

Analysis of Learning Spaces and Access to Software within the College of Science

The College of Science has recently experienced a period of rapid growth, with the creation of four new schools in less than six years. Along with this a series of new buildings have also been created to cater for these students with plans to further increase capacity over the coming years.

The following document provides analysis and recommendations on learning spaces within the College of Science. The student led research around Learning Spaces was undertaken by the College of Science Student Officer after students began to discuss problems with opening times and the requirement to access specific software on computers within the school. The open times were preventing access to this important learning resource. . To ensure that this was a holistic issue affecting all students in the School it was identified that there was a need to collect evidence to ensure that the Officer was evidence led in his findings. This has been achieved by obtaining an 11.6% response rate across the College.

A full list of anonymised data is available on request. To obtain a copy please contact scienceofficer@lincolnsu.com.

Recommendations

As a result of the student led survey, the following key recommendations have been made:

- The University should look to investigate the use of Universal Student Cards as a swipe access system. This will allow greater access out of hours to course specific software in labs, especially with regards to the Sir Isaac Newton building which will house Engineering and Computer Science.
- The University Library and Students' Union should look to investigate what software could be provided with additional licenses and which specific software students need access to. This could be achieved by expanding on the current provision of 16 dedicated computers in the library.
- The University should look into creating a generic computer lab on campus which allows access to campus computers for all students, in addition to the library provision.
- We would recommend that there is Student representation on the University Security Review to allow the concerns found in the survey to be heard by the review group.

The research shows there were some schools where respondents did feel satisfied with their current opening times and some where dissatisfaction was raised. This indicates that a blanket solution is not the answer. Respondents across all schools felt that they would benefit from longer opening times (Q5).

The research shows that course specific software is not widely available (Q8, 40% respondents can't access easily), and that respondents found it difficult to access course specific lab spaces (Q11, 32%). These results indicate that the solution should be focused on creating dedicated spaces with specialist computers for subject areas that required specific software. It is believed that if consideration is given to the creation of these labs, they should be prioritised over generic lab space to reflect the findings of Question 7. Access to these facilities should be limited to those within their schools and be accessible for longer periods of time than the current provisions are (Q5, 81%).

In order to enable limited access for longer periods of time and address Health and Safety and security concerns there is a need for an improved system of access. We suggest this would be solved with the adoption of a swipe access system mirrored by a Universal Student card that allows different levels of access to be given by time of year, school or level of study of student. The plans for the Sir Isaac Newton building show a developed use of a swipe card system to allow access to the building and labs or offices within it. This is a very welcomed provision.

As the University create dedicated spaces for subject areas, Engineering, Computer Science and Chemistry students all voiced the greatest urgency in achieving this. (indicated by Q7, specialist computers and specialist lab space). By prioritising these in the development of Sir Isaac Newton and Joseph Banks buildings, the proposed creation of additional generic computer capacity in the library should manage expectations of the other schools students as they wait for development of their areas. School of Pharmacy students voiced that the development of group learning space should be prioritised (Q7, group learning space – 88% rated this as 8 or above).

It is also recommended that the University Security review group use this research to inform the new Security strategy. A meeting with the Head of Commercial Facilities and Head of Strategy and Communications of Estates, indicated that from a security perspective there is no major issue with extending the opening hours of buildings as it does not alter current working practices. The only concern raised was if access was known to people outside the University, and there was no monitoring of the area in question, then the area could be targeted by the homeless population of Lincoln using warm spaces to rest and the increased possibility of theft. This could be mitigated by an increase in security patrols by existing University Security guards. Appropriate management through the use of the Universal Student cards as Access cards, which is a key recommendation, could help to combat this, particularly with regards to securing the building and limiting additional costs that would be needed to fund staff for monitoring or security purposes.

Methodology

For this survey, the respondent rate achieved was 240 respondents, equating to 11.6% of the College population. All schools within the College had the following level of respondents:

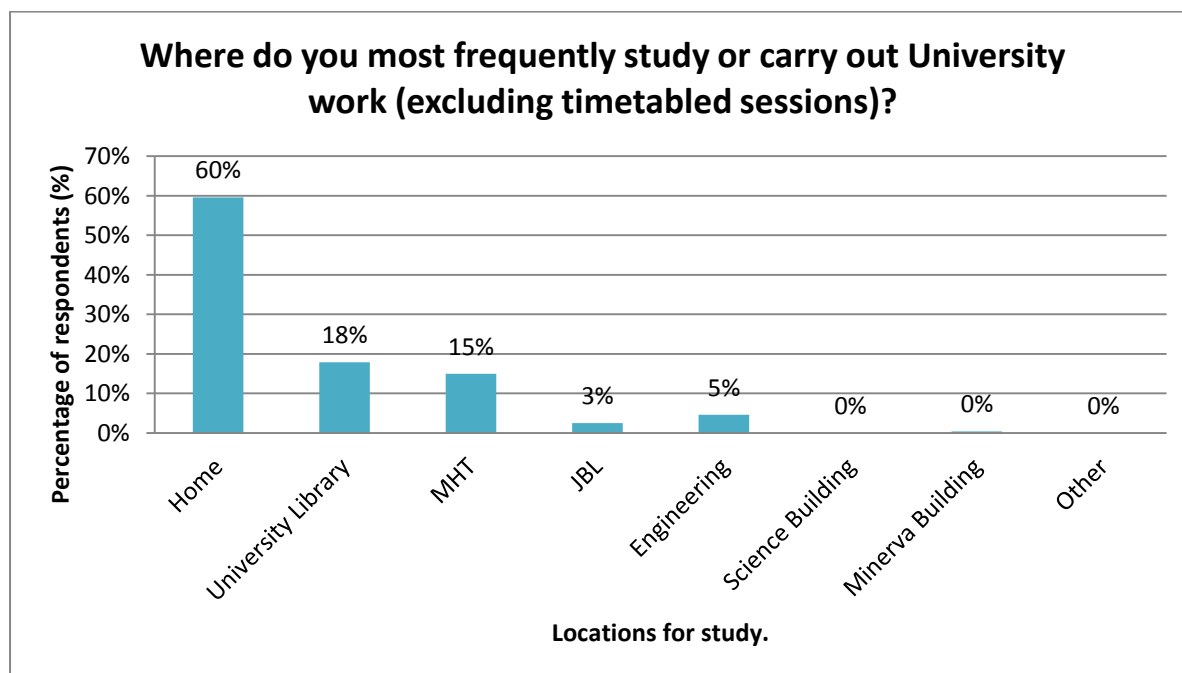
- School of Chemistry: 6.6%
- School of Computer Science: 15.8%
- School of Engineering: 13.6%
- School of Life Sciences: 11.4%
- School of Pharmacy: 10.8%

A breakdown of the demographics of respondents show that they were all current Undergraduate College of Science students, a slight majority of male to female and a level of response from EU and International students.

The survey was hosted on the University of Lincoln Students' Union website and created using the Students' Union Management System in order to allow access to demographics and results. The survey was opened online on the 3rd December 2014 with a close date of 23rd January 2015.. Questions were formed by the College of Science Student Officer, after research into similar surveys at other Unions such as Northumbria. These were then considered by the College Director of Education and Students, Vice President Academic Affairs and fellow School Representatives of the College. The full list of questions can be found as Appendix One at the end of this document.

Results

Q1: Where do you most frequently study or carry out University work (excluding timetabled sessions)?



