Usage patterns of the VLE are quite similar for students and staff as Figure 8 illustrates.
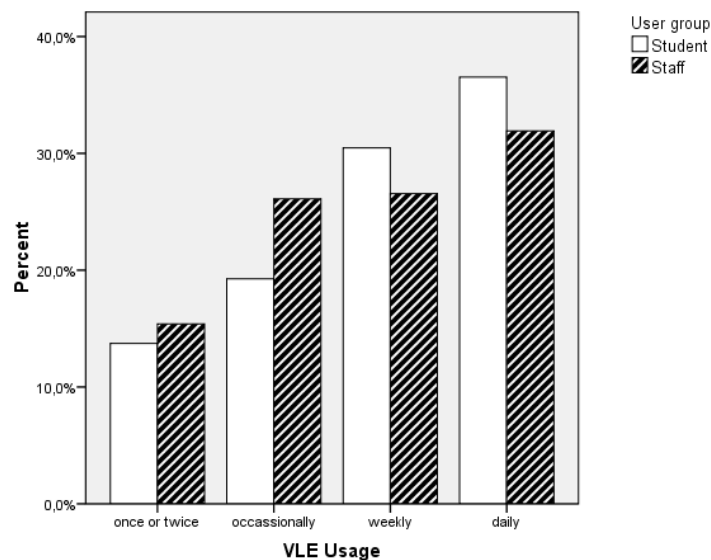

Figure 8: Student and staff VLE usage

In the overall comparison of services it appeared that perceived ease of use of the VLE was also quite similar for students and staff. But then these similarities have not resulted in both groups being equally satisfied using the VLE, as we saw earlier. Members of staff are significantly less likely to agree that the VLE does everything they would expect it to do or that the information and help provided with the service is sufficient.

4.3.3 MyUHI

We already saw that members of staff use the MyUHI service considerably more often than students (Table 2: 72% staff vs. 55% students). Comparing students and staff who have used the MyUHI service, it appears that members of staff also tend to use the service more frequently than students (Figure 9).

Figures 3 to 6 showed significant lower scores for staff regarding the perceived usability of the MyUHI service. In fact the MyUHI service together with the Communities service score lowest when it comes to staff evaluation of the information and help provided with the service. Though mean scores are still positive, they almost reach zero on this issue.
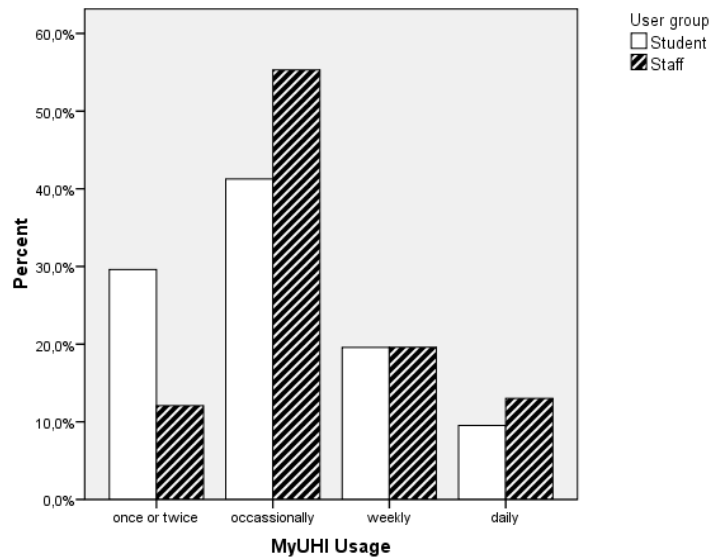
Figure 9: Student and staff MyUHI usage

Looking at the tools and applications students and staff have used through MyUHI there are again clear similarities. Table 4 summarizes the use of different tools and applications by students and staff: applications listed in the diagram of the table are used by similar percentages of staff and students. (Exact percentages on use are listed in Appendix 3).

Table 4. MyUHI Applications according to frequency of use by students and staff

staff	students		
	≤5%	≥6% ≤20%	>20%
≤5%	7-Zip, PCounter Balance, Touchpaper Helpdesk, MS Office InfoPath 2007, MS Office Project 2007, MS Office 2003 Frontpage, MS Office 2003 Picture Manager, MS Office 2003 Project, MS Office 2003 Publisher, MS Office 2003 Visio, Open Office 3 Base, Open Office 3 Calc, Open Office 3 Draw, Open Office 3 Impress, Open Office 3 Math, Open Office 3 Writer, Opera, GIMP, Pandion, and SPSSv14	Notepad	
≥6 % ≤20		Adobe Reader 8, Groupwise Messenger, MS Office Access 2007, MS Office Powerpoint 2007, MS Office Publisher 2007, MS Office 2007 documents, MS Office 2003 Access, MS Office 2003 Excel, MS Office 2003 PowerPoint, Firefox	
>20%	SITS	MS Office Excel 2007, MS Office 2003 Word	GroupWise 7, MS Office Word 2007, Blackboard, Internet Explorer, My Documents

4.3.4 Messenger

Messenger is the least used service by staff and the 'least but one' used service for students as became clear from Table 2: staff 20% use, students 17% use. Figure 10 shows that both students and staff most likely use the service on an occasional base (about 40%). Apart from that members of staff more often use Messenger on a daily base.
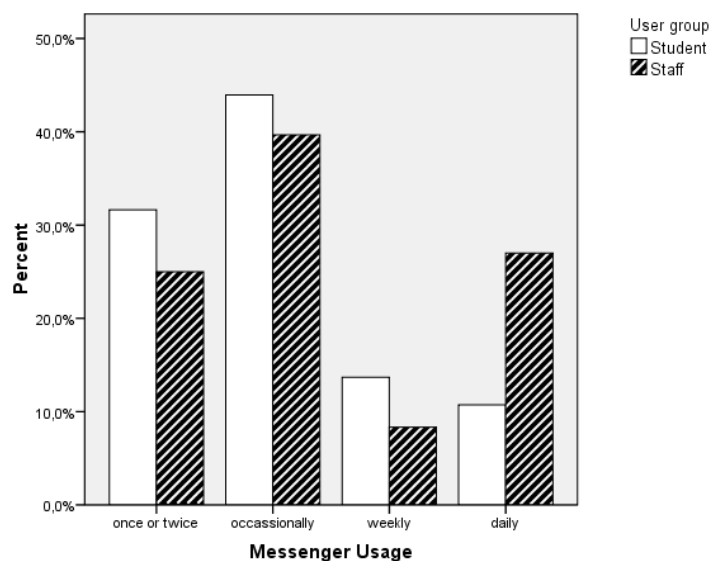
Figure 10: Student and staff Messenger usage

