eSTEeM Final Report

Qualification Study Websites: Uptake and Practice

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Executive Summary

This project sought to understand how the subject sites are being used and how they are perceived by students. The project took the approach of looking at all of the undergraduate subject sites in STEM. These sites vary in scale, some of them serve a single qualification, others serve a range of qualifications related by subject interest, hence, for the purposes of this report and to avoid ambiguity the sites are referred to as 'subject sites' although they are commonly referred to as 'study sites' and occasionally as 'qualification sites'. The sites were developed to support the shifting focus from module to qualification and this study was conducted to discover how successful this has been. The study used four different modes of investigation, data analysis of the overall use of module sites, an analysis of forum usage to gauge student engagement, a student survey to gain quantitative and qualitative information about student use, and perceptions and interviews with colleagues.

The study found that usage of sites and awareness of their existence differs between subjects, with some having far greater student engagement than others. The Mathematics and Statistics site stands out as an exemplar of good practice which manages to engage students with module resources before and between study periods. However, even the best used subject site attracts less than half of the students linked to it, with several sites attracting less than twenty percent of students. The study found that students found accessing the sites difficult and views were expressed that they should have greater visibility, another point identified as a reason sites are not used frequently, is a lack of time and integration with the main module study materials. The study concludes that the full potential of sites to support the student journey has yet to be realised and makes a number of recommendations about the use of the sites and their availability to registrants and also to students not registered for qualifications. It is hoped that the learning from this project will be of interest and use to all those involved with the creation of subject sites and the design of the students' virtual learning environment.

Introduction

In the past decade the university has shifted from a focus on modules to a focus on qualifications, however this has been a gradual process with many internal systems still geared towards the support of modules. However, in 2018 the university created sites for qualifications to complement the module sites that all students are familiar with as a key part of their learning experience. The newly created sites replaced the Qualifications Online Sites which had been instigated a few years earlier, but which had received a critical reception. In the creation of these new sites many academic teams opted to create sites to support a range of qualifications related by subject, whilst others chose to create sites which were linked to a particular set of nested qualifications. The new sites were welcomed by many as an opportunity to gather information together that is useful throughout the student journey and as a space in which to offer module and career planning advice. Importantly though, the sites offered the opportunity to create spaces and engagements which might support student retention and progression, through the development of communities of learning and practice (Wenger 1998) across all stages of study.

The subject sites, as they will be referred to throughout this study, have each been developed by the relevant qualification teams to meet the perceived needs of students in that subject area. Whilst they have the same top-level structure, each of the top-level tabs (Study Home, Connect, Discover, Skills, Plan, Succeed) leads to a set of sub-pages which are unique to the site and determined by the academic team. The Study Home page of each site pulls in information from the student's record allowing access to their current and past modules and showing any future module registrations. Links from the student dashboard are also brought into this space as will be seen in the discussion

that follows. The subject sites also pull in related OpenLearn content and can be configured to include feeds from social media. The sites thus potentially become a hub for students throughout their studies. This study sought to examine whether the potential of the sites is being realised using a combination of research approaches.

Aims and scope of the project

This eSTEeM project sought to look at the efficacy of Study Websites across the STEM faculty. The impetus for this work was the author's own experience of a qualification study website which, despite a large amount of effort having been put into its creation, did not, if gauged by student engagement with forums, appear to be reaching the people for whom it was designed. The project looked at the following Subject sites in STEM:
Combined Stem
Computing and IT
Design and Innovation
Engineering
Environment
Mathematics and Statistics
Physics, Astronomy and Planetary Science

Of these, two sites, Combined STEM and Design and Innovation each support a single qualification, the rest support students on a range of qualifications within that subject area. The project set out to examine student use of the sites and attitudes towards them.

Students registered for a qualification are automatically linked to the related subject site and, from that site, are able to browse all other subject sites. However, students who register for a stand-alone module are not linked to a site and there is no clear path for them to access a subject site unless they follow a direct link.

Activities

The overall approach to this study was to evaluate usage using both quantitative and qualitative approaches. Four different activities were carried out as part of this study. Firstly, an examination of general data about levels of activity on the Subject sites. Secondly, an analysis of Subject site forums to gauge levels of activity. Thirdly, a survey of students to gain further data about student use and perceptions of Subject sites. Finally, interviews were conducted with colleagues running successful Subject sites and the examination of relevant reports. Difficulties in accessing specific (as opposed to general) data about the use of different aspects of each site led to the analysis of site forums as an indicator of direct student engagement with the sites.

Main findings

Data analytics

Data was obtained on the number of views for each Subject site for every week between August 2018 and August 2019. The data show the overall number of unique visits to the site. The data reveals use of the site peaking at slightly different times for different subject sites. Peaks are seen at the beginning of the academic year between September and November with the main cluster being around module start time. The earliest peak is seen on the Maths and Stats site, which is most likely due to the preparatory materials which are promoted on the site to registered students, in a variety of ways, to encourage take-up. However, use of all of the subject sites declines to the nadir, which, unsurprisingly is found around the Christmas holiday. For almost all sites, use picks up in January and

maintains a fairly steady state with slight peaks seen around module choice time between March and May. Another peak is seen around July, at the end of the J presentation.

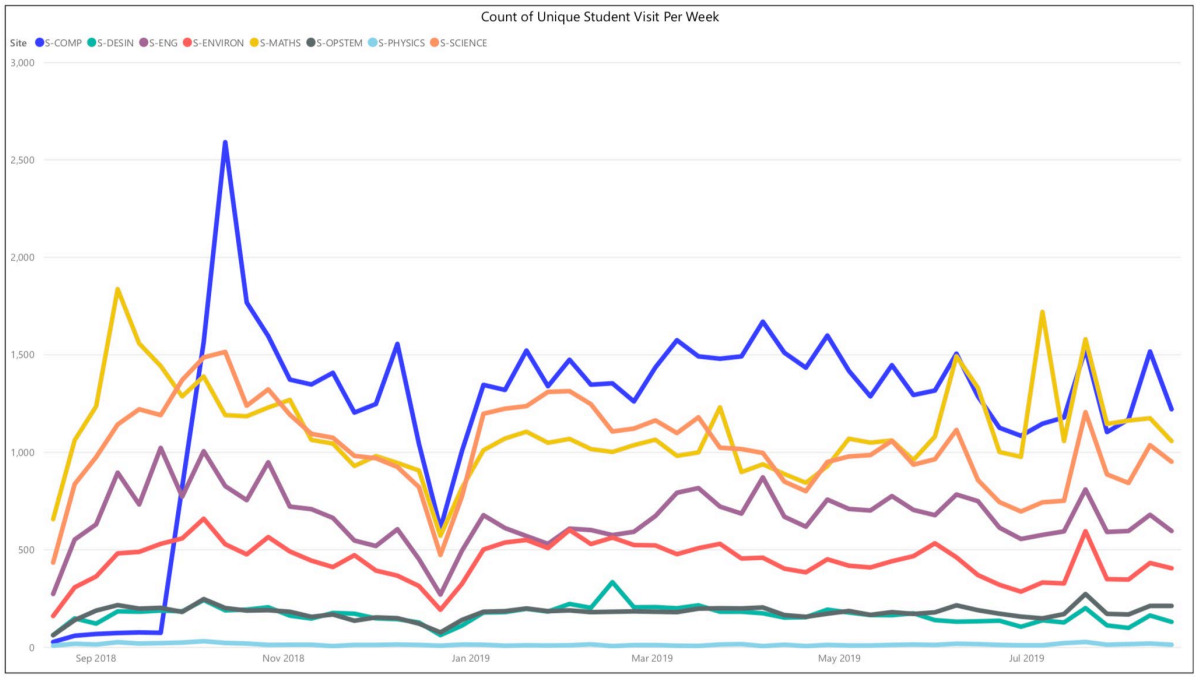
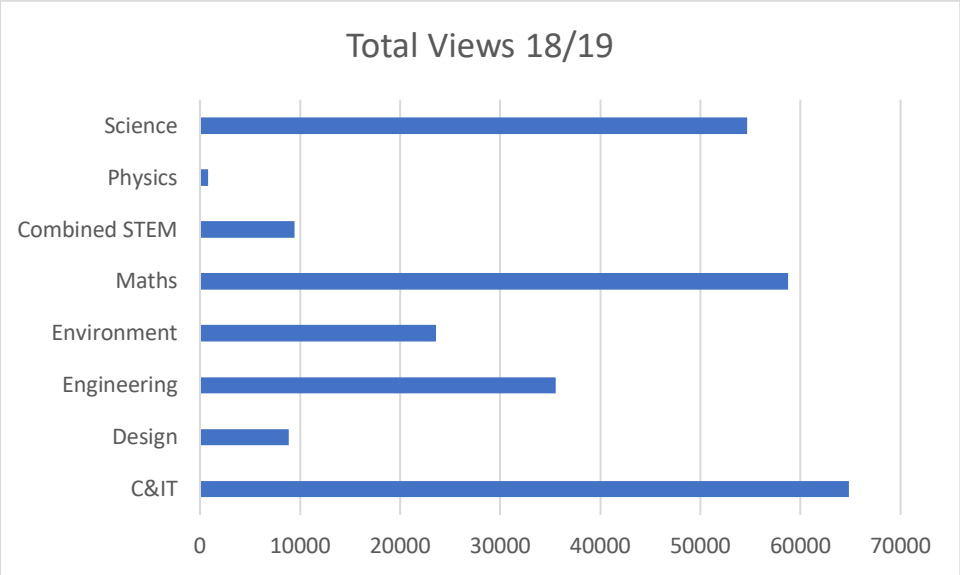