The graph above shows that Home is where the majority of respondents study and the comments within Question 2 reflect this.

Q2: Why do you study in this area? Comments for this question varied from comfort and time, to concentration levels but common themes were;

"Fewer distractions in the library,"

"Access all hours"

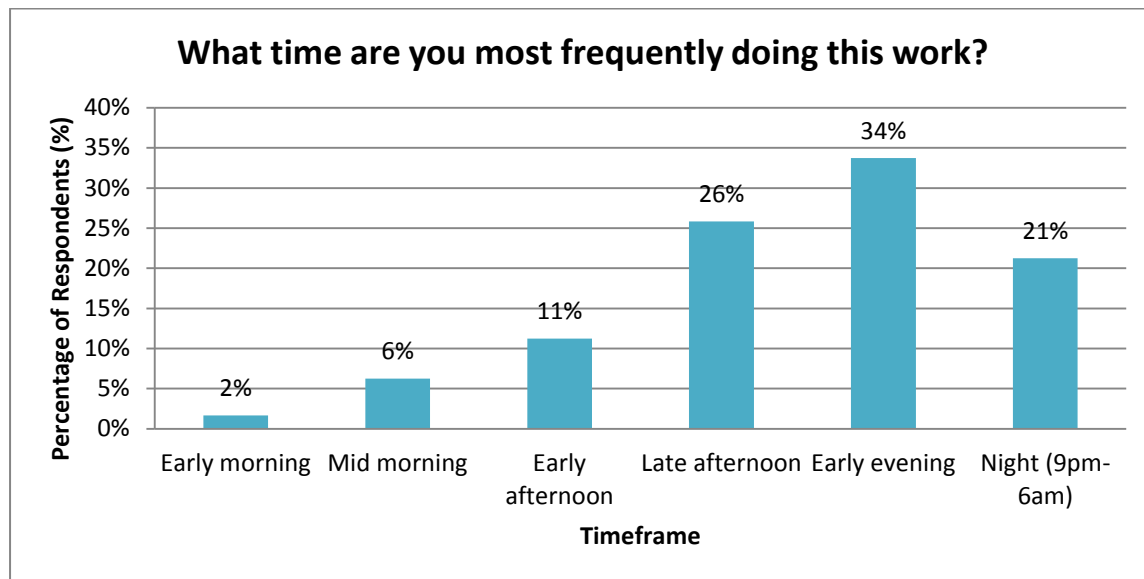
"Convenience and comfort (for home)"

"Access to textbooks and computers in the library"

"Specialist Computers" (MHT)

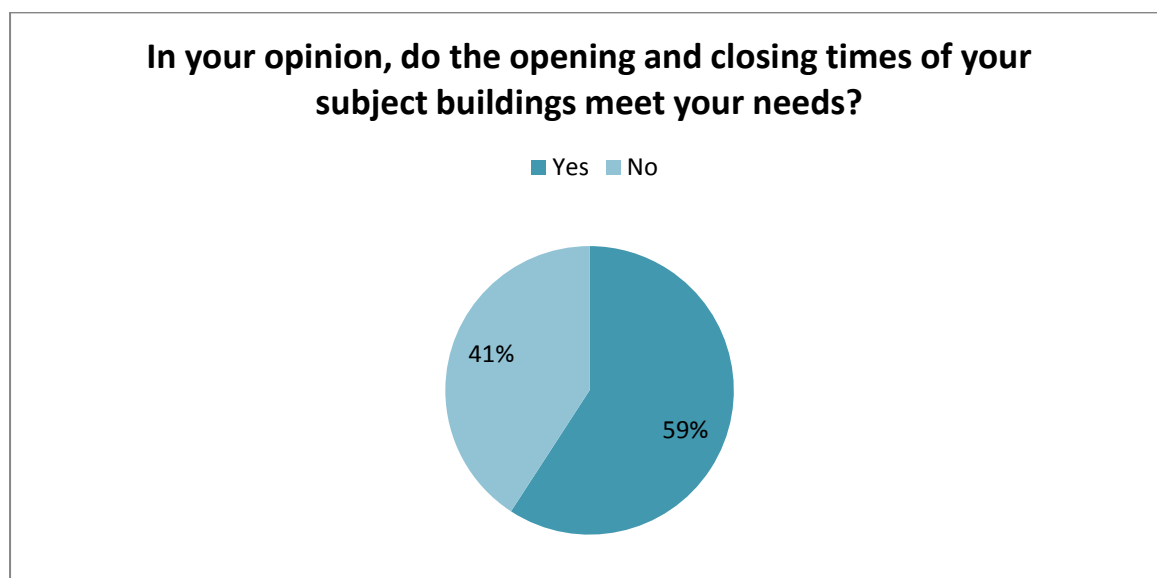
"Desk Space and Medicine Information Suite (JBL)"

Q3: What time are you most frequently doing this work? Some comments within the answers to question two reflected that some respondents worked late at night.



The graph above shows that the majority of respondents to question three tend to do work in the later hours of the day. This may be down to a number of reasons such as their timetabled sessions, day to day routine, or belief that they're more productive later in the day.

Q4: In your opinion, do the opening and closing times of your subject buildings meet your needs?

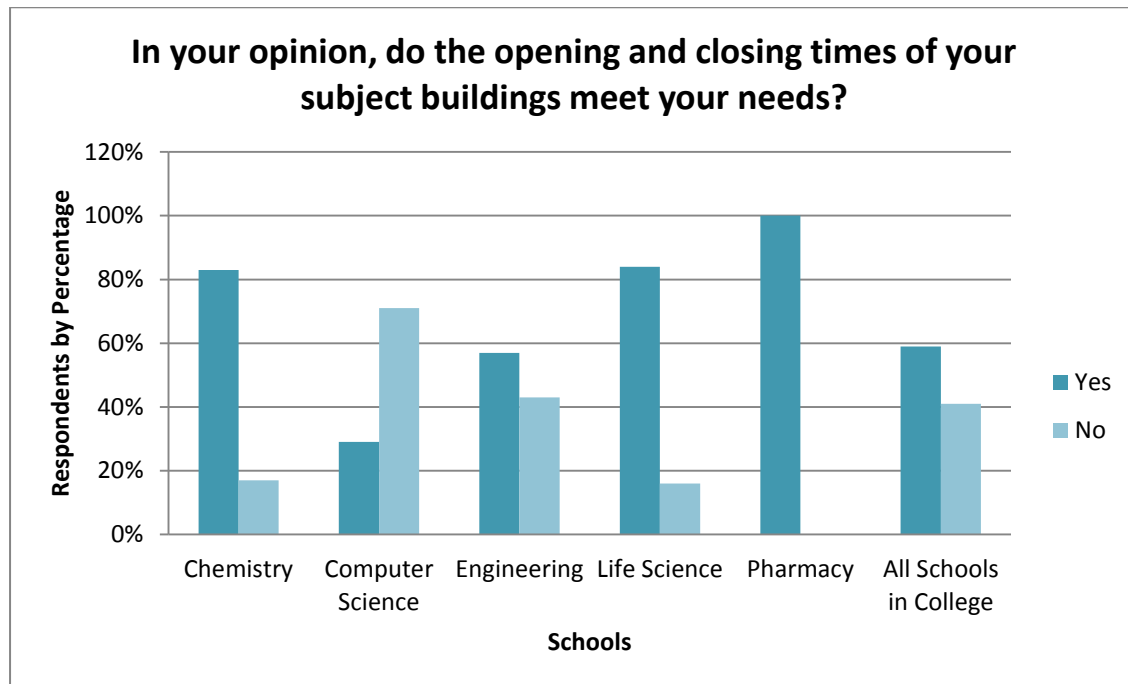


There is a slight difference in the percentage of respondents who agree and disagree, but the majority (59%) stated that their building does meet their study needs. However, the answers in Q3 show that the majority of respondents work in the evening after traditional office hours which is when University buildings tend to be closed.