Figures 3 to 6 showed that the Messenger service scores relatively well on the usability items indicating ease of use, expectancy fulfilment and satisfaction. The more remarkable it seems that the service scores rather poorly, at least with staff, when it comes to the information and help provided with the service. Unfortunately we received few clues through the answers on the open ended question. Probably because of the general positive evaluation of

this service the opportunity to comment or provide suggestions for this service was not very often used:

Comments and suggestions on Messenger

A total of 25 comments and suggestions were made in connection with the Messenger service: 4 by students and 21 by staff. Two students explain they use other forms of communication through internet or by phone. One student tells us he or she finds it very useful, adding: "*Come to think of it, mine is broken at the moment. Must talk to IT support to get it fixed ...thanks for reminding me!*". One student expressed anxiety regarding use of the messenger service: "*When I use this service I do not even feel confident that I should receive a reply or that the recipient will receive it. However the IT department have always been very helpful in assisting me*".
Five members of staff comment on the fact that they have not seen any user guides or that some training or help would have been useful, but the majority (n=9) of staff comments concern reliability of the service, more particularly server connection, the fact that it 'kept crashing' and the fact that the search function often fails. One member of staff reports that the server address has changed several times and each time helpdesk had to be called: *'result now is that my colleagues don't use this service as much as they used to, and therefore neither do I".* Three members of staff comment on the fact that it is very hard to add contacts. Pre-population of users might help solve this as one user suggests. Other suggestions in terms of desired functionality are: file sharing (2) and video capacity (2).

Since some members of staff do indeed comment they have never seen any user guides, and since awareness rates of this service are very low for both students and staff, it seems that this may explain the poor evaluation of the information and help provided with this service: the fact that awareness/visibility of the service is poor.

All in all the results inevitably raise the question what added value UHI students and staff receive from the Messenger service when awareness is low and more software offering more extensive functionality (e.g. file sharing, video) is easily available via Internet.

4.3.5 UHI Communities

The UHI Communities Service is the service UHI students are least aware off: 61% of students report they do not recognise this service; 26% recognise the services but have not used it (Table 2). This leaves 13% who have used it, about half of whom have used it once or twice only as Figure 11 shows. Members of staff are more likely to have used the service (Table 2: 35%), but their usage does not differ much from the students who use this service.

Figures 3 to 6 made clear that of all services the UHI Communities service scores poorest on all usability issues - ease of use, expectation fulfilment, and satisfaction – in both user groups, though on average students evaluate the service more positively still than staff. The UHI Communities service also scores poorly when it comes to sufficiency of the information and help provided with the service.
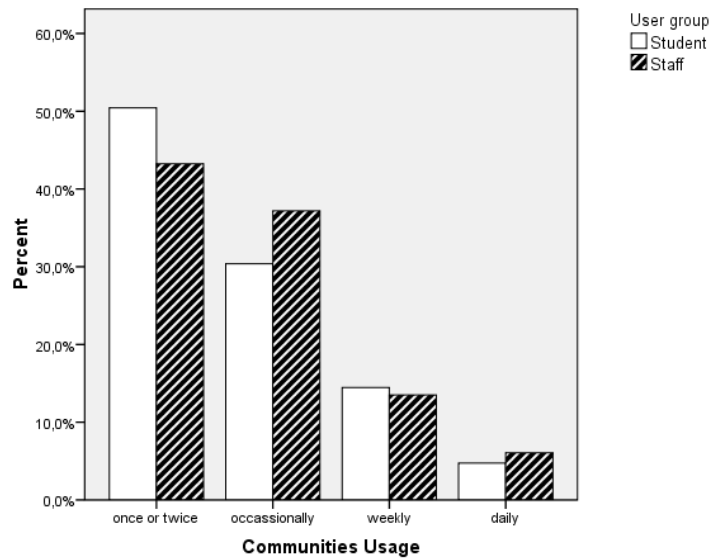
Figure 11: Student and staff Communities usage

4.3.6 Video Conferencing

Though students are considerably less likely to use the VC service than members of staff (Table 2: 19% students vs.71% staff), those who do use the service tend to do so on a more frequent base than staff as Figure 10 shows. About half of students (51%) use the service weekly, compared to 30% of staff, who are more likely to use the service occasionally (46%).
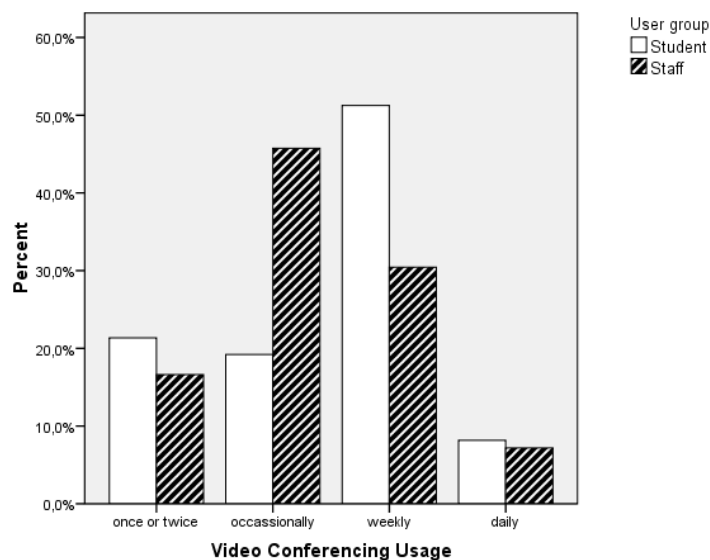
Figure 10: Student and staff Video Conferencing usage

Students and staff seem to be in remarkable agreement on all usability issues, and overall it can be said that compared to other services this service takes a middle position in terms of average scores on these issues.