Figure 1: Activity on Subject sites August 2018 to August 2019

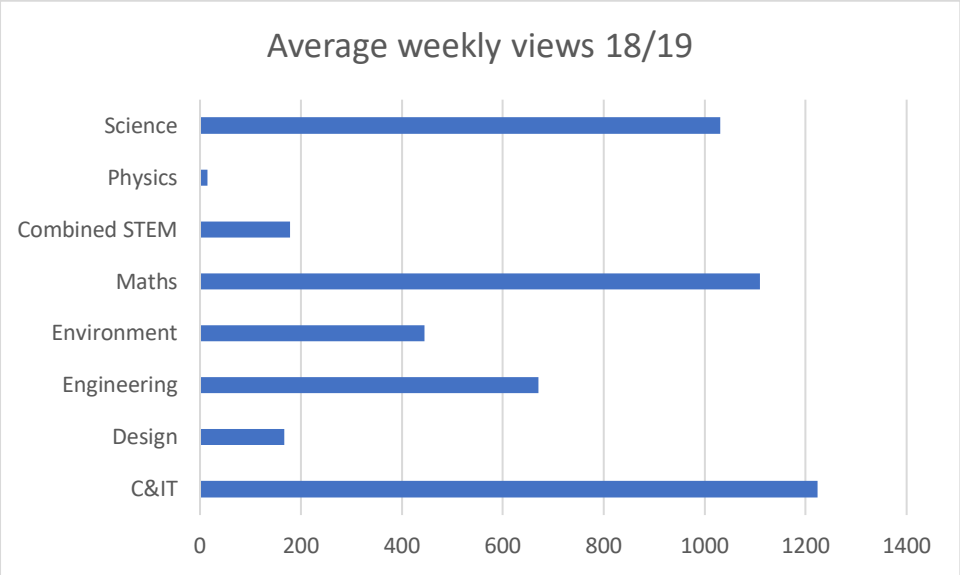
Analysis of the total number of views for each Subject site over the period in question (18/19) shows that these range from less than 1000 views for the S-Physics to more than 64 thousand for Computing and IT.



Total number of Views	
C&IT	64812
Maths	58772
Science	54652
Engineering	35515
Environment	23569
Comb. STEM	9458
Design	8854
Physics	786

Chart 1: Total number of views per Subject site 18/19

The average number of total weekly views spread over the year ranges from 15 for Physics to over 1000 for Computing and IT



Average weekly Views	
C&IT	1223
Maths	1109
Science	1031
Engineering	670
Environment	445
Comb. STEM	178
Design	167
Physics	15

Chart 2: Average weekly views 18/19

Figure 2 shows the same data normalised, dividing the number of views of each Subject site by the number of students registered to modules linked to the related qualifications. This paints a slightly different picture of use. Viewed through the lens of normalisation the Maths & Stats subject site is seen to be the most successful in terms of views per registered student, attracting views from nearly half of the potential site users, Science and Environment attracts, on average, around a third of students. Engineering, Design and Computing, have visits from only around a sixth of potential students. This is an interesting statistic for the Computing and IT site which, in overall numbers of views, appeared to be the most successful. Combined STEM is lower still at around a tenth of students and numbers for Physics are too low to be counted.

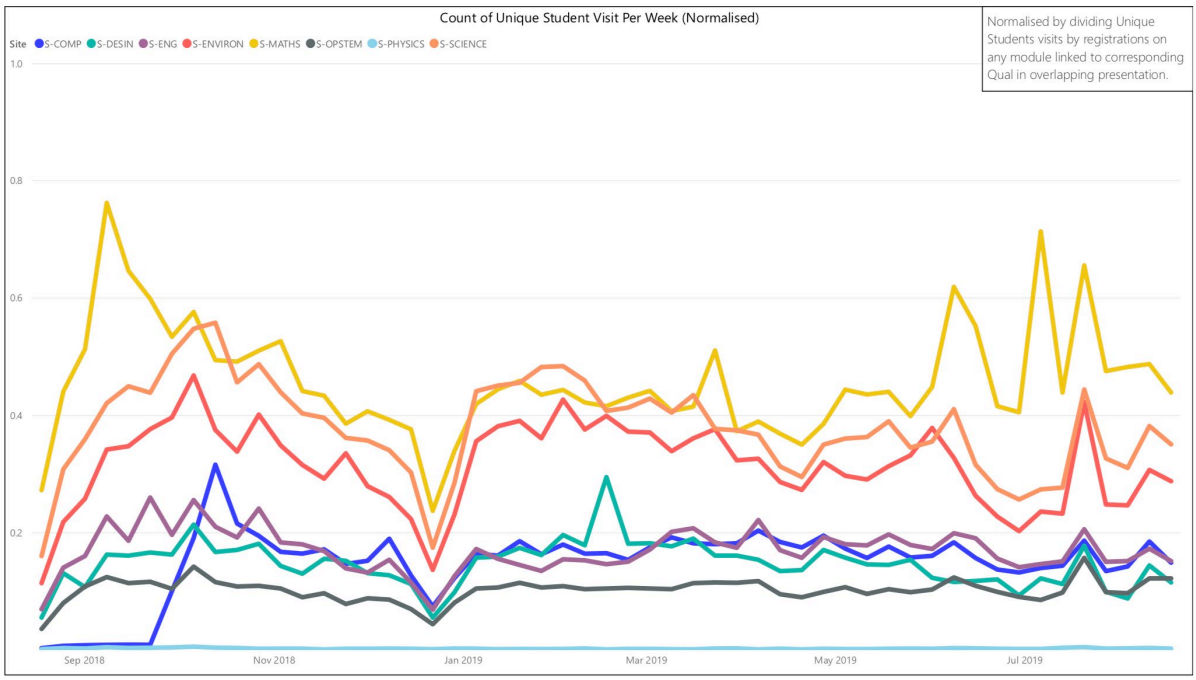
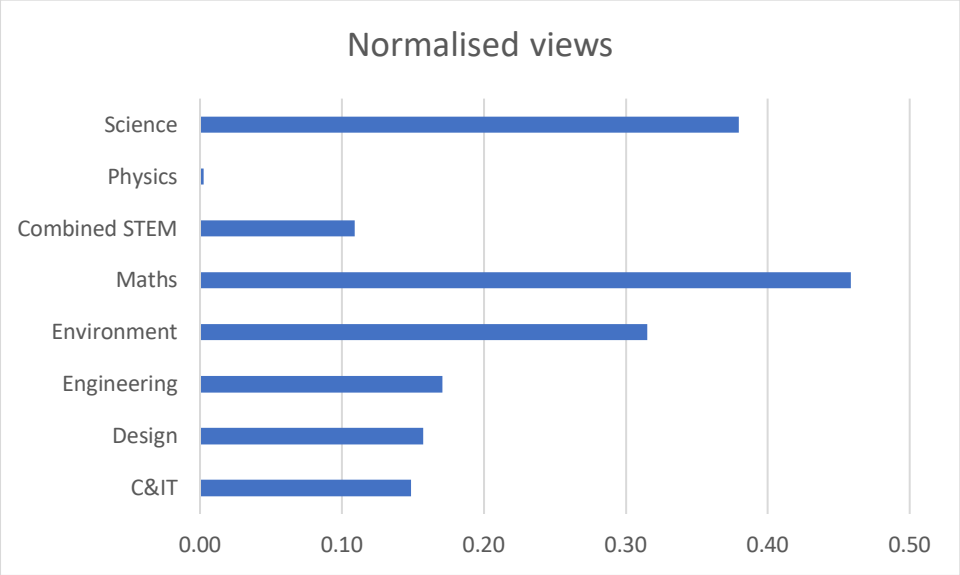


Figure 2: Activity on subject site normalised by number of active students relative to the number of students linked to the subject site.



Average of normalised views	
Maths	0.46
Science	0.38
Environment	0.32
Engineering	0.17
Design	0.16
C&IT	0.15
Comb. STEM	0.11
Physics	0

Chart 3 Normalised views for each subject site

Use of Subject site Forums

In the second phase of the study an analysis of the use of STEM undergraduate Subject site forums was carried out. This analysis looked at the number of threads and posts in two academic years running from September to the end of August. The number of forums, threads and posts was counted to gain an understanding of the activity in forums for each site. Differences were seen both in the structuring of forums and in their usage as the following discussion shows. Instances of forums, threads and posts were all manually counted as access to data analytics proved difficult.

Number and nature of forums

The number of forums varied between a site which had a single cafe forum and another which had 7 live forums covering different aspects on which students may wish to seek advice or discussion. Evidence was seen also of the use of forums that are active only at specific points of the year for example induction and module choice.