"This is a significant finding and does suggest that action is needed."

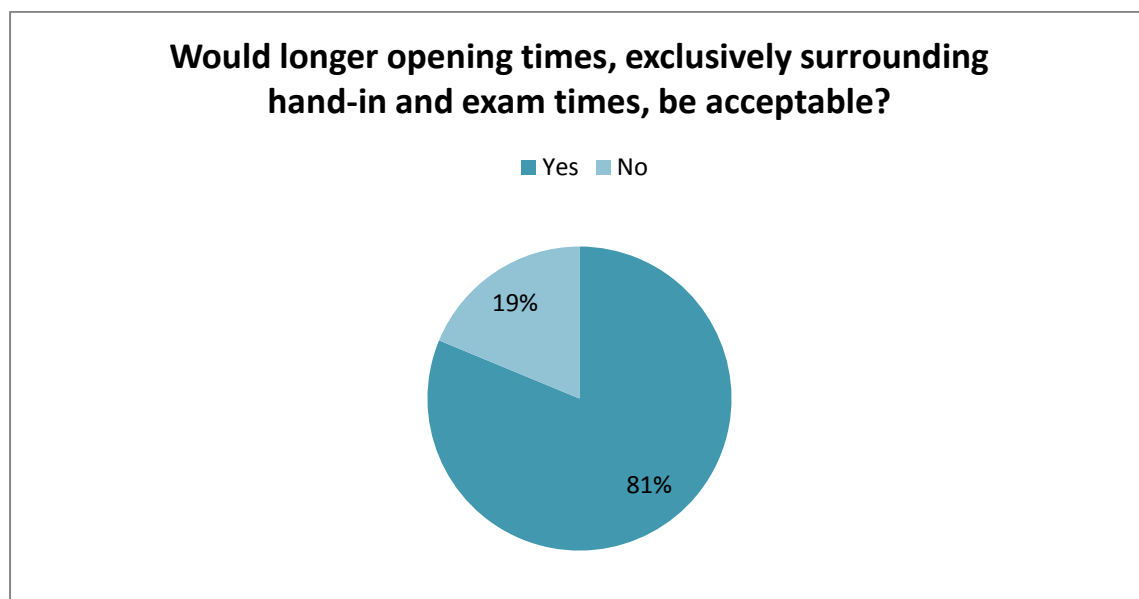
(Head of Strategy and Communications of Estates)

The following school breakdown provides further detail for question four.



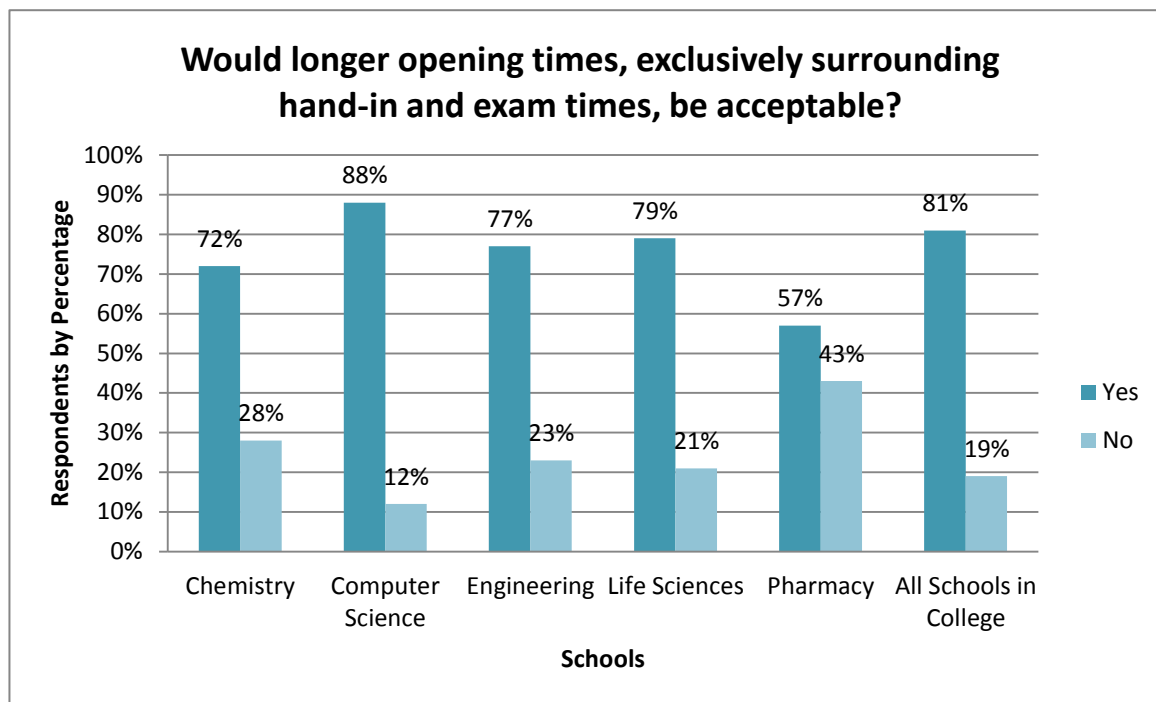
The chart above shows that Pharmacy students are the happiest with the opening and closing times of their building which is likely to be due to the current accessibility of their building and personal lab space. The respondents from the Schools of Computer Science and Engineering feel that their needs aren't fully met with regards to their subject buildings opening times. This indicates that their subject buildings such as the Engineering Hub may need to alter their opening hours.

Q5: Would longer opening times, exclusively surrounding hand-in and exam times, be acceptable? This question still linked to opening times and to which the majority of respondents answered yes.



81% of respondents inferred that they would like longer opening times of their subject buildings when hand-ins and exams are near. Due to health and safety concerns there is a level of understanding that 24 hours of certain areas may not be possible due to the scientific equipment within them. However, we can see with the current access to Joseph Banks Laboratory that Pharmacy students have, that it is possible to have a safe subject space which is accessible to those who need them for 24 hours a day.

A discussion on longer opening times around hand-ins and the examinations was undertaken with the University Librarian. One of the issues faced by the library when they undertook an approach to longer opening times, was that the hand-ins times were not consistent across all schools. Due to this, the situation became difficult to manage and eventually developed into the current opening times. To further our understanding into this question and supply the University with possible solutions, Student Voice Activity could be undertaken by the Students' Union led by College Student Officer to identify what time areas need to be accessible and whether we could develop a system that could determine levels of access by specific students.



Additionally, the chart above indicates that a high percentage of each school would like longer opening times, and not just those schools where the opening hours are currently dissatisfactory to the students within them. Because of this indication, a recommendation may be made to encourage subject buildings to remain open for longer hours, especially at assessment periods, although it is worth noting that this question was in regards to all buildings across campus.