In section 5.3.1 it was mentioned how usage and usability scores tend to positively relate: people who use a service more frequently are more likely to be positive about the usability issues, otherwise they would probably not have used it as frequently as they have. This holds at least for services which are readily available for use on a voluntary base. Although unsurprising this information is useful to keep in mind in any follow-up usability investigations on these services: infrequent users are probably more likely to identify usability issues. Typically Video Conferencing diverges from this general pattern: although there exist clear positive correlations with ease of use and sufficiency of the information provided with this service (respectively $r=.25$, $p<.01$ and $r=.17$, $p<.01$), it is not the case here that more frequent users are also more likely to agree that the service does everything they would expect it to do, or more satisfied using the service. So when it comes to identifying issues relating to ease of use, infrequent users are still more likely to identify usability issues, but only in this respect.

The only other service diverging from the general pattern of positive correlations between usage and usability scores is the UHI helpdesk service. Here too positive correlations exist between usage and ease of use ($r=19$, $p<.01$), but not with expectancy fulfilment, overall satisfaction, and sufficiency of the information and help provided. However, as will become clear in the next section, use of this service is more infrequent overall.

4.3.7 UHI Helpdesk

About half of the students at UHI (Table 2: 49%) know about the UHI Helpdesk Service without ever having used it. Considering what the service is about, the number of students who do not recognise this service seems rather high: 23% compared to 2% of staff. All in all it means that 28% have used the service, whereas for staff with 85% use the Helpdesk service is the second most used service after Email.

Not only are members of staff more likely to use the service, they also tend to use it more regularly than students, as Figure 11 shows.
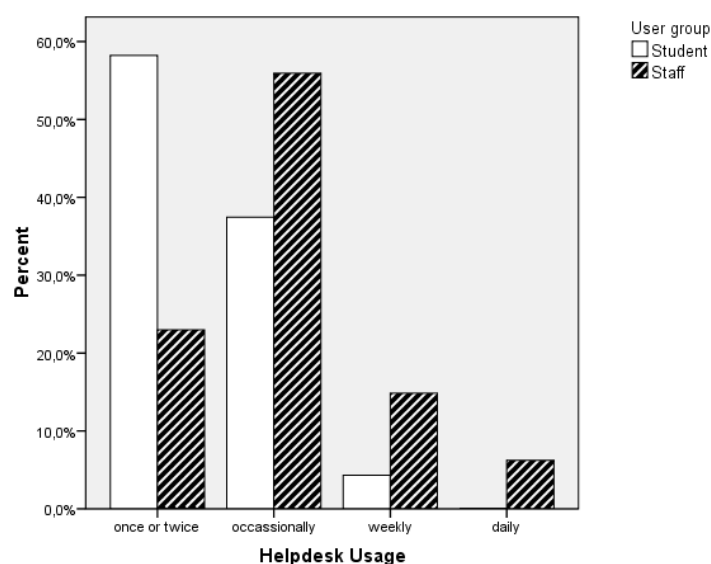
Figure 11: Student and staff Helpdesk usage

The Helpdesk Service is a 'top three' service in terms of usability scores for both students and staff, even if staff is significantly less positive (Figures 3 to 6). This does not mean that everyone is happy with the service provided, although quite a number of students and staff

have used the open ended question to acclaim the helpdesk service. Some comments make clear that respondents may not have distinguished between the UHI helpdesk Service and Partner College Helpdesks.

4.3.8 On-line Library

The UHI On-line Library service is not recognised by 25% of students and 17% of staff (see Table 2). Respectively 35% (students) and 36% (staff) recognise the service but have not used it. This means that 40% of students and 47% of staff have used the service. Figure 12 shows that within the group of users, students and staff are equally likely to use the service occasionally or weekly. Some (small) differences exist on the extremes: with staff being somewhat more likely to use the service on a daily base (15% of staff vs. 5% of students).
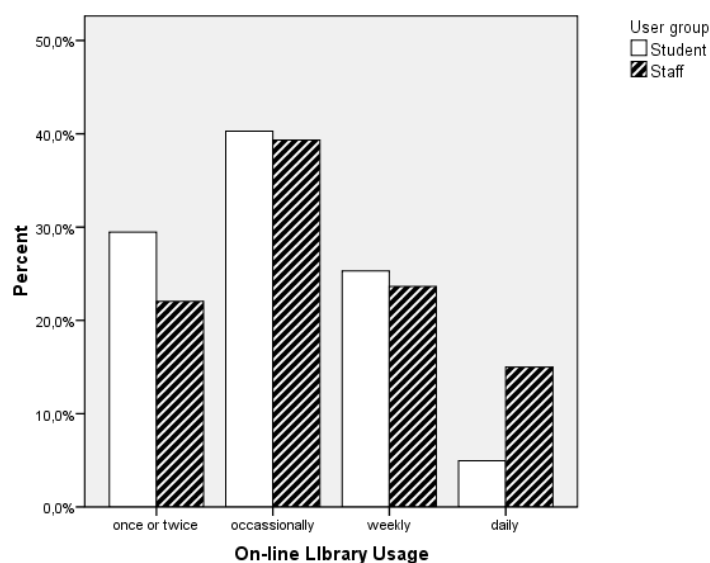
Figure 12: Student and staff On-line Library usage