Number of live forums by Subject site

Combine Stem	1
Computing and IT	1
Design and Innovation	4
Engineering	2
Environment	7
Maths and Stats	7
Physics Astronomy and Planetary Science	4

Forum names reveal the different intentions of qualification teams and Subject site owners in setting up the forums. For example, for Combined Stem and Engineering, the main forum is a cafe which carries the assumption of light or absent moderation and informal (or less subject-oriented) discussion topics. Other qualifications, on the other hand, have forums that indicate distinct intentions and areas for discussion. For example, Maths and Stats largest and most well used forum is entitled "M&S Advice", which clearly indicates that this is a moderated area where advice can be sought and found. However, having a forum which is simply named after the Subject site, as is used by both PAPS and D&I, also seems to encourage use, perhaps carrying with it the implicit assumption that subject forums will provide advice and guidance.

Environment, Maths and Stats and PAPs all have forums for distinct parts of the student community, for example Environment has separate forums for Environmental Science, Geography and Environmental Science and Environmental Studies, and Maths and Stats and PAPs both have forums for maths preparation.

Number of threads and posts on forums

The number of threads on forums varies widely from the relatively small number of threads on the Design and Innovation forums (18 in 19/20), to the much greater number on the Maths and Stats and PAPS forums. The greatest number of threads overall is seen on the PAPS forum (201) which is interesting given that, although a large constituency of students, the Maths and Stats constituency is nearly four times larger (see Table 3).

In terms of the number of posts the greatest number of these, taken across the forums as a whole, is seen on the Maths and Stats site forums. This is closely followed by the number of posts on the PAPS site. The third largest number of posts is seen in Computing and IT, followed by Environment, Combined Stem, Engineering and Design and Innovation.

However, taking the approach adopted with overall views of normalising the data when the ratio of posts to the number of students on qualifications is calculated, we see that proportionately the PAPs site has the highest ratio of posts to the number of students, followed by Environment, Combined STEM and Design and Innovation. Though numbers of posts are huge in Maths and Stats, the ratio to the number of students is lower. However, Computing and IT and Engineering have the lowest ratio of posts to students. Interestingly both of these Subject site areas service a range of qualifications but only offer one forum. It may be that students seeking specific advice or information about their particular qualifications find the cafe area too generic or the information supplied elsewhere on the site meets their needs. Although it is also possible that the nature of the subject and the students

that take it, leads to a disinclination to engage in forum activity particularly if unmoderated. This is a particularly interesting finding in the light of the Physics data in Section 1 above; the seeming discrepancy is accounted for by the amalgamation of Physics with Astronomy and Planetary Science into one site and the subsequent strong growth of PAPS site forums in 19/20

Ratio of posts to number of students 19/20

Engineering	1: 17
Computing and IT	1: 16
Maths & Stats	1: 8
Combined Stem	1: 5
Design & Innovation	1: 5
Environment	1: 4
PAPS	1: 3

Table 3 ratio of posts to students

Subject site	Forum	No. of threads 18/19	No. of threads 19/20	No. of posts 18/19	No. of posts 19/20
Combined STEM					
	Combined STEM Cafe	25	44	96	346
Computing and I.T.					
	Undergraduate Forum	35	63	223	604
Design and Innovation					
	Freshers' Forum	7	1	14	1
	Design and Innovation	16	13	72	74
	Design Summer School	-	2	-	37
	Module Choice	2	2	6	65
Engineering					
	Engineering Qualifications Cafe	28	48	108	198
	Women in Engineering	40	20	45	172
Environment					
	Cafe	20	38	52	212
	Environmental Science	16	27	36	101
	Geog. and Environmental Science	1	6	1	19
	Env. Studies	-	9	-	63
	Induction for new students*	*restricted*	*restricted*	*restricted*	*restricted*
	EEES Study Buddy	2	-	29	-
	Env. Studies - moving onto the next stage	-	9	-	138
Mathematics and Statistics					
	M&S advice	143	175	2525	1603
	Pre-module help	-	30	-	397
	Studying multiple modules	-	4	-	15
	Mathematics Teaching and Schools	10	10	34	44

	Maths and Stats student discussions	-	31	-	446
	Revise and refresh MST124	-	5	-	15
	Early Start M140 *New forum 20/21*				
PAPS (Physics, Astronomy and Planetary Science)					
	PAPS	91	201	522	1863
	LaTeX discussion	-	3	-	21
	Maths for S217	-	16	-	192
	Maths prep for level 3	-	21	-	88

Table 4 Forum names, numbers of threads and posts 18/19 and 19/20

Limitations of thread and post counting

Whilst counting threads and posts offers a good indication of the number of active students, what it cannot show however, is the number of students who are engaging passively by 'lurking' and reading other people's posts. Previous research has shown, in a related context, that lurking may be as valuable to student development and learning as active engagement (Jones, Lotz, Holden, 2019). Further work in this area would require data analytics to show the numbers of students visiting forums and other parts of the Subject sites. For these reasons, quantifying activity alone should not be taken as an indication of the value, or potential value of forums, though it is evident from the examination of existing forums that subject and qualification teams are regularly reviewing the forums that are offered and deleting or creating to meet the perceived needs of the student body.

Conclusions from analysis of forums

There are clear differences seen in the way in which forums are being used across STEM. A tentative conclusion drawn from the ratio of posts to the number of students is that Cafe forums are less well used than forums which either explicitly offer advice or carry the implication that they do, whether this is general help, module choice or assistance with specific areas. The figures also show that use of Subject site forums increased from 18/19 to 19/20. The reasons for this are unknown but it may be access and links to the sites are improving and that students are gradually becoming more familiar with the advantages that the sites offer. Further work might include using data analytics, if accessible, to look at the patterns of use of the forums and other areas of the site and an analysis of the content of forum posts to better understand the conversations that are being initiated and responded too.

Survey responses

Six hundred students from across the STEM faculty were invited to complete a survey [1] about their experience of Subject sites. The response rate was low, with only 4.5% (27 individuals) completing the survey. None-the-less the results offer some good insights into the student experience. It may be that the low survey uptake is due in part to students either not being aware of or not understanding what the Subject sites are. This despite the invitation including a link direct to the site relevant to their own qualification, although this cannot be proved the responses received from those who did take part suggest that this may, in part, be the reason. The responses to the survey are analysed below.

[1] The survey can be found at https://admin.onlinesurveys.ac.uk/account/openuniversity/survey/edit/514096

Access to the Subject site

Of the 27 respondents 5 were not aware of the study website related to their subject and each was studying a different subject, (PAPs, M&S, Comp & I.T. and no registered qualification). Of the 21 respondents who were aware of the sites, 8, from across the faculty, had visited the relevant Subject site, 3 had visited the site occasionally and the rest had visited once or twice. There is no one site that stands out as more visited than others from this data.
More than half the students (56%) found the subject site easy to find; around a third (30%) felt that finding the Subject site could be improved, and the remainder did not respond because they had not found the Subject site prior to the survey.

Chart 5 shows the that fifteen respondents had first found the Subject site from their student home page, others had found it through a Module or Qualification Team email, forum, or direct link or tutor email. Subsequent visits (Chart 6) were mostly via the Study Tab (17 students), although three students used bookmarks and three links in emails to navigate to the site on future occasions.