To further investigate this Q6: 'Why?' was included. Themes and comments were:

"More motivated to do work when I am working outside of my comfort zone"

"Some students are doing projects which require access to specific labs and software"

"It would allow students to use essential resources to complete their assignments."

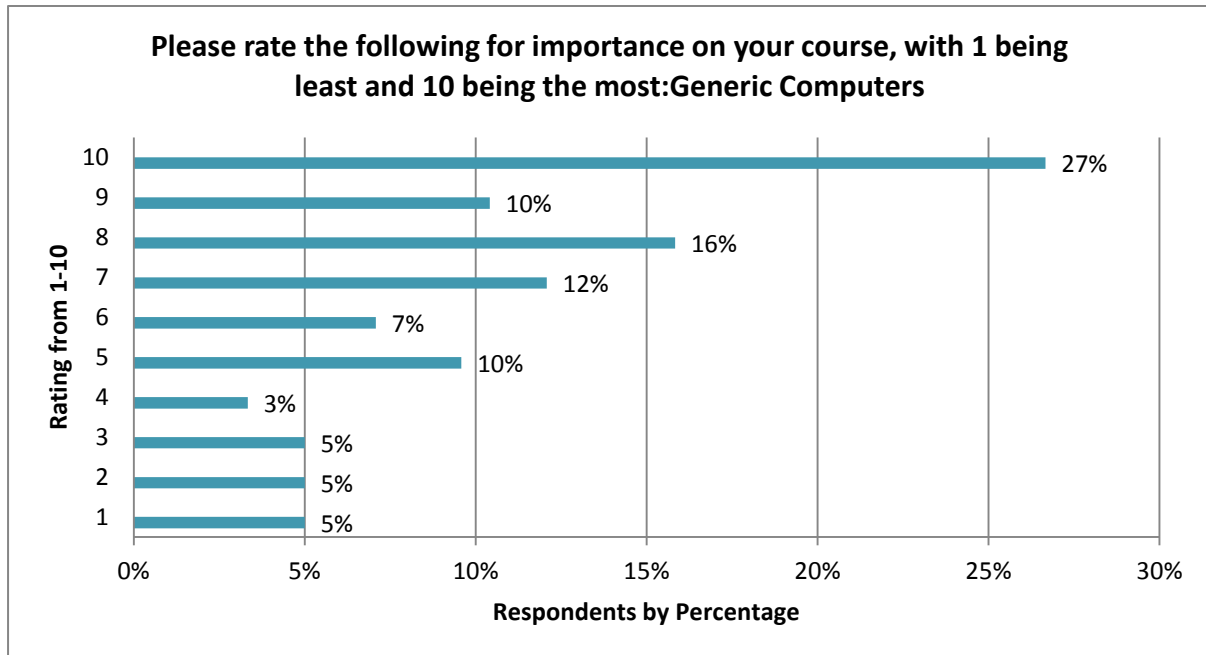
"Working in Lab environments can be much more productive rather than at Home or the Library..."

"If I wanted to work for a long time with a group on a project there would be a good amount of space and time to work in altogether."

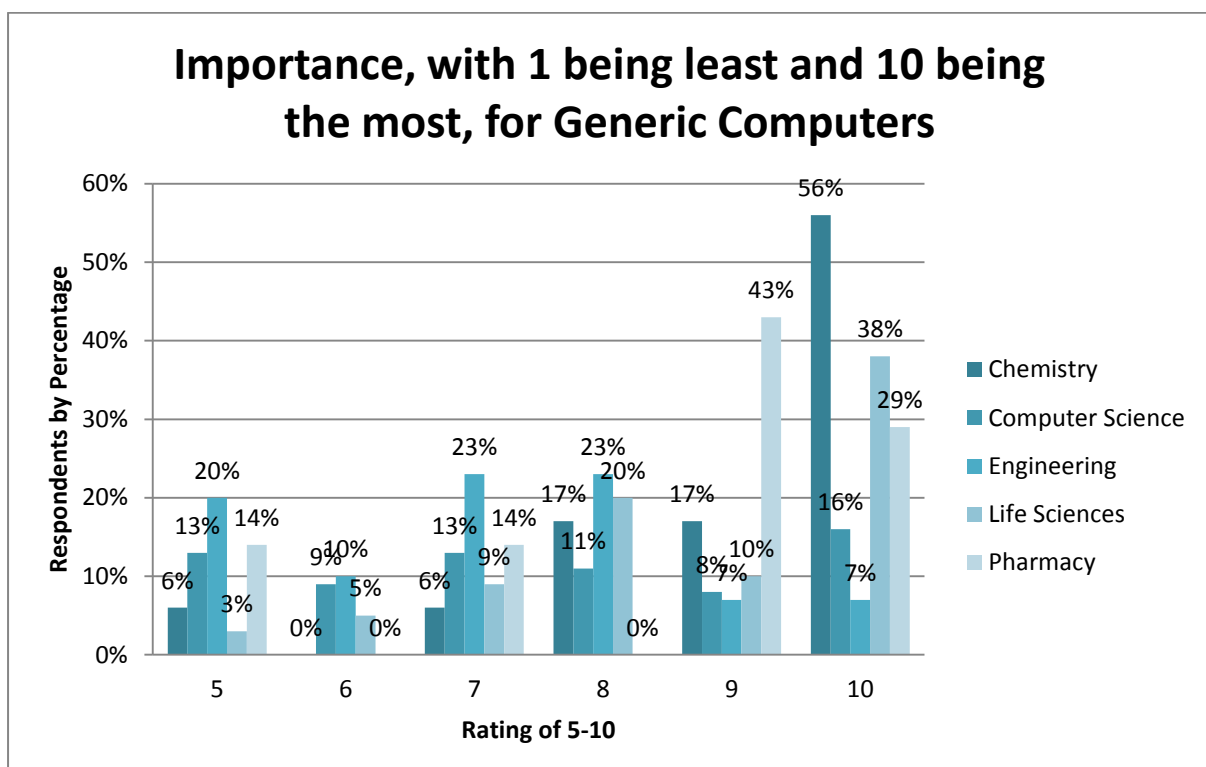
Q7: Please rate the following for importance on your course with 1 being least and 10 being the most: area.

The results have been split in order to identify easily the importance of each area to the respondents' course.

The first area was **Generic Computers**.