As was explained in section 3 we took a different approach in the evaluation of the UHI Library service, since this service has a number of different aspects: Library Catalogue, E- journals, E-book collections, and Access external systems/digital repositories. Figure 13 shows to what extent the On-line Library users have used these different aspects.
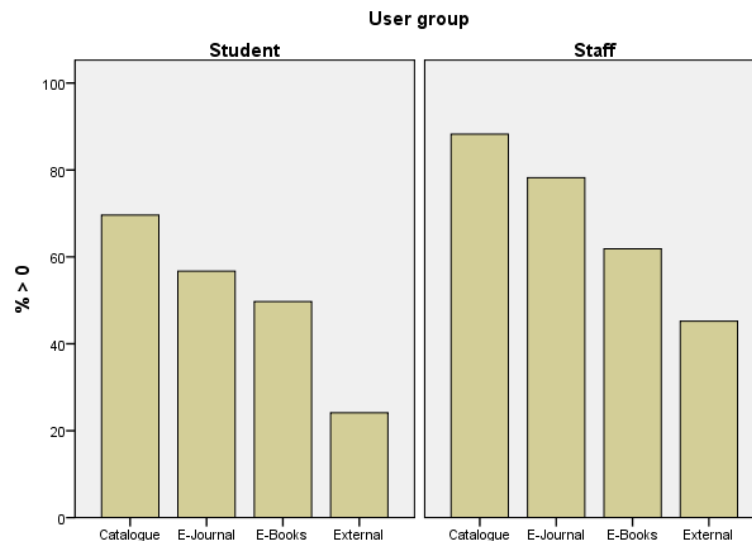
Figure 13: Student and staff On-line Library usage of different aspects

Both students and staff have used all aspects though in different numbers. Within the group of staff using the On-Line Library 88% has used the Library Catalogue compared to 70% within the group of the students using the On-line Library service. Figures slowly decline for E-journals (78% staff vs. 57% students), E-book collections (62% staff vs. 50% students), and Access external systems/digital repositories (45% staff vs. 24% students).

Figures 14a to 14d show for each of these aspects what percentage of users agree with the usability statements (e.g. Yes/No to "I find this aspect easy to use") rather than an average score on a scale as was the case with the other services. Interestingly student and staff evaluations are fairly consistent with staff being slightly more positive on all the issues. Concerning ease of use both students and members of staff are most positive about the on-line Catalogue (Figure 14a). The other three aspects have similar, somewhat lower scores.
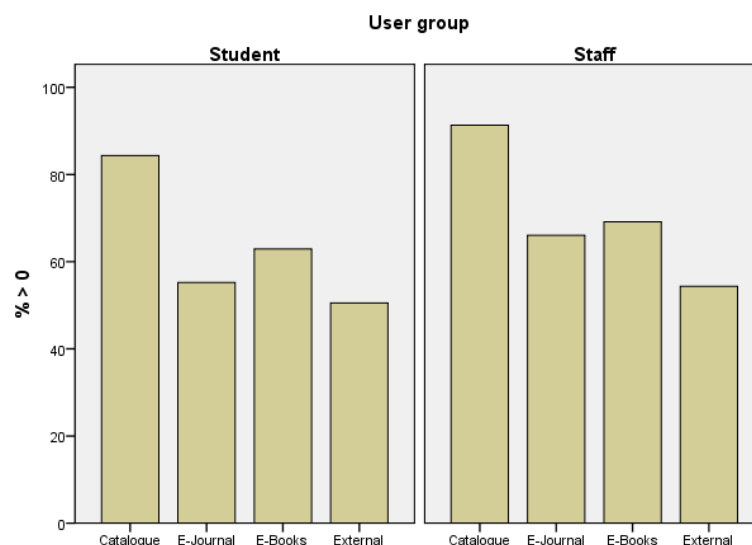
Figure 14a: Student and staff evaluation of ease of use of On-line Library aspects

Regarding the question whether the service does everything one would expect it to do, scores improve slightly for the E-journal (Figure 14b).
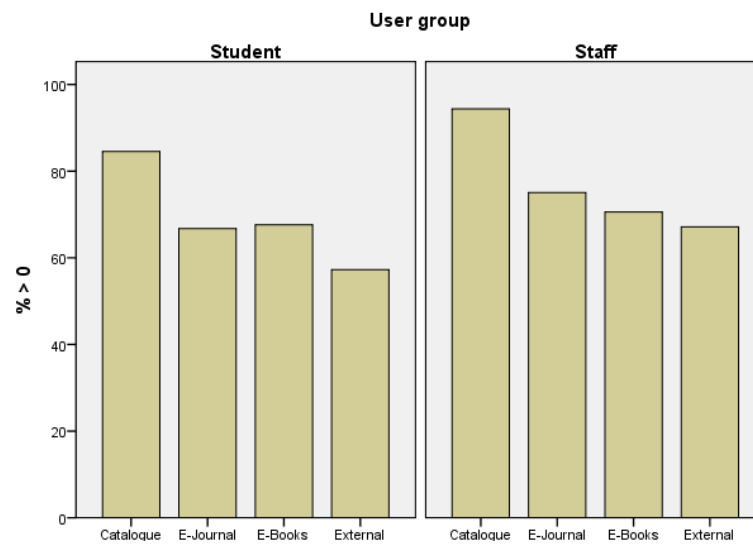
Figure 14b: Student and staff evaluation of expectancy fulfilment of On-line Library aspects

Over 80% of users (students and staff) are satisfied using the on-line Catalogue (Figure 14c). Regarding the other three aspects of UHI on-line Library around 60% of users is satisfied.
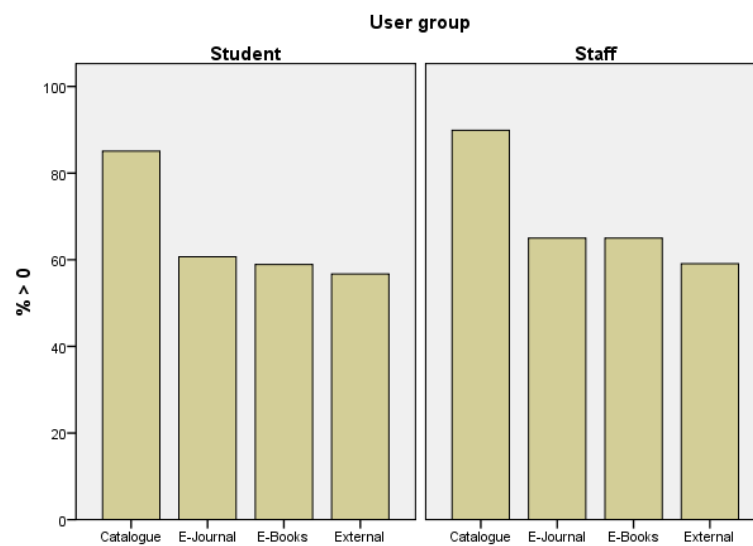
Figure 14c: Student and staff satisfaction with On-line Library aspects