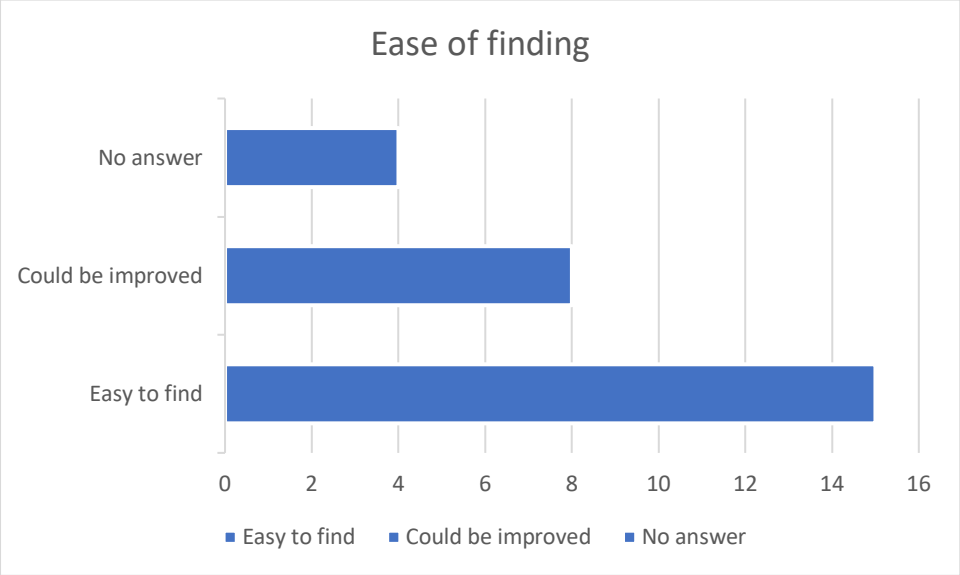


Chart 4 Ease of finding the Subject site

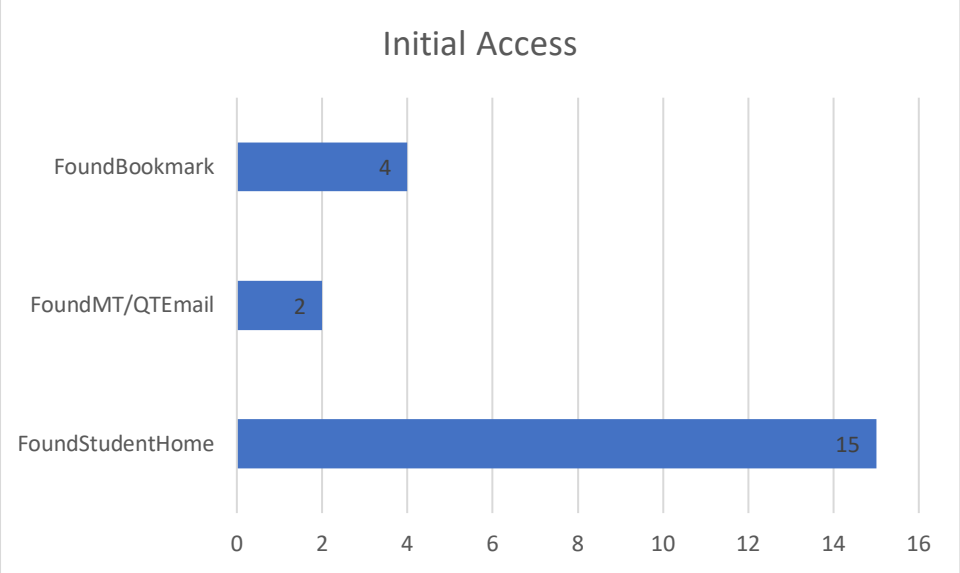


Chart 5 Where Subject site accessed from initially

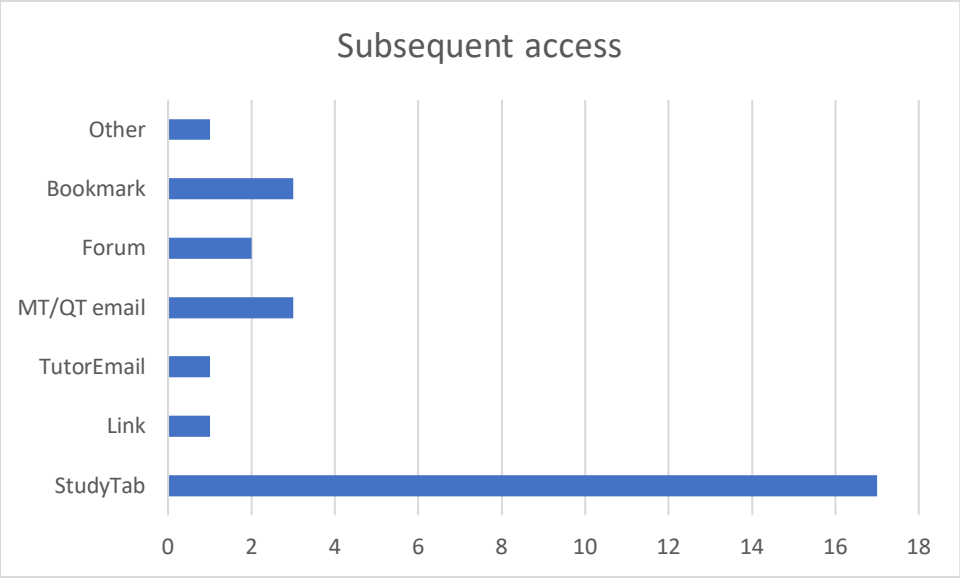


Chart 6 Where Subject site accessed from subsequently.

The comments around how access might be improved offer further insights into issues of access. For example, a couple of students commented that it would be good if the Subject site link was integrated into StudentHome, whilst others report that that is where they access it from. This suggests that, for some students, there were issues of visibility of this link in a very busy page. The "Study" tab is not clearly understood by students. A student sums this up:

> *"to be honest I always have difficulty finding this study website, make it more prominent somewhere please".*

Since the study was commenced, it appears that the link to the Subject site has been given greater prominence on StudentHome which is a welcome development. However, it would appear that for the Subject site button to be visible the student must 'open' the area.

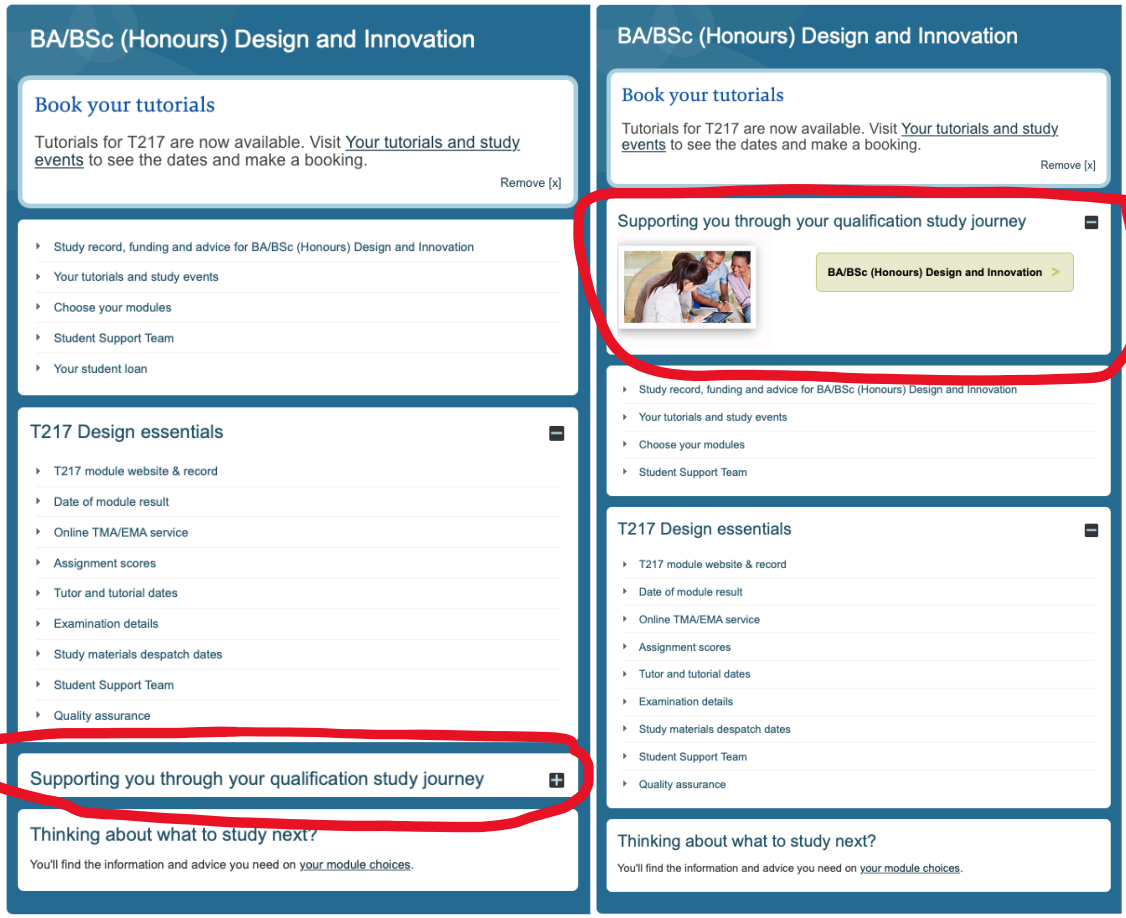


Figure 3a: View when the link area closed (default state), 3b: View when link area open taken from two different student pages

Once the Subject site is located it offers access to information which enables the student to navigate their modules and forums in a more immediate way than their StudentHome page which has links to a far wider range of information. Students can access their current modules, clearly see assignment dates, access module forums and also access their past modules as well as being able to bring in any links created in StudentHome. The layout of the landing page of the Subject site (figure 4) is common across all subjects, however, the content of each of the tabs; Connect, Discover, Skills, Plan and Succeed, varies between subjects with each qualification or subject team tailoring the content to the perceived needs of their student body.