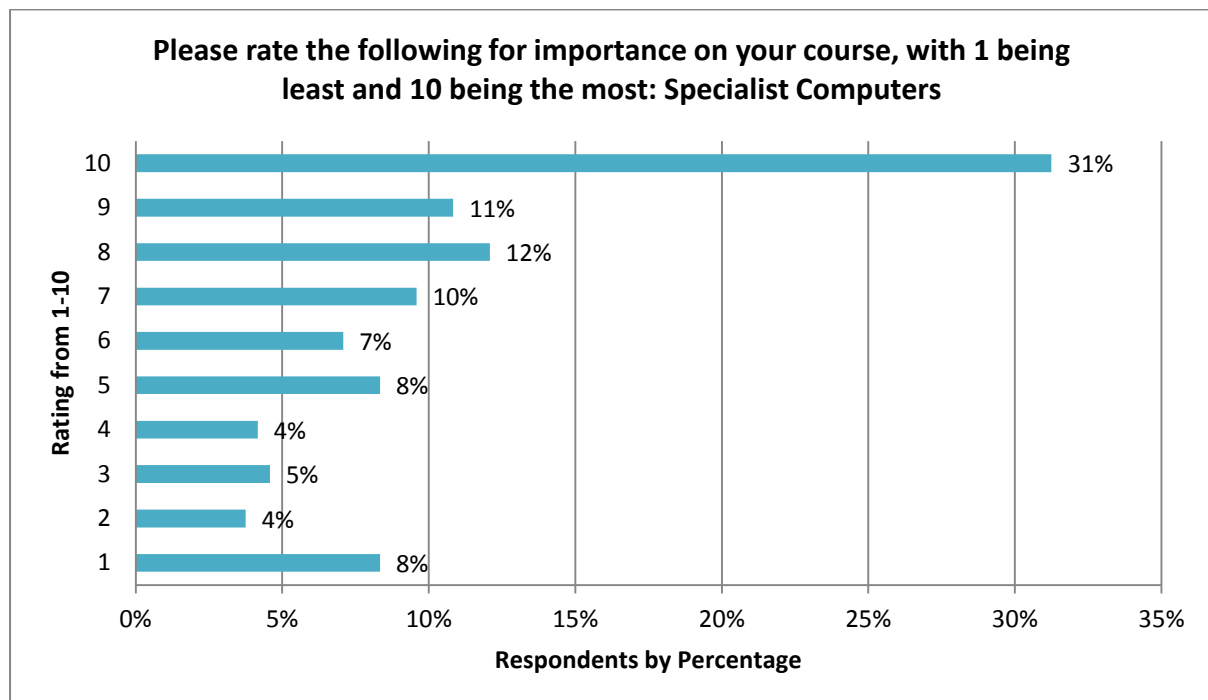


The majority of respondents rated this highly as being important to the course with 53% scoring 8 or above.

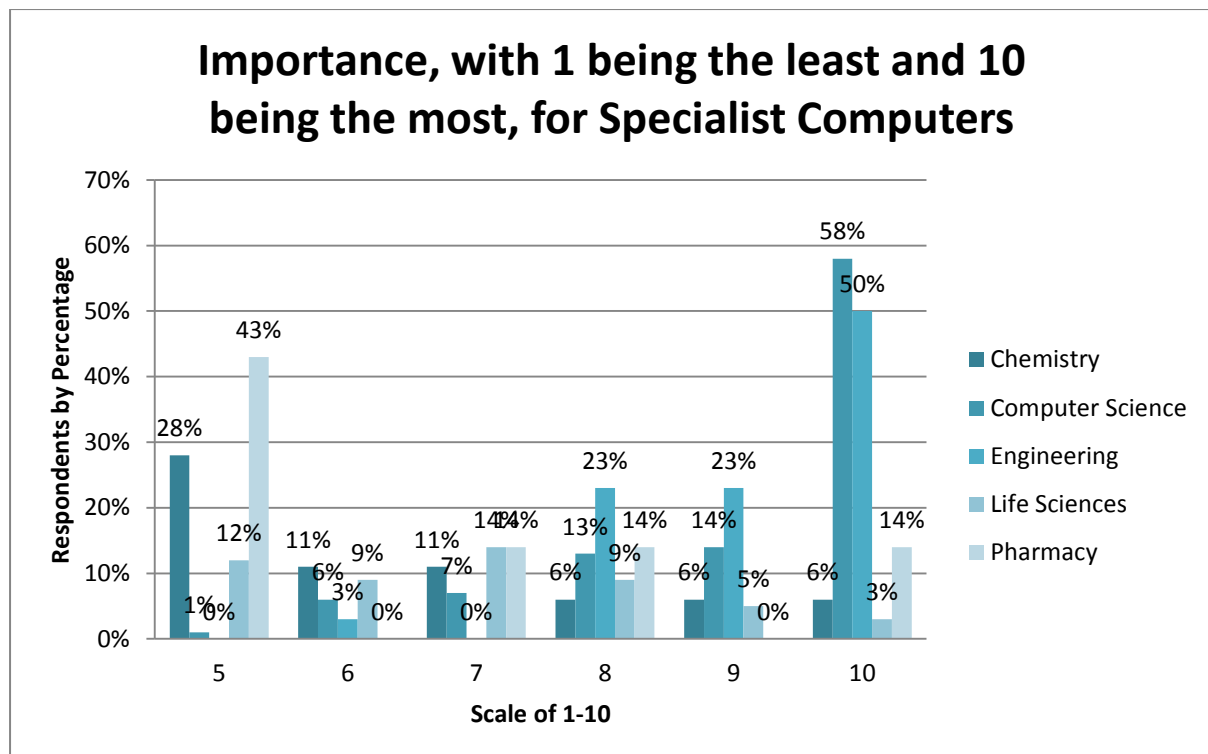


The exception to the above are the schools of Engineering and Computer Science, who use the generic computers less, there is a broader range of rating from their respondents across the scale of 1-10. It's important to be aware that within the range of schools within the College of Science there are different definitions for the word lab. For instance students within Computer Science would think of a computer lab whereas those in schools such as Life Sciences would think of your traditional practical lab.

The second area was **Specialist Computers**.

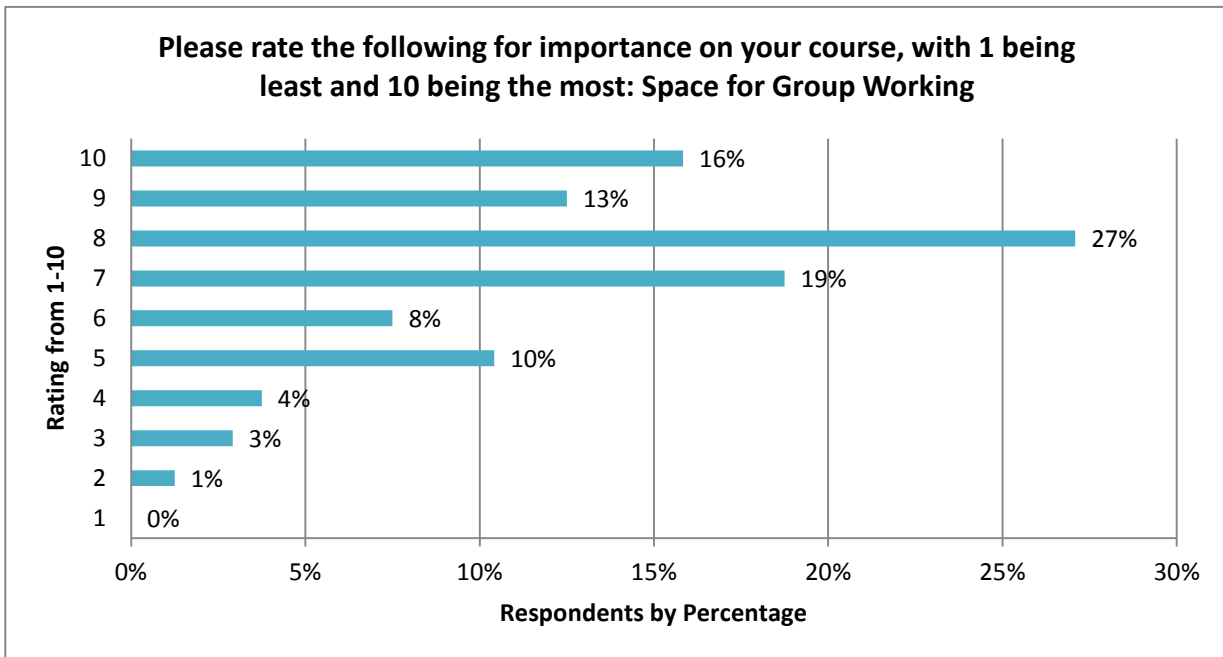


Specialist computers were also rated highly by our respondents, with 31% giving them a 10, and a further 23% scoring 8 and 9.