Regarding the question whether the information and help provided with each of the on-line Library aspects are sufficient, scores are much similar to those on satisfaction regarding the different aspects.
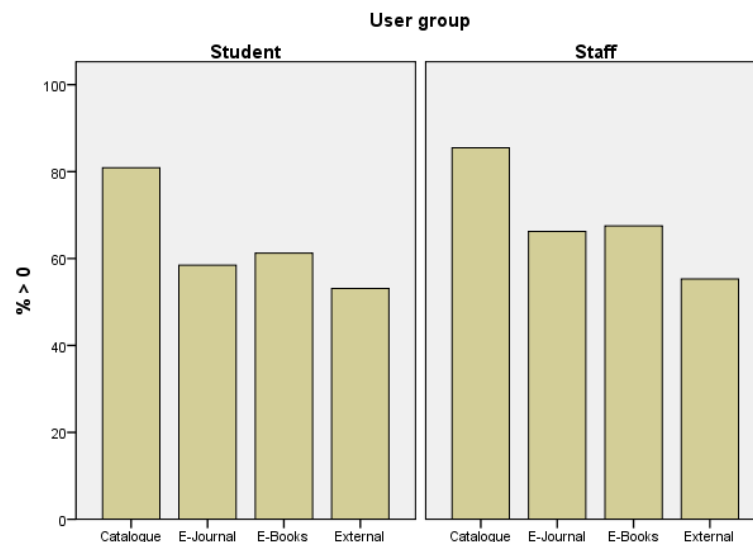
Figure 14d: Student and staff evaluation of information and help provided

4.4. Background services

Finally a number of services that operate more or less in the background and/or across the several distinctive services have been evaluated by asking users to what extent they are satisfied with the speed and reliability of the UHI website and services, the web filter, the network space (H: Drive) and the mailbox size of Email. Figure 15 lists the average scores for students and staff (mean scores of answers ranging from -2 Very dissatisfied to 2 Very satisfied).
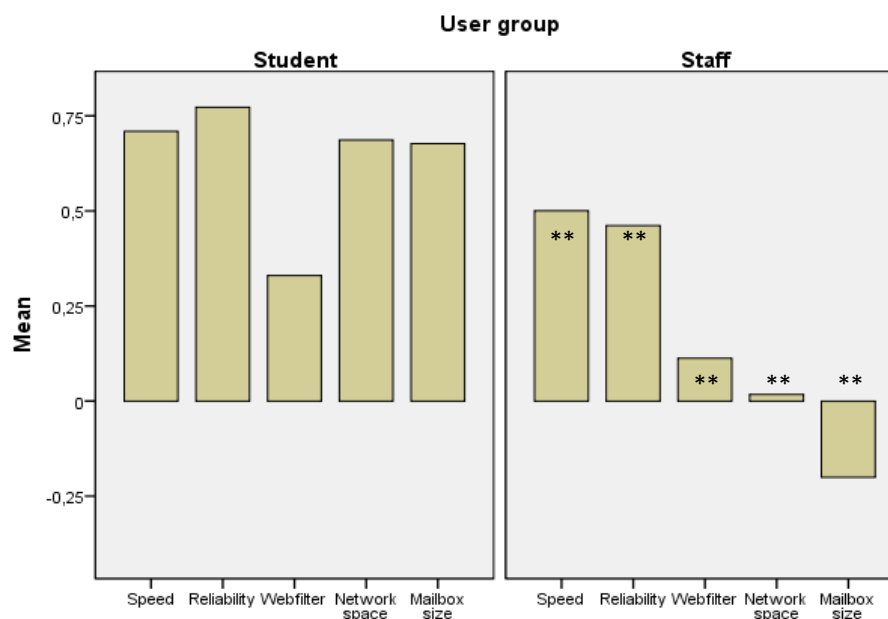
Figure 15: Student and staff satisfaction with various aspects of the UHI website and services

Regarding the background services members of staff are significantly less satisfied than students, most notably so regarding the Network space and Mailbox size. On average students are equally satisfied with most of these aspects: Speed, Reliability, Network Space and Mailbox size. The exception to this is the web filter which students and staff are less satisfied with. Table 3 gives the percentages dissatisfied to very dissatisfied users for each aspect.

Table 3. Percentage of users dissatisfied to very dissatisfied with various aspects.

	User group	
	Students	Staff
Speed	12	19
Reliability	8	17
Web filter	14	20
Network space	7	34
Mailbox size	9	46

It will be interesting to see in the more detailed follow up reports to what extent these satisfaction levels vary across different groups of staff, partner colleges, faculties etc.

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Appendix 1: Usability Survey Questionnaire

On-line Questionnaire

Introduction

Thank you for taking part in the evaluation of the UHI website and services.

This survey will address those services provided by UHI and through the UHI website which are available to UHI students and staff alike, such as Email, UHI Communities, Virtual Learning Environment, and MyUHI.

The fact that these services are available however does not mean that they are used or even known by everyone. One of the aims of this survey is exactly to establish their visibility. So, don't worry if you do not recognise some of the services included in this survey, you will be able to indicate this while filling out the questionnaire.

This questionnaire is part of the SDB IT Usability Project run by UHI Millennium Institute in association with the Open University of the Netherlands. The Project is funded with assistance from the European Union Regional Development Fund (ERDF).