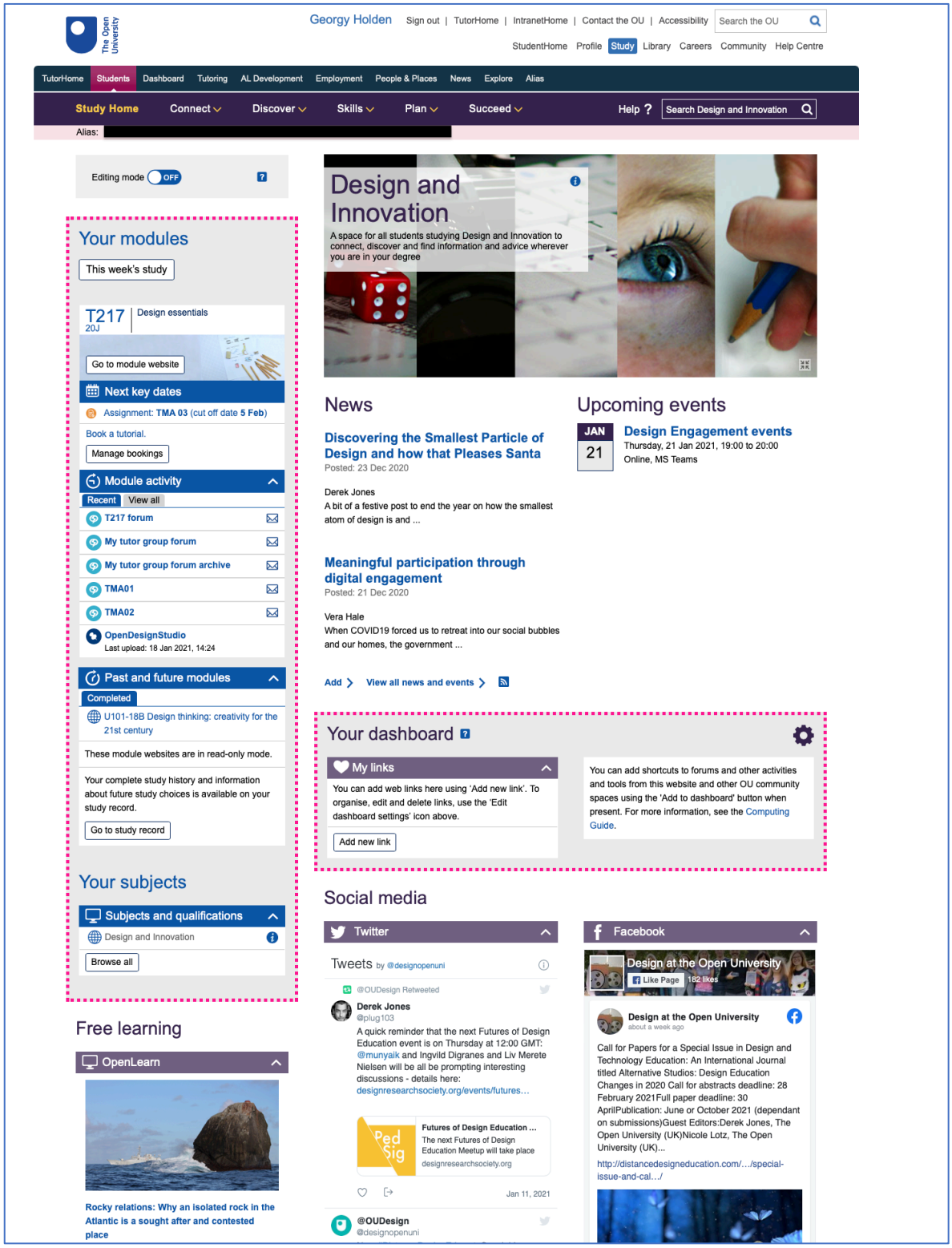


Figure 4 Subject site landing page for Q61 showing the areas that are student specific.

For student use, one suggestion made in the survey was that, if possible, it would be good to be able to go to the Subject site from the OU Anywhere app. With many students using this app, this would seem to be an idea worth exploring.

However, as well as student use, it should be borne in mind that there is value in easy access to the Subject site for central, regional and associate lecturing staff but colleagues report problems locating the site and rely on links or bookmarks to locate it for future use. This is perhaps indicative of the, module-centric organisation of the VLE.

Frequency of use

Looking at the frequency of access in Chart 6 we see that although a reasonable proportion of students claim to visit the Subject site frequently, more have visited once or twice or occasionally and there are four who may do so in future. This information, on its own, needs careful interpretation. The frequency of use could be related to the perceived usefulness of the site, but it may also be related to perceptions of ease of access.

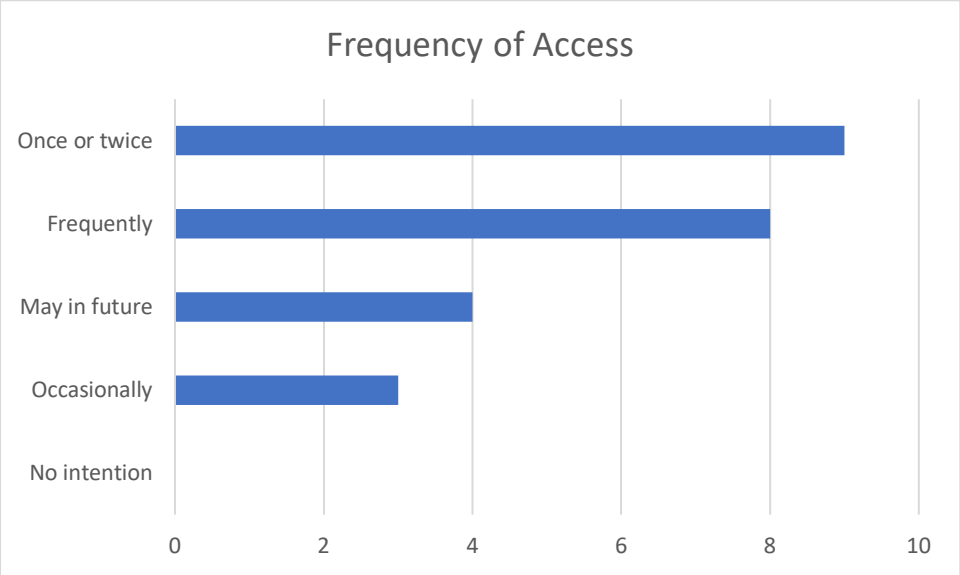


Chart 6 Frequency of access

Students were asked to state what their reasons for not visiting the Subject site were. Seven students said that they had not done so because they had been unaware that it existed. One cited not having enough time, a further student did not specify their reasons.

Purpose

The most frequent use of the Subject site is for general information, although students who report using the site for this, also report using it for news and careers information. Less frequent is the use of the site for practical purposes such as downloading software, finding resources related to skills or finding information about who to contact if advice is needed. Use of the site to connect with others is seen for a number of students drawn from different qualifications. Chart 7 shows the breakdown of purposes indicated. Chart 8 shows individual responses to these purposes, showing that some students use the site for more than one purpose. Those showing no usage comprise the students who were unaware of the sites until they took part in the survey.

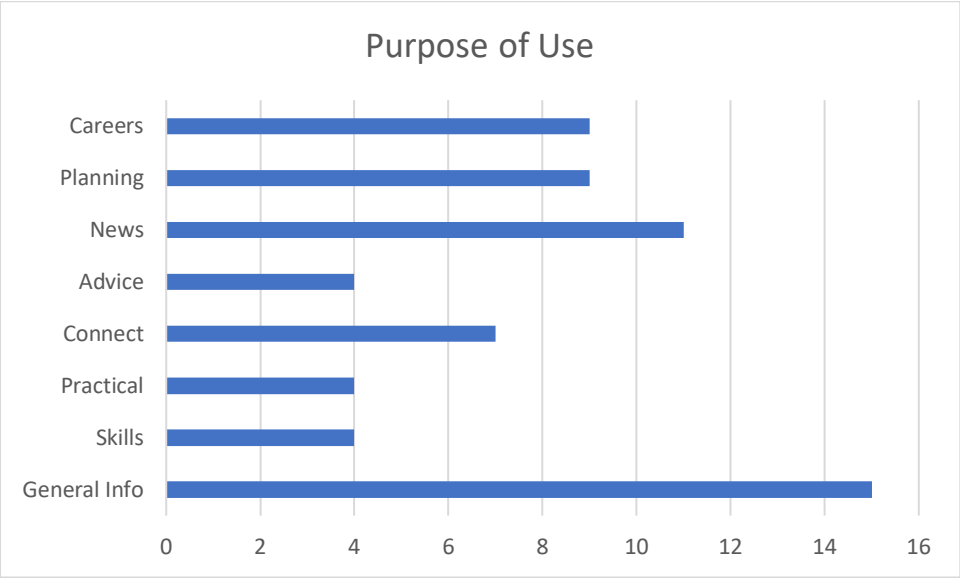


Chart 7 Purpose for which Subject site used.

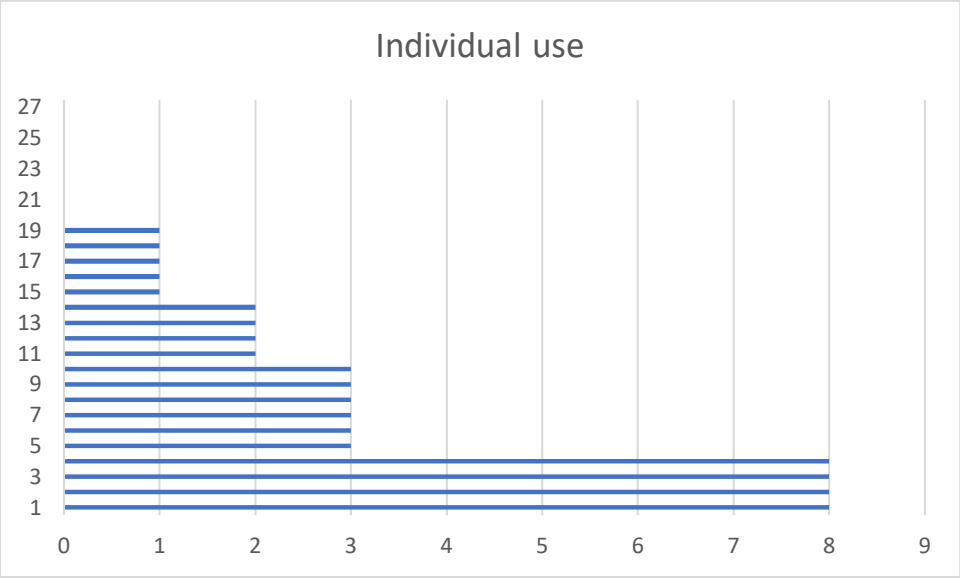


Chart 8 Individual use of the Subject site, number of purposes indicated.