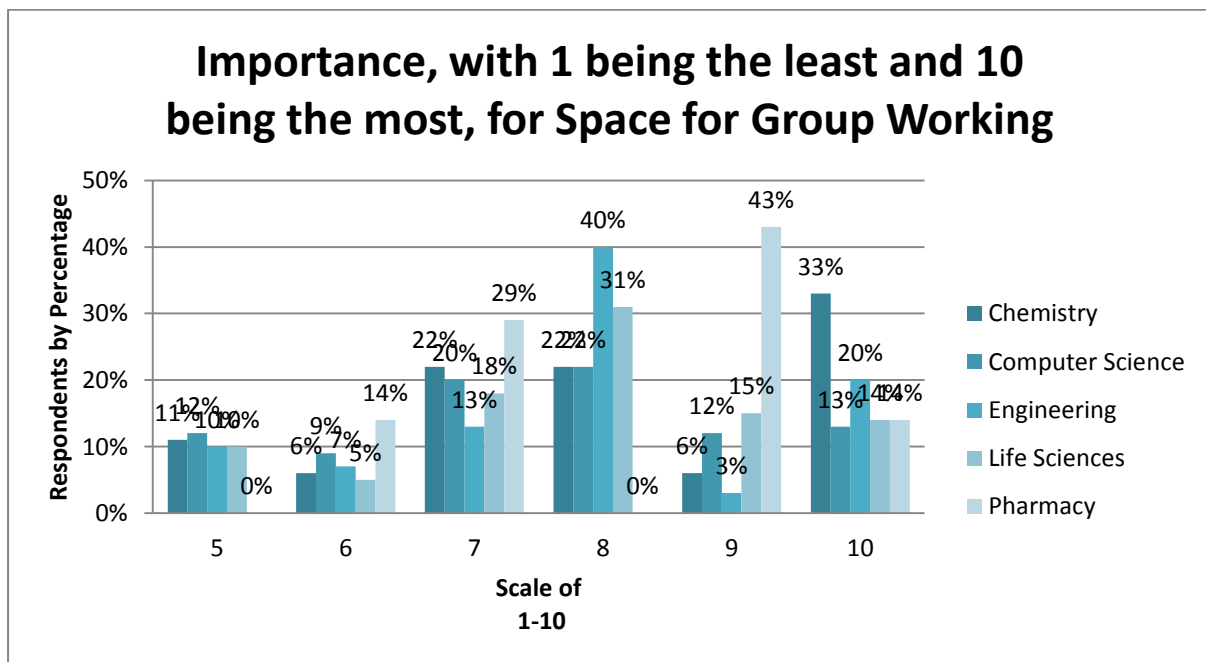


Again breaking this question down by school shows that the majority of respondents believe access to specialist computers is important. The graph above shows that the schools who mostly use Specialist Computers gave this area a mark of 10 such as Computer Science and Engineering. This is, as expected, the opposite of the previous area's rating. A facility which may address this is being developed within the plans for the Sir Isaac Newton building, and will allow access to course specific software outside of office hours. This development within the plans for the new build is to be recognised as good practice for enabling access and further study support. Not only will these solutions help students within each College but it will also help relieve the pressure on the University Library at peak times of the year.

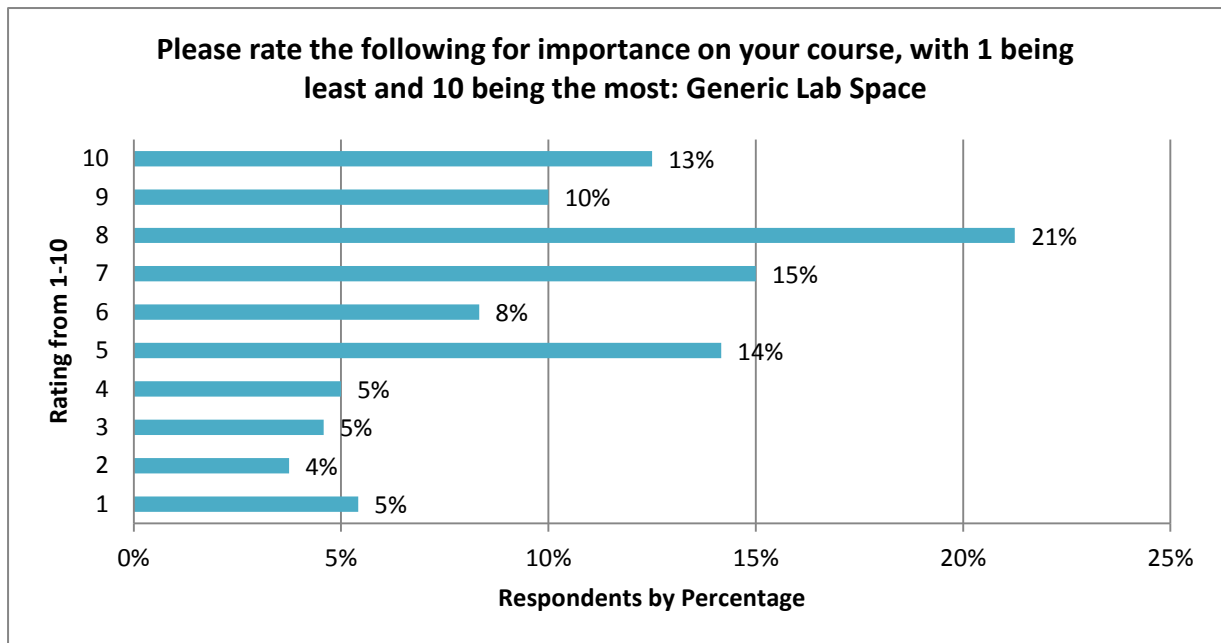
The third area was **Space for Group working**.