Questions

Before we take a look at the different services please give a general indication of your confidence in using the UHI website and services.

1. I am confident I know my way around the UHI website and services.

   Strongly disagree   1   2   3   4   5   Strongly agree

2. To what extent did the following sources contribute to your confidence in using the UHI website and services? (Select N/A if you have not used the source).

	N/A	No contribution	Small contribution	Important contribution
Induction programme				
User guides				
Helpdesk				
Lecturer				
Fellow students				
Colleagues				
Friend/family				

If any other sources contributed to your confidence in this, please specify them ………………………..

We would like to know about your experiences with a number of services.
Please indicate how familiar you are with each of the services presented.
If you have used a service, you will be asked about your experiences in a follow-up question.

3. How familiar are you with Email (Groupwise)?

a. I do not recognise this service	-> 6
b. I recognise the service but have not used it	-> 6
c. I have used the service once or twice only	-> 4
d. I use this service occasionally	-> 4
e. I use this service weekly	-> 4
f. I use this service daily	-> 4

4. How do you access the Email service mainly?

a. Using the web browser
b. Using the Groupwise client software
c. I don't know

5. To what extent do you agree or disagree with the following statements concerning the Email service?

Strongly disagree   1 2 3 4 5 Strongly agree

a.   I find this service easy to use
b.   The service does everything I would expect it to do
c.   I am satisfied with this service
d.   The information and help concerning the use of this
      service is sufficient

Please use the text box below for any comments or suggestions you may have regarding this service.

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6. How familiar are you with the Virtual Learning Environment (= VLE/Blackboard) service?

Usage of the Virtual Learning Environment may vary greatly depending on the actual course you are dealing with, but please answer this question according to the most frequent use you have experienced.

a. I do not recognise this service	-> 8
b. I recognise the service but have not used it	-> 8
c. I have used the service once or twice only	-> 7
d. I use this service occasionally	-> 7
e. I use this service weekly	-> 7
f. I use this service daily	-> 7

7. To what extent do you agree or disagree with the following statements concerning the Virtual Learning Environment (= VLE/Blackboard) service?

Strongly disagree   1 2 3 4 5 Strongly agree

a. I find this service easy to use
b. The service does everything I would expect it to do
c. I am satisfied with this service
d. The information and help concerning the use of this
     service is sufficient

Please use the text box below for any comments or suggestions you may have regarding this service.

8. How familiar are you with the MyUHI service?

a. I do not recognise this service	-> 11
b. I recognise the service but have not used it	-> 11
c. I have used the service once or twice only	-> 9
d. I use this service occasionally	-> 9
e. I use this service weekly	-> 9
f. I use this service daily	-> 9

9. The MyUHI service gives access to a number of tools and applications. Which of these tools and applications have you used <u>through MyUHI</u>?

7-Zip	MSOffice 2003 Project
Notepad	MSOffice 2003 Publisher
PCounter Balance	MSOffice 2003 Visio
Touchpaper Helpdesk	MSOffice 2003 Word
Adobe Reader 8	Open Office 3 Base
GroupWise 7	Open Office 3 Calc
GroupWise Messenger	Open Office 3 Draw
MS Office Access 2007	Open Office 3 Impress
MS Office Excel 2007	Open Office 3 Math
MS Office InfoPath 2007	Open Office 3 Writer
MS Office Powerpoint 2007	SITS
MS Office Project 2007	Blackboard
MS Office Publisher 2007	Firefox
MS Office Word 2007	Internet Explorer
MS Office 2007 documents	Opera
MSOffice 2003 Access	GIMP
MSOffice 2003 Excel	Pandion
MSOffice 2003 Frontpage	SPSSv14
MSOffice 2003 Picture Manager	Wimba Create
MSOffice 2003 Powerpoint	My Documents
	Aptos (Finance System)

Other tools and applications (please specify)

10. To what extent do you agree or disagree with the following statements concerning the MyUHI service?

Strongly disagree   1 2 3 4 5 Strongly agree

a. I find this service easy to use
b. The service does everything I would expect it to do
c. I am satisfied with this service
d. The information and help concerning the use of this service is sufficient

Please use the text box below for any comments or suggestions you may have regarding this service.

11. How familiar are you with the UHI Messenger service?

    a. I do not recognise this service   -> 13
    b. I recognise the service but have not used it   -> 13
    c. I have used the service once or twice only   -> 12
    d. I use this service occasionally   -> 12
    e. I use this service weekly   -> 12
    f. I use this service daily   -> 12

12. To what extent do you agree or disagree with the following statements concerning the UHI Messenger service?

                                              Strongly disagree 1 2 3 4 5 Strongly agree

    a. I find this service easy to use
    b. The service does everything I would expect it to do
    c. I am satisfied with this service
    d. The information and help concerning the use of this
       service is sufficient

Please use the text box below for any comments or suggestions you may have regarding this service.

13. How familiar are you with the UHI Communities service?

    a. I do not recognise this service   -> 15
    b. I recognise the service but have not used it   -> 15
    c. I have used the service once or twice only   -> 14
    d. I use this service occasionally   -> 14
    e. I use this service weekly   -> 14
    f. I use this service daily   -> 14

14. To what extent do you agree or disagree with the following statements concerning the UHI Communities service?

                                              Strongly disagree 1 2 3 4 5 Strongly agree

    a.   I find this service easy to use
    b. The service does everything I would expect it to do
    c.   I am satisfied with this service
    d. The information and help concerning the use of this
       service is sufficient

Please use the text box below for any comments or suggestions you may have regarding this service.

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15. How familiar are you with the UHI on-line Library service?

   a. I do not recognise this service   -> 18
   b. I recognise the service but have not used it   -> 18
   c. I have used the service once or twice only   -> 16
   d. I use this service occasionally   -> 16
   e. I use this service weekly   -> 16
   f. I use this service daily   -> 16

16. Please indicate for each of the following aspects of the UHI on-line Library service:

   a. whether you have used it (Use?)
   b. whether you find it easy to use (Easy?)
   c. whether it offers what you would expect (As expected?)
   d. whether you are satisfied using this aspect of the service (Satisfied?)
   e. whether the information and help concerning the use of this aspect is sufficient (Sufficient information/help?)