When cross tabulated with the qualifications no one qualification stands out as eliciting particular use.

Helpfulness

The students' assessment of the helpfulness of the Subject sites shows that many found their site helpful or very helpful (Chart 9). The large number of 'neutral' answers may reflect the number of students who had only discovered the site as a result of the survey and had not had time to engage with it. A similar trend is seen in the assessment of the range of available information (Chart 10), where the large number of neutral responses reflect the use of the sites.

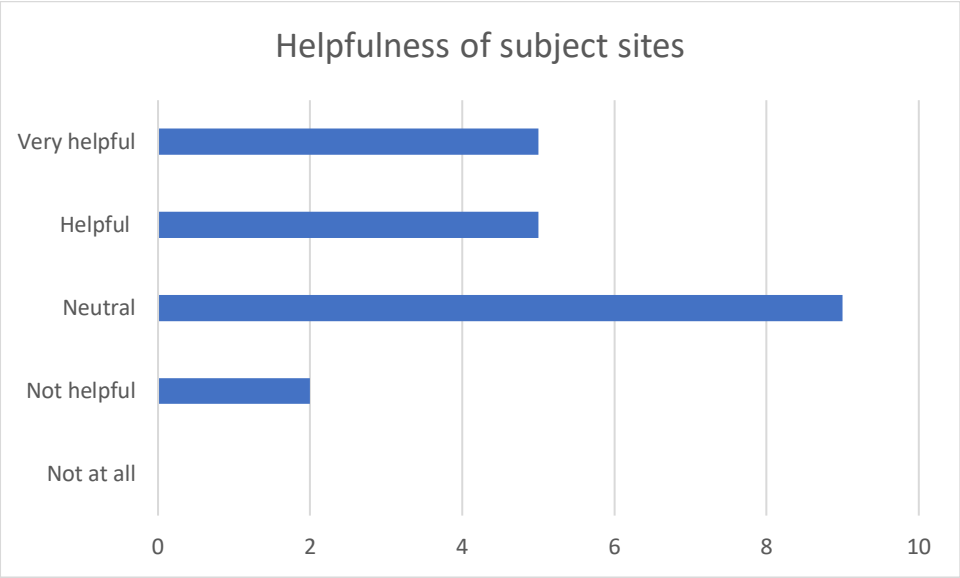


Chart 9 Helpfulness of Subject sites

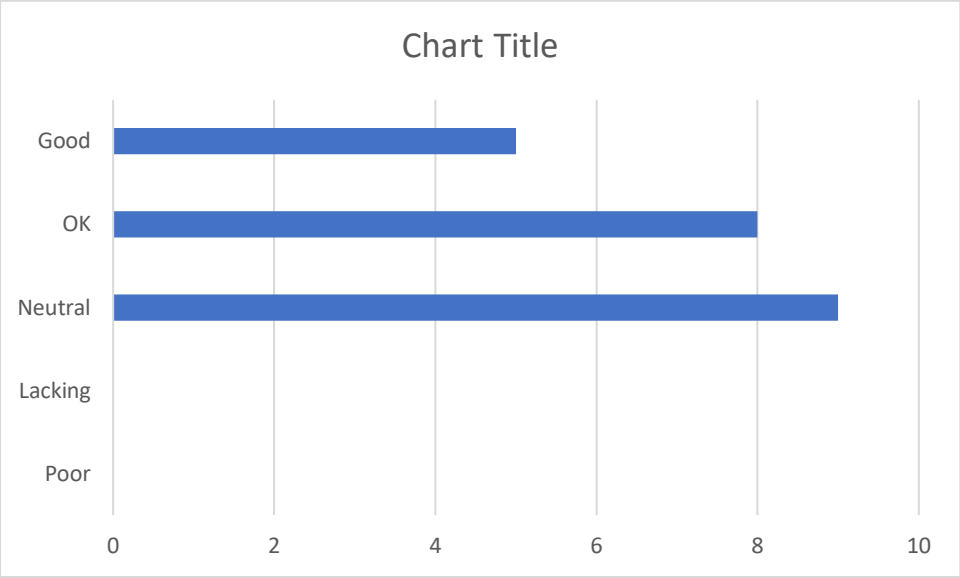


Chart 10 Range of available information

Quality of information

Overall students assess the quality of information on Subject sites to be good or quite good, with fewer seeing this as neutral (Chart 11). Examining the responses of the two students who see the quality of information as 'not good' both report difficulty in locating the Subject site. One is an Environment student, the other PAPs. From responses to other questions, it is clear that one of these students finds navigating their site difficult and 'bitty', the other (PAPS) would like to see more careers advice and science related articles. These responses indicate, perhaps, that not all layouts, structures and navigation will suit every student, however, on balance it would seem that the information included in the Subject sites is seen as valuable to students.

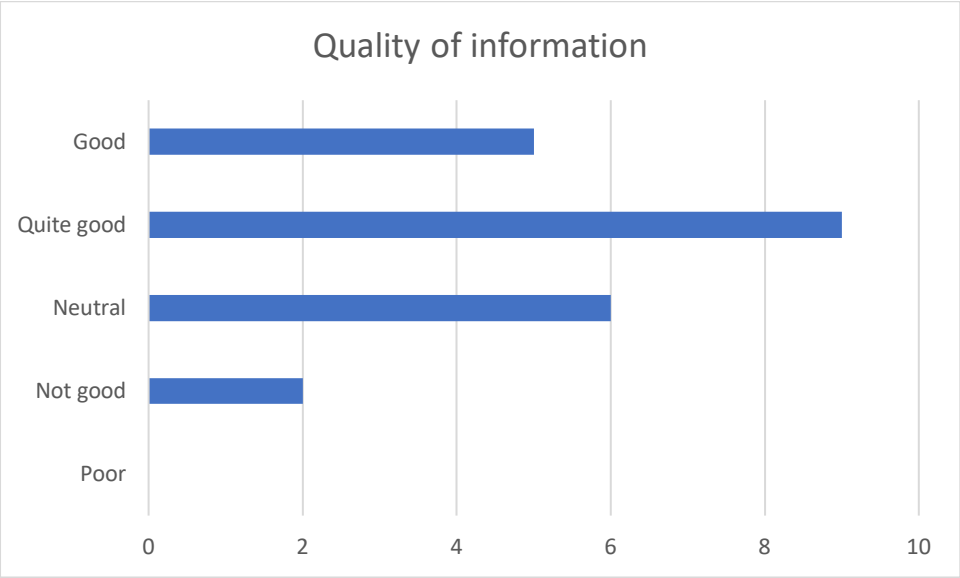


Chart 11 Quality of information

Ease of finding information

As Chart 12 shows, the majority of students found locating information easy or very easy, once they have located the site itself. However, unsurprisingly, the two students who felt the quality of information was not good also found difficulties in locating information, a further two students had the same issue, one from Engineering and another student from Environment.

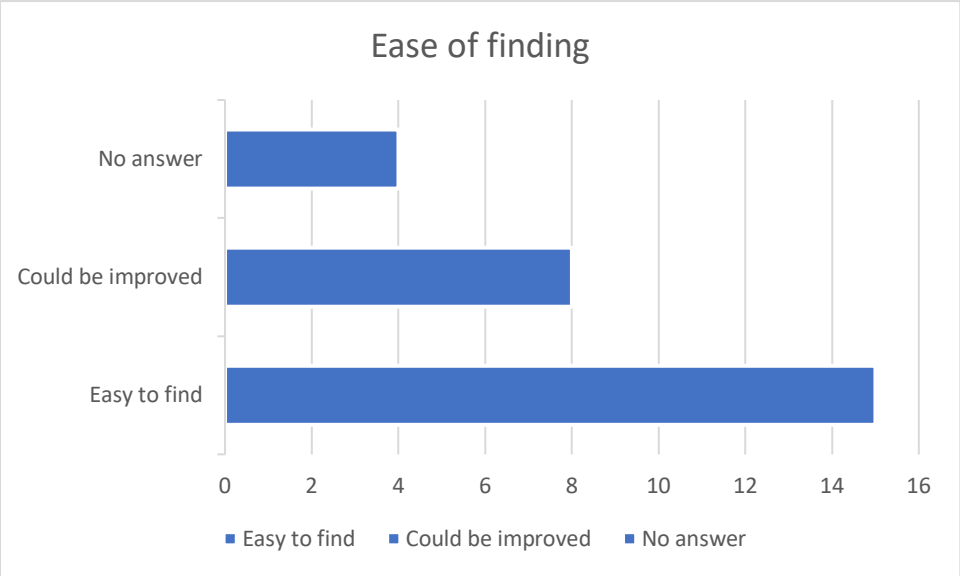


Chart 12 Ease of finding information

In addition to looking at functional and quality issues, the survey sought to understand whether the Subject sites play any role in developing a sense of identification with their subject or developing a sense of community amongst learners.