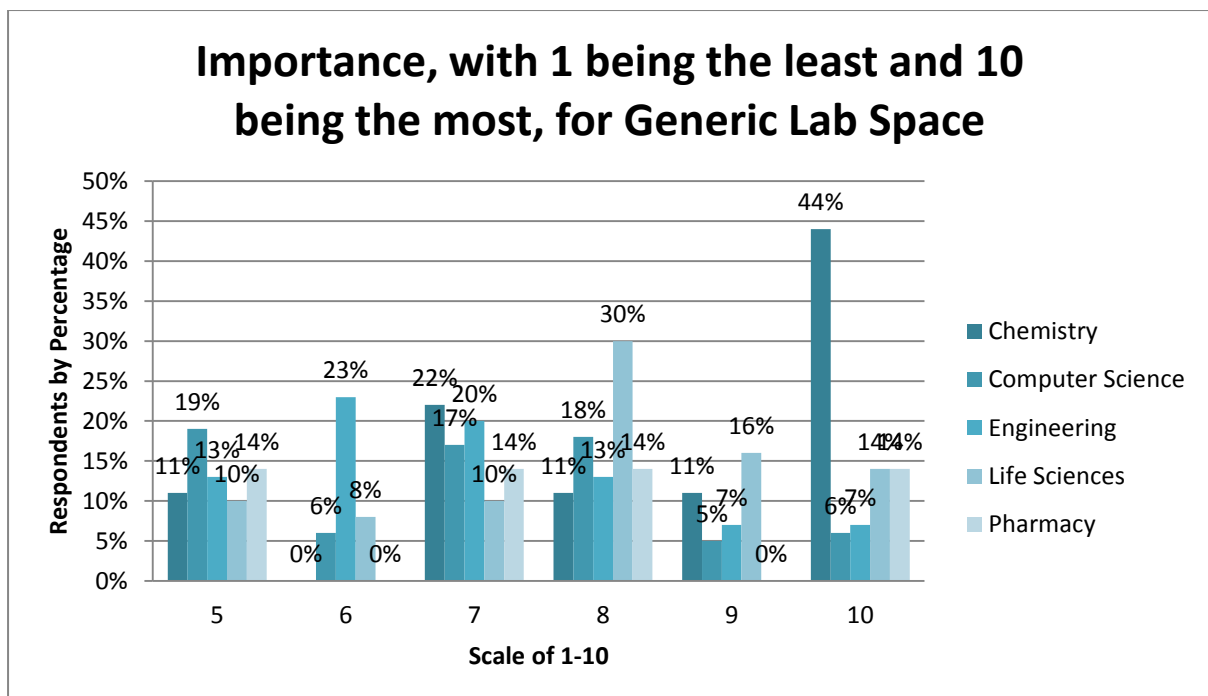
This has been mentioned in comments already within this survey but is something that varied in results from the students. The majority of respondents still rated it quite important with 56% of respondents scoring above 8, however, only 16% gave a score of 10. We can see below, that most schools had a majority of importance from seven up, but these charts also indicate that it is not necessarily as important as the access to generic and specialist computers.



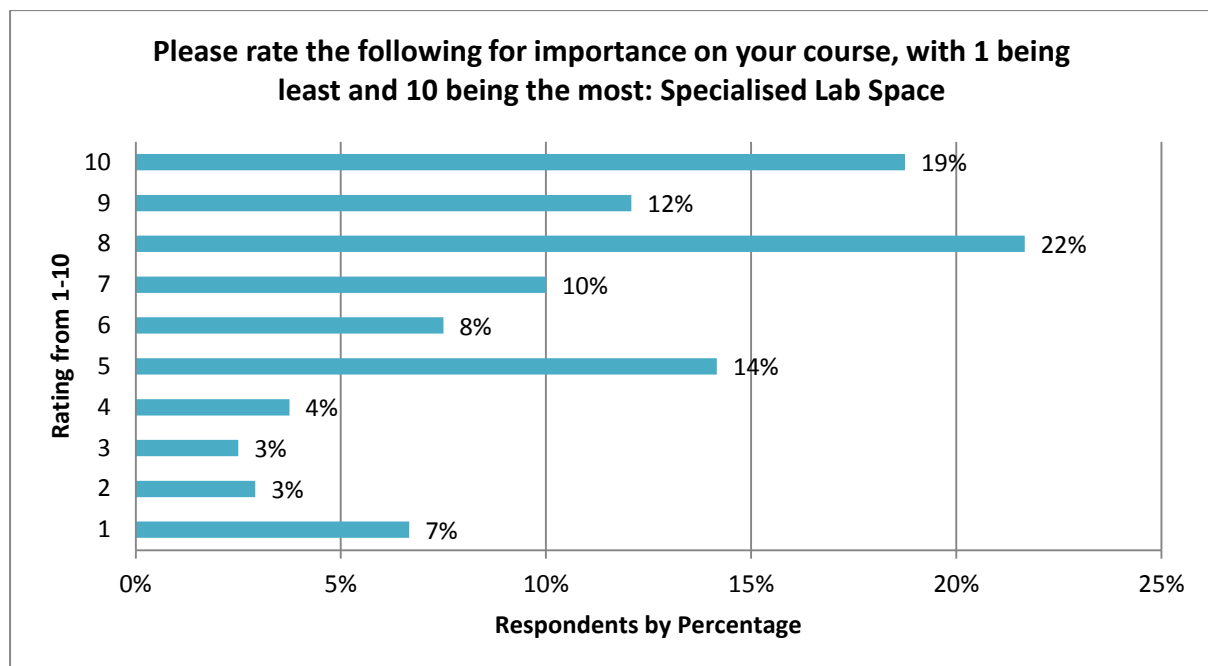
The fourth area was **Generic Lab Space**



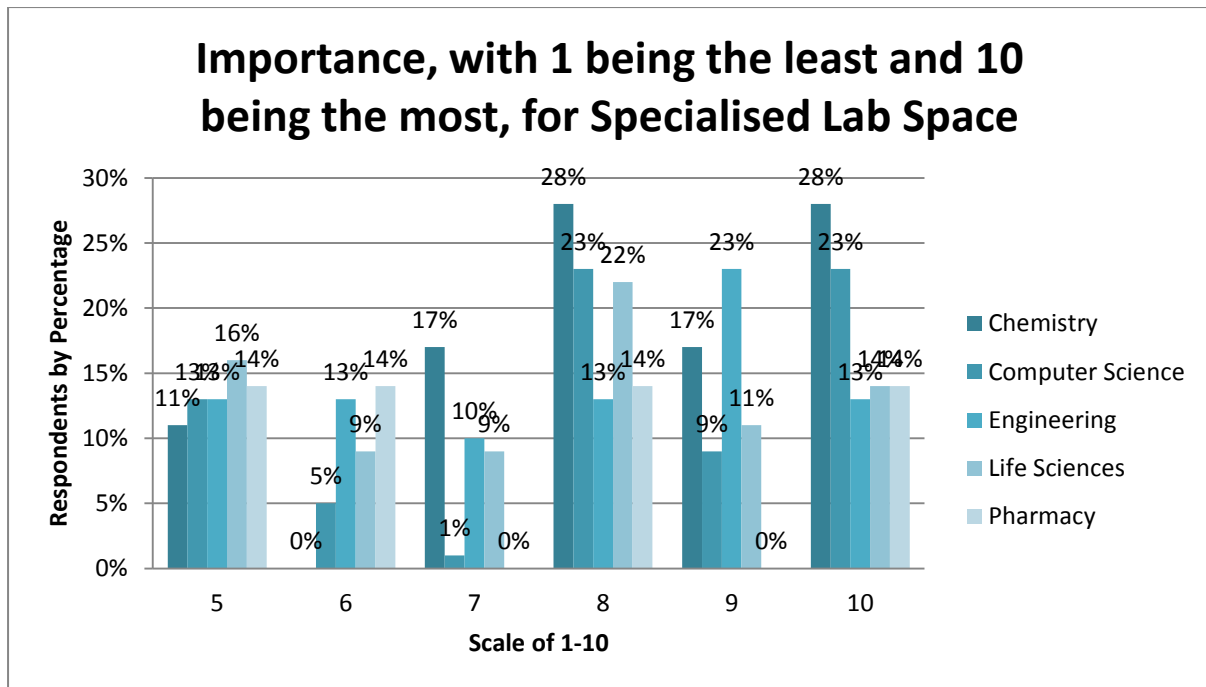
Next was the area of Generic Lab Space which again seemed to vary in opinion from respondents. Only 13% chose this area as high importance (10) but overall, 44% scored Generic Lab Space as 8 or above. Within a school breakdown, there are some interesting results, as it is significantly more important to Chemistry students. The lower rating in other schools may be down to different need to be in generic lab spaces. With the further development of void spaces within Joseph Banks the creation of more lab space for Chemistry should be of high consideration.