	Use	Easy	As expected	Satisfied	Sufficient information/help
Library Catalogue	Y/N	Y/N	Y/N	Y/N	Y/N
E- journals					
E-book collections					
Access external systems/ digital repositories					

Please use the text box below for any comments or suggestions you may have regarding this service.

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17. How familiar are you with the UHI Video Conferencing service?

    a. I do not recognise this service   -> 20
    b. I recognise the service but have not used it   -> 20
    c. I have used the service once or twice only   -> 18
    d. I use this service occasionally   -> 18
    e. I use this service weekly   -> 18
    f. I use this service daily   -> 18

18. From which location do you mainly use the UHI Video Conferencing Service?

    a. College campus
    b. Learning centre
    c. Home

19. To what extent do you agree or disagree with the following statements concerning the Video Conferencing service?

                                             Strongly disagree   1 2 3 4 5 Strongly agree
    a. I find this service easy to use
    b. The service does everything I would expect it to do
    c. I am satisfied with this service
    d. The information and help concerning the use of this
        service is sufficient

Please use the text box below for any comments or suggestions you may have regarding this service.

20. How familiar are you with the UHI Helpdesk service?

    a. I do not recognise this service   -> 22
    b. I recognise the service but have not used it   -> 22
    c. I have used the service once or twice only   -> 21
    d. I use this service occasionally   -> 21
    e. I use this service weekly   -> 21
    f. I use this service daily   -> 21

21. To what extent do you agree or disagree with the following statements concerning the UHI Helpdesk service?

Strongly disagree   1 2 3 4 5 Strongly agree

a. I find this service easy to use
b. The service does everything I would expect it to do
c. I am satisfied with this service
d. The information and help concerning the use of this
    service is sufficient

Please use the text box below for any comments or suggestions you may have regarding this service.

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22. When working from a college or learning centre, would you say that overall you are satisfied or dissatisfied with the following aspects of the UHI website and services?

Very dissatisfied   1 2 3 4 5 Very satisfied

a. Speed
b. Reliability
c. Web filter (see picture)

The following image is a screen shot from a computer showing the UHI Web Filter notice.

UHI WARNING

The site you are trying to access breaches UHI / JANET acceptable use policies.

This attempt to access a forbidden site has been logged.

If you believe that this site should not be blocked or that you require legitimate access please contact the I.C.T. Help Desk appropriate to your site.
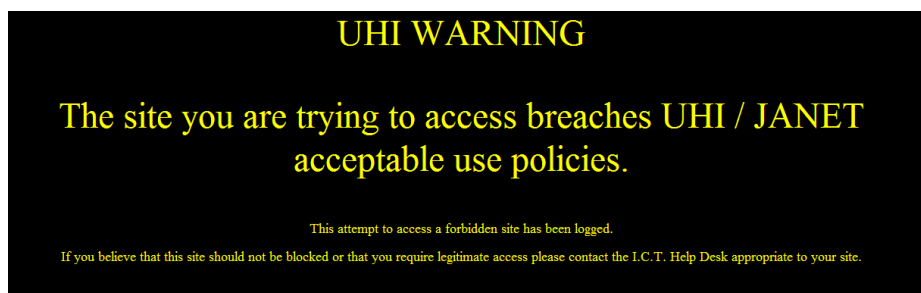
23. Would you say that overall you are satisfied or dissatisfied with the Network Space and Mailbox size of Email?

Very dissatisfied   1 2 3 4 5 Very satisfied

a. Network Space (H: Drive)
b. Mailbox size Email

As experiences with Learning and Information services may vary according to different user groups, we ask you to provide some information about yourself. If you are a student you will be asked to provide your student ID, so that more general information (e.g. age, gender, faculty etc.) can be derived from the student records system.

24. Please indicate whether you are a UHI student or member of staff.
    (If both, select 'Member of staff').

    a. UHI student   -> 25
    b. Member of staff   -> 30

25. Student ID   [   ]

26. Please provide a ranking for all locations you may be studying from: college campus, learning centre, and home/office.

    0 = I do not study from this location
    1 = main location of study
    2= second location of study
    3= third location of study

    College campus   [   ]
    Learning centre   [   ]
    Home/office   [   ]

27. If you do study from a College campus, please indicate which College(s) you study from in the table below.

	Location of study
Argyll College UHI	[ ]
Highland Theological College	[ ]
Etc.	

    If you use a Learning Centre as a study location, please provide the name of the Learning centre(s) below:

    [   ]

28. On average how many hours do you spend studying weekly, including taught hours?

Number of hours

29. At UHI, some courses are delivered entirely face-to-face with students and lecturer in the same room. Other courses are delivered entirely by on-line or distance learning, using technology such as Blackboard and video conferencing. Some courses are delivered in a mixture of ways, with some face-to-face and some on-line or distance learning.

Please tick which of the following describes the typical mode of delivery for your course(s):

a. All face-to-face -> GO TO Q. 37
b. All on-line or distance learning, using technology -> TO Q. 37
c. Some face-to-face and some on-line or distance learning, using technology -> TO Q. 37

STAFF ONLY:

30. Please enter the following information:

Gender: (select)

Age:

31. What is your (main) job/function?

a. Administrator
b. External lecturer
c. Lecturer
d. Manager
e. Support officer
f. Researcher

32. Number of years in current function:

a.   less than a year
b.   between one and five years
c.   between five and ten years
d.   more than ten years

33. Currently employed:

   a. Part-time
   b. Fulltime

34. My job is related to:

   a. Higher Education
   b. Further Education
   c. Both
   d. Neither

35. Faculty:

   a. Arts, Humanities and Social Sciences
   b. Business and Leisure
   c. Health
   d. Science and Technology
   e. None