Subject site contribution to the sense of being a community of learners

The picture for developing a sense of being part of a community of learners is mixed (Chart 13), with opinions on the Subject sites' role in this being divided between those who believe that the sites do foster a sense of community and those who feel that they do not. However, in response to being asked how important a sense of community is, it is seen that this is valued more highly than a sense

of identity with the chosen subject. Some of the findings from the study of forum use, reported in this study, may aid understanding of the responses as they indicate varying levels of engagement for different subjects. However, previous research has demonstrated that creation of a community of learners can be a strong contributor to student success (Crossling 2008, Jones et al 2020)

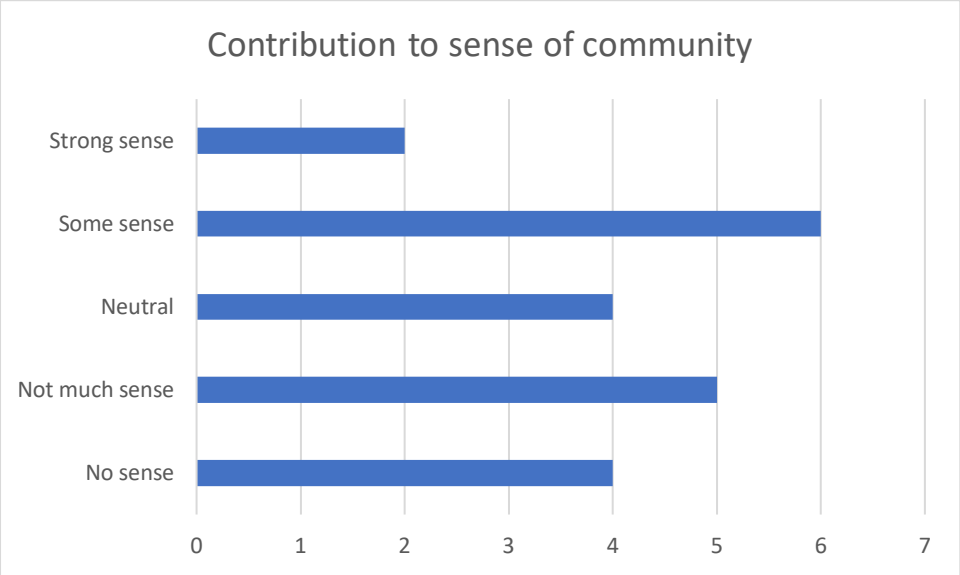


Chart 13 Contribution of the Subject site to a sense of community

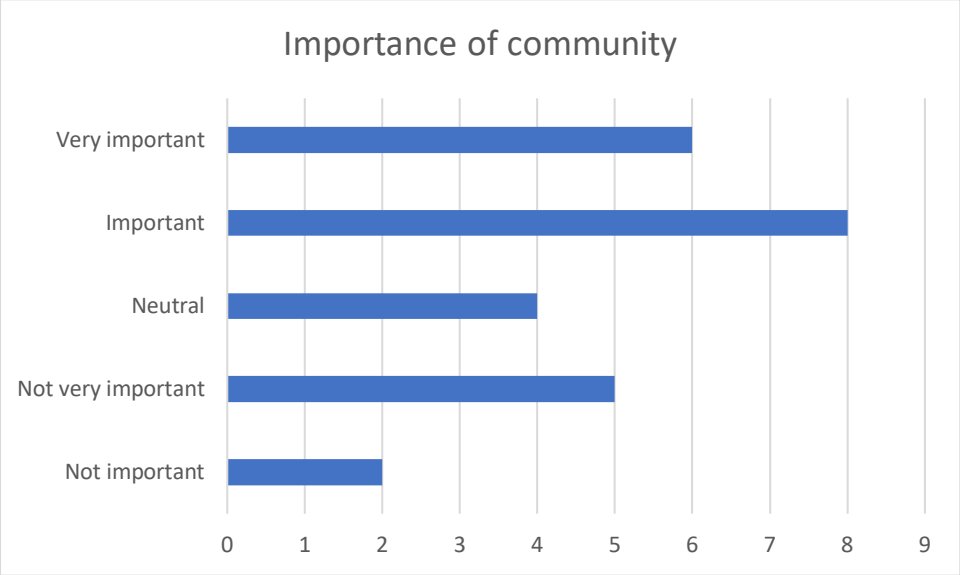


Chart 14 Importance of a sense of community

Subject site aid to identification with subject

With regard to identification with their chosen subject (Chart 15), responses show that the Subject sites do assist students in developing this sense of identity, interestingly though, although this appears to be the case, fewer students feel that a sense of subject identity is important (Chart 16), with the largest single proportion being neutral about this. It is an interesting finding that a sense of community is seen as of greater importance than a sense of identity with the subject. A survey of literature around professional identity (Trede et al 2011) cites West and Chur-Hansen who claim that

the workplace has a far greater influence on identity than universities and this survey's finding may support that view.

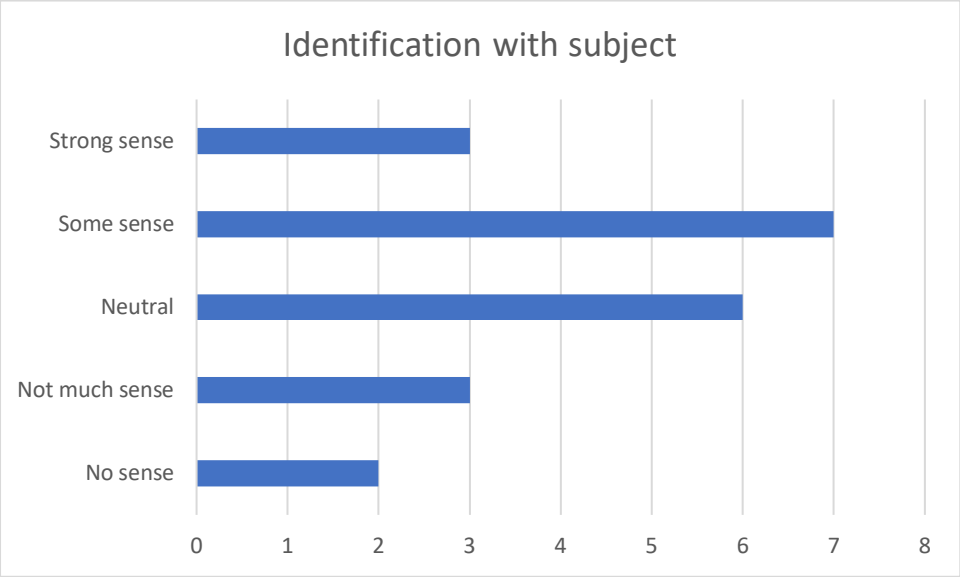


Chart 15 Contribution of the Subject site to develop identification with subject

Importance of identification with subject

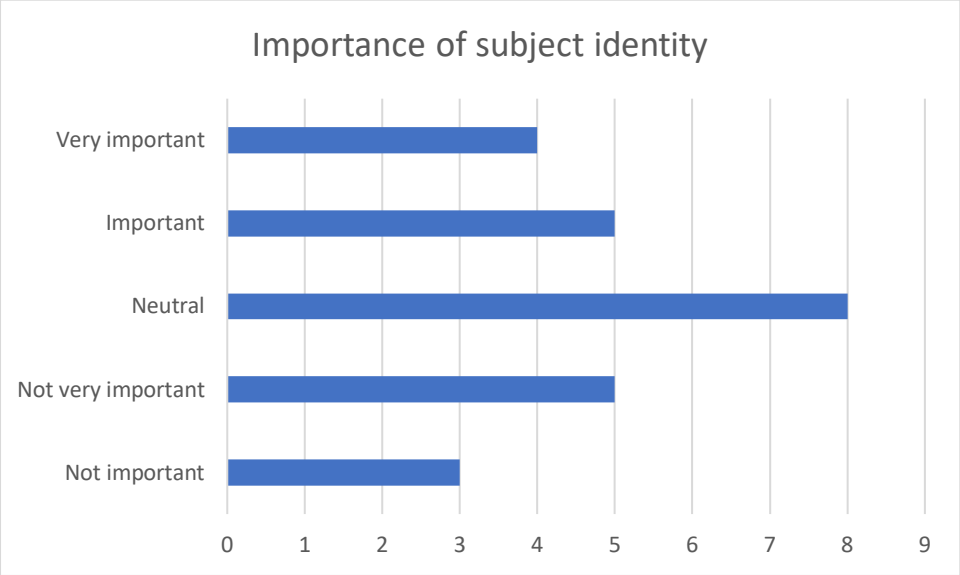


Chart 16 Importance of identity with the subject

What students like about Subject sites

The following responses were received in response to the open-ended question about what students liked about their Subject site. They have been grouped according to site. A number of points stand out as being appreciated across sites; information about careers and employability; easy access to module information and; news, events and featured stories.

Maths	• What my next deadlines are • I like to review my past module topics to revise for upcoming modules. Also, I like the succeed tab when I am daydreaming about what I will do with my degree • The 'Connect', "Discover', 'Skills' etc menu, with submenus give an easy access to the information. And the site is up to date. All the links are working for example. • I like the new design, the background is much nicer on the eyes. Layout feels friendly and less overwhelming than before. Very easy to navigate and quick to load. • This is a much more concise source of information about my module.
Environment	• Honestly, I viewed the Subject site only once. I will try to use it more • When I do find the info I'm looking for it has been helpful. I found some useful information for my revision .
Combined STEM	• As a mature student I'm very interested in jobs and employability, of course. But I like that the website gives the module information, some news, some upcoming events. I think it is well balanced. • I like some of the featured stories. And it was a great introduction to Open Learn which I've used a lot.
PAPS	• Careers advice
Computing	• Forums and OpenLearn link • Next assignment/tutorial dates are helpful as well as forum post read/unread status.
Engineering	• I like the upcoming events, news and easy access to different parts of my course (like forums and current week of study).

Table 5 Open comments in response to "What do you like about the Subject site?"

Once the Subject site is located it would seem that that what it offers is appreciated but the comments reinforce the data on frequency of use showing that for the majority of respondents' use is infrequent and may be linked to particular points of the academic year.

Possible inducements

Students were asked what might induce them to use the Subject site more. Several students responded that having found out about the site from the survey they would use it more frequently.

Visibility of the sites emerged as an issue, with a number of suggestions to improve this, for example making the Subject site the main landing page following sign-in, linking from module sites to specific pages of the Subject site and signposting of information relevant to individual students.

Another issue identified is the lack of time to engage with the site, despite its usefulness. One student makes the suggestion that they would engage with the site if time were built into the study calendar to do so.

Further suggestions include links to relevant external media and links to relevant research papers.

Maths	• Next tutorial dates • Articles from industry experts about maths • More time, but that's out of TOU's control, of course :-) Combining full time work and an academic study, there is little time left to explore all the information TOU offers. I certainly welcome the Study website, because I feel more connected to TOU and to other students. • Now I know it exists I will use it frequently. • There is a lot of information you need to get from other parts of the website, and this seems just an add on rather than an important site
Environment	• It needs to be the main focus following sign- in to encourage all students to use it as the first place they visit. • More overt highlighting via email or message of information that would be relevant to me. • Didn't know I could go over previous modules here.
Combined STEM	• As I said, I will visit it more often, maybe mostly to look for upcoming job events and for help defining myself and my career path. • Links with the module which go to relevant information on the study website, or where research papers, other information may be found (particularly if relevant to an assignment) • Not much. I like the stuff that's on there already but I just don't use social media so all that tweeting etc isn't for me.
PAPS	• Science articles or info on OU research in all science subjects • As already stated in this survey, somehow make its existence - as distinct from the module websites - more obvious.
Computing	• Links to relevant TV, radio and YouTube. • I set aside time to 'study's (or work through the website - If time to use this link/site was incorporated into the study calendar, I would use it. I'm likely to forget and just focus on where I'm guided to in the study material - with lots of reference to not use external links/sites, I would be nervous about mixing up 'approved content'with additional info. • I will use it now I know about it! To be fair, I may have forgotten about it. There's a lot of stuff to remember and I tend to go through my course relying on the same set of resources.
Engineering	• More qualification and industry related information

Table 6 Open comments in response to "What would induce you to use the Subject site more?"

Conclusions from the student survey

The student survey shows that one of the key problems to overcome in encouraging use of Subject sites is an improvement in their visibility and also their better integration into the student journey at module level. The contents of Subject sites seem to be broadly appreciated and some students prefer the interface of the sites to that of StudentHome because of the immediate access that it offers to those areas of primary importance to the student, notably module sites and forums and assessment dates. Whilst all of these things are also available from Student home, the more up to date layout of the Subject sites and the presentation of information appears to have greater appeal to students. An interesting finding from these respondents is that a sense of community is seen as of greater importance than a sense of identity with the subject. In a survey of literature around professional identity Trede et al (2011) cite West and Chur-Hansen who claim that

the workplace has a far greater influence on identity than universities and this finding may reflect that

Good Practice

In addition to the analyses reported above, the project looked for examples of good practice around the university with regard to Subject sites. One of the best examples of the use of the Subject site for student support is that of the Maths and Stats site. Hilliam and Arrowsmith (2020) say that Information to help prepare and induct should be publicly available and, consequently Maths hosts a MathsChoices website which sits outside of the VLE to enable students to prepare for their studies in advance of registration. Diagnostic quizzes are a key part of the site and students are referred to these by the SST.

The site also contains revise and refresh resources for students needing to refresh prior learning. This use of the study site is an efficient way to provide resources which can be referred to at any stage in the student's study journey and is appreciated by students who are aware of their needs and limitations. Another practice that is helpful is the use of the 'events' space to signpost to relevant parts of the study site at different points in the student journey e.g., reminder to look at study pathway information at module choice time, pointing towards skills section, module quizzes and module preparation.

Another useful idea which is worthy of replication on other sites is the provision of the first two chapters of each module available ahead of time so that students may prepare, and if needs be, reconsider prior to formal study commencing (Prepare for study). This 'Early Start' initiative has been successful in reducing drop out and increasing rates of progression (Hilliam and Arrowsmith).

Maths and Stats have also taken the approach of tailoring generic skills information to include pages of academic practice tailored specifically to the subject. The Plan section of the site also includes pass and completion rates of modules to inform students' module choices as well as information about the possible routes through a Maths and Stats degree.

Hilliam and Arrowsmith see the key to success of the site as the 'Advice' forum. The statistics presented earlier are indicative of the success of this forum. The aim of the forum is as a space to discuss future study plans, modules and careers as well as to provide a space for first-hand feedback which can inform module and qualification development. It is perhaps this intent which has made this forum so much more successful than unmoderated Cafe style forums. If students are able to encounter qualification team staff in the forum and feel that their voices are heard this is an incentive to use, especially taken alongside the other affordances of the site.

Outside of STEM, another example of good practice is the Psychology and Counselling subject site, which contains a large number of resources, including links to blogs, podcasts and video resources, pages requesting input into the development of new modules, a "quick win" page encouraging students to sign up for tutorials which includes a short video which introduces new students to the different aspects of teaching at the OU. Other points of good practice include 'Quick Start' guides for core modules and module narratives explaining the different qualifications covered by the site. Under the Skills section a page called 'Methods, resources and support' offers links to a 'Methods lab' which contains detailed how-to information on methods which can be consulted at any stage of study. On the same page resources that support different research methods are found making this area a rich source of tools and information to assist students with their experiments and research.

From these two examples it can be seen that the use of the Subject site as a space to support students in planning their study and career paths is considered extremely valuable. The value of subject-oriented interaction on forums is seen particularly on the Maths and Stats site (though brief observation shows this as important for the Psychology and Counselling site too). Importantly though, the use of the Subject site as a super-repository of resources to assist students throughout their study journey as seen in both examples points towards the potential use of all sites to provide common resources and avoid duplication of the same information in different modules.

Overall Conclusions

Each of the research activities contributed to a picture of usage of the STEM Subject sites. The sites are used by all subject teams to provide qualifications and subject information, particularly around module planning and careers. However, Maths and Stats and Psychology and Counselling demonstrate, the potential for the sites to be relevant throughout the student journey and to go beyond being repositories of information to be points of contact and advice for all. Indeed, the advice on the subject sites is so valuable that it would be really helpful to potential students to have access to the site of their choice as early as possible. The Maths and Stats early start programme has demonstrated that enabling students to get ahead and to experience study at the OU prior to module start can help retention and progression. **The recommendation would be that all Subject sites are available to students, or potential students, as early as possible - this could be achieved by reviewing permissions across the different elements of the site. Considering the current content of the Subject sites there are no obvious reasons why the majority of information should not be publicly available.**

The statistics of both overall and forum use, support the view, gained from the student survey, that there is the potential to increase student use of sites for all subjects, but at present a large number of students are either unaware of the sites or use them too infrequently to remember how to access them when they may be useful. **A further recommendation would be to consider using the subject site as the student's landing page instead of StudentHome, in other words to reconceptualise the site as the spine of the study journey.** In addition, in recognition that many students focus only on their module sites, to include signposts and direct links to subject sites from individual module sites. The clarity of information of immediate value to the student i.e., module information and links and access to past modules makes this an attractive starting point. StudentHome, in contrast is a more complex space to navigate and comprehend and is dated in style and layout.

One issue of particular concern is that students who have not yet committed to a qualification pathway do not have access to the study sites despite the fact that this group of students could benefit enormously from being able to gain greater insights into subjects and where they might lead. **A recommendation would be that either students should be able to opt for access to a subject site when they first sign up to the OU or they should be automatically allocated to one related to their first module with the option to change sites if automatic allocation does not reflect their interests**.

Impact

This has been an evaluation of existing sites; however, it is hoped that looking at these sites and making the comparisons between them in terms of their use and success might inform future practice which might in turn have a beneficial effect on student learning. The use of these sites has the potential to improve retention and to help students to chart and articulate their employability throughout their studies. The recommendations in the conclusions above point to the need for increased visibility of the sites and universal access.

Deliverables

This report will be available beyond the life of the project.

Figures and Tables

List of Acronyms

C&IT	Computing and Information Technology
D&I	Design and Innovation
EEES	Environment, Earth and Eco-systems
M&S	Mathematics and Statistics
PAPS	Physics, Astronomy and Planetary Sciences

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University approval processes

- *SRPP/SSPP – Approval from the Student Research Project Panel/Staff Survey Project Panel was obtained according to the Open University's code of practice and procedures before embarking on this project. Application number 2019/098*
- *Ethical review – An ethical review was obtained according to the Open University's code of practice and procedures before embarking on this project. Reference number HREC/3355/Holden*
- *Data Protection Impact Assessment/Compliance Check – A Data Protection Impact Assessment/Compliance Check was obtained according to the Open University's code of practice and procedures before embarking on this project. Data Protection registration number I have a record of applying for this but cannot locate the number.*