36. Registered at:

   a. Argyll College UHI
   b. Highland Theological College UHI
   c. Inverness College UHI
   d. Lews Castle College UHI
   e. Lochaber College UHI
   f. Moray College UHI
   g. NAFC Marine Centre UHI
   h. North Highland College UHI
   i. Orkney College UHI
   j. Perth College UHI
   k. Sabhal Mòr Ostaig UHI
   l. Scottish Association for Marine Science UHI
   m. Shetland College UHI
   n. Executive Office
   o. None

37.   Thank you for your contribution.

Appendix 2: Non-response analysis

Staff representation pre- and post-weighing

Table 1: Staff representation by Partner College

	N Population	n Survey	response
Argyll College UHI	152	16	11%
Highland Theological College UHI	85	8	9%
Inverness College UHI	1000	33	3%
Lews Castle College UHI	213	34	16%
Lochaber College UHI	69	1	1%
Moray College UHI	500	75	15%
NAFC Marine Centre UHI	104	6	6%
North Highland College UHI	500	37	7%
Orkney College UHI	105	23	22%
Perth College UHI	900	64	7%
Sabhal Mòr Ostaig UHI	223	20	9%
Scottish Association for Marine Science UHI	248	12	5%
Shetland College UHI	100	24	24%
Executive Office	200	69	35%
None		4	
	N=4399	n=426	10%

Since response for some Partner Colleges was extremely low, weighing was carried out after grouping of Partner Colleges according to size, keeping Executive Office apart.

Table 2: Staff representation pre- and post-weighing

	% Population	% Survey	
		Pre	Post
< 450 members of staff	29	26	24
450 - 750 members of staff	23	34	30
> 750 members of staff	43	23	41
Executive Office	5	16	5
Total	N=4399	n=422	n=473

Student representation pre- and post-weighing

A total of 450 students responded to the on-line questionnaire, but not all of them provided (correct) Student ID's so that no match could be made with the UHI student record data to provide available background information. Numbers in the tables below are therefore smaller. Based on the total of 450 students response is about 3%. Taking into account only the number of students who provided a matching ID response is about 2%.

Note that weighing was carried out solely on the basis of study context in order to compensate for the under representation of FE students. However this has affected the percentages / representation on other variables as well, e.g. the proportion of male students has increased. Tables show results for Partner College, Gender, Age, Study context, Mode of attendance, and Advancement.

Table 3: Partner College

	% Population	% Survey	
		Pre	Post
Argyll College UHI	1	2	0.3
Highland Theological College UHI	0.7	6	3
Inverness College UHI	13	19	11
Lews Castle College UHI	4	9	5
Lochaber College UHI	0.6	1	0.3
Moray College UHI	30	25	38
NAFC Marine Centre UHI	0.1	0	0
North Highland College UHI	6	5	3
Orkney College UHI	2	5	3
Perth College UHI	38	16	26
Sabhal Mòr Ostaig UHI	1	4	5
Scottish Association for Marine Science UHI	0.2	1	0.3
Shetland College UHI	2	6	6
Executive Office	2	0.3	0
	N=13521	n=301	n=291

Table 4: Gender

	% Population	% Survey	
		Pre	Post
Female	55	65	59
Male	45	35	40
	N=13430	n=298	n=288

Table 5: Age

	% Population	% Survey	
		Pre	Post
18 years or younger	29	14	28
19 to 20 years	12	12	11
21 to 24 years	12	12	12
25 to 29 years	9	8	7
30 to 54 years	31	47	36
55 to 74 years	7	7	6
75 years or older	0.4	0	0
	N=13492	n=301	n=292

Table 6: Study Context

	% Population	% Survey	
		Pre	Post
Higher Education:			
HNC	19	17	17
HND	8	10	11
Degree	11	44	11
Post-graduate Degree	6	5	5
Other Post-graduate qualification	2	0.3	0.3
Other qualification	7	8	9
Further Education	47	16	47
	N=13521	n=301	n=291

Table 7: Mode of attendance

	% Population	% Survey	
		Pre	Post
Full time	46	67	67
Part-time	54	33	33
	N=13521	n=301	n=292

Table 8: Advancement

	% Population	% Survey	
		Pre	Post
Advancing student	27	33	20
New student	33	26	37
Returning student	40	41	43
	N=13521	n=301	n=291

Appendix 3: Use of MyUHI applications

Applications used by MyUHI users - students (N=237) and staff (N=317)

Application	Students (%)	Staff (%)
7-Zip	0,8	0,3
Notepad	7	4
PCounter Balance	0,8	0,3
Touchpaper Helpdesk	0,8	3
Adobe Reader 8	8	14
GroupWise 7	43	70
GroupWise Messenger	17	19
MS Office Access 2007	7	11
MS Office Excel 2007	10	22
MS Office InfoPath 2007	1	0,9
MS Office Powerpoint 2007	12	20
MS Office Project 2007	3	3
MS Office Publisher 2007	6	6
MS Office Word 2007	27	41
MS Office 2007 documents	11	16
MSOffice 2003 Access	9	9
MSOffice 2003 Excel	13	20
MSOffice 2003 Frontpage	3	0,9
MSOffice 2003 Picture Manager	2	2
MSOffice 2003 Powerpoint	11	14
MSOffice 2003 Project	4	2
MSOffice 2003 Publisher	5	3
MSOffice 2003 Visio	2	4
MSOffice 2003 Word	19	24
Open Office 3 Base	0,4	0,3

Open Office 3 Calc	1	0,9
Open Office 3 Draw	3	1
Open Office 3 Impress	0,8	0,3
Open Office 3 Math	0,4	0,6
Open Office 3 Writer	2	2
SITS	2	23
Blackboard	47	24
Firefox	12	13
Internet Explorer	25	30
Opera	2	0,9
GIMP	3	3
Pandion	0	0,6
SPSSv14	5	5
Wimba Create	0	7
My Documents	42	65
Aptos (Finance System)	0,4	7
Total	n=237	n=317