The fifth area was **Specialised Lab Space**.

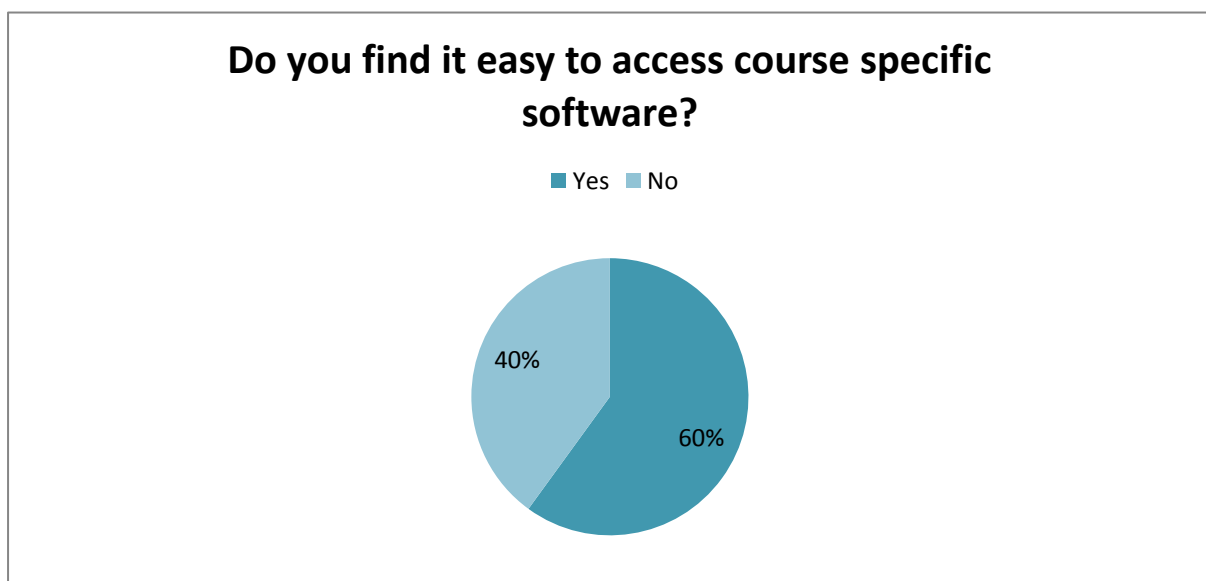


The final area was Specialised Lab Space, which a high majority of respondents were in favour of. 53% of respondents stated highly important (8 or above), causing this to be a key recommended. As mentioned before with regards to Generic Software, there is some difficulty in precisely defining what a lab is to students within this college due to the range of schools. The chart below showing the school breakdown for specialised lab space indicates two things; that this is more important to students than the generic lab space and that it is concentrated in three of the current schools.



There is a higher concentration of respondents within the 8,9 and 10 of the scale across all the schools as indicated within the overall chart at the top of this page. The schools that seem most supportive of this area are Chemistry, Computer Science and Engineering. Therefore it is important that as the Sir Isaac Newton and Joseph Banks buildings are developed the priority should be to create specific lab space for Computer Science, Engineering, Chemistry and the new school of Maths and Physics to avoid future issues with the school as it grows. The next series of questions were with regards to software.

Question 8: Do you find it easy to access course specific software?



The majority of respondents stated yes they do find it easy, however 40% of respondents still stated that they found it difficult to access, which is a large minority.

Q9: Please list what this (Course Specific) software is. Some examples were:

Visual Studio

ANSYS

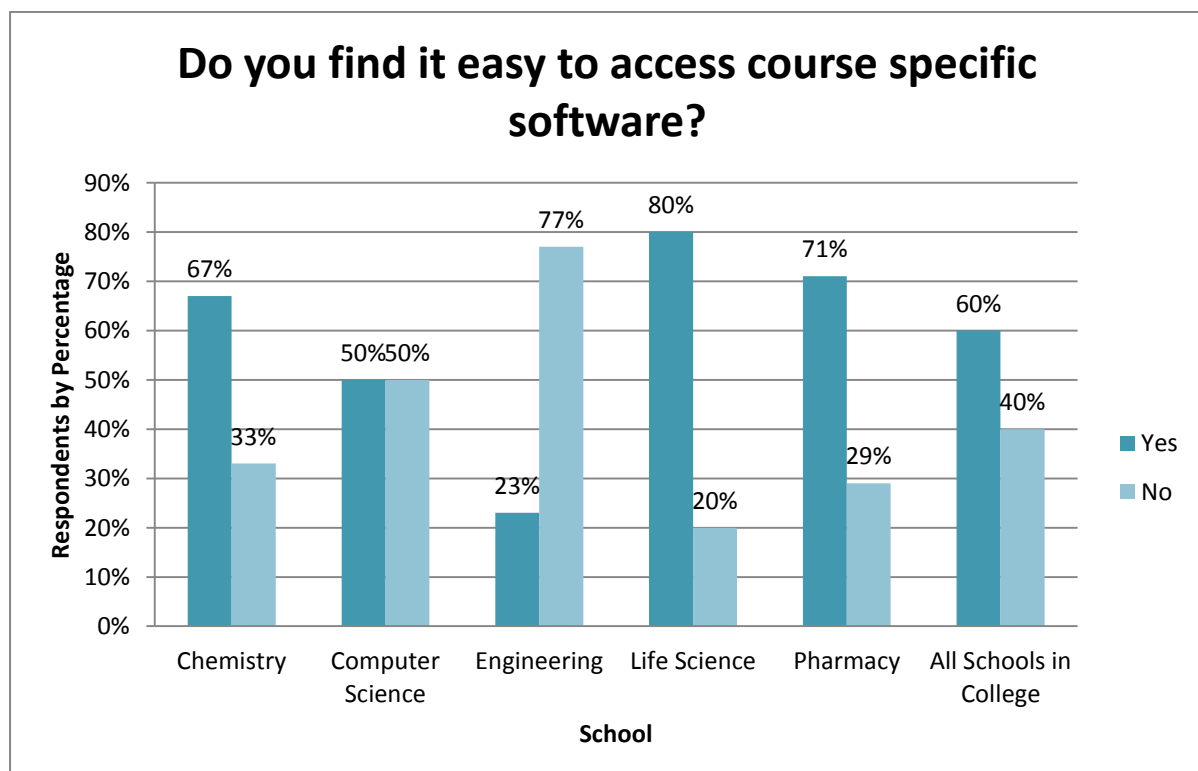
MATLAB

Unity

Minitab

It is often the case with specialist software that they are not available on the cloud desktop, which can be a result of various issues including the license being used or more simply the current limits of the capability of the current cloud desktop. For some students within the College, this may be resolved by the planning of school dedicated computer labs that has been included in plans for the Sir Isaac Newton building.

It should also be noted that in some cases students are able to download a copy of the software onto their own computer; however it is often the case that this is not well advertised. Equally not all students have computers, and if they do may not be of suitable specification to run the programmes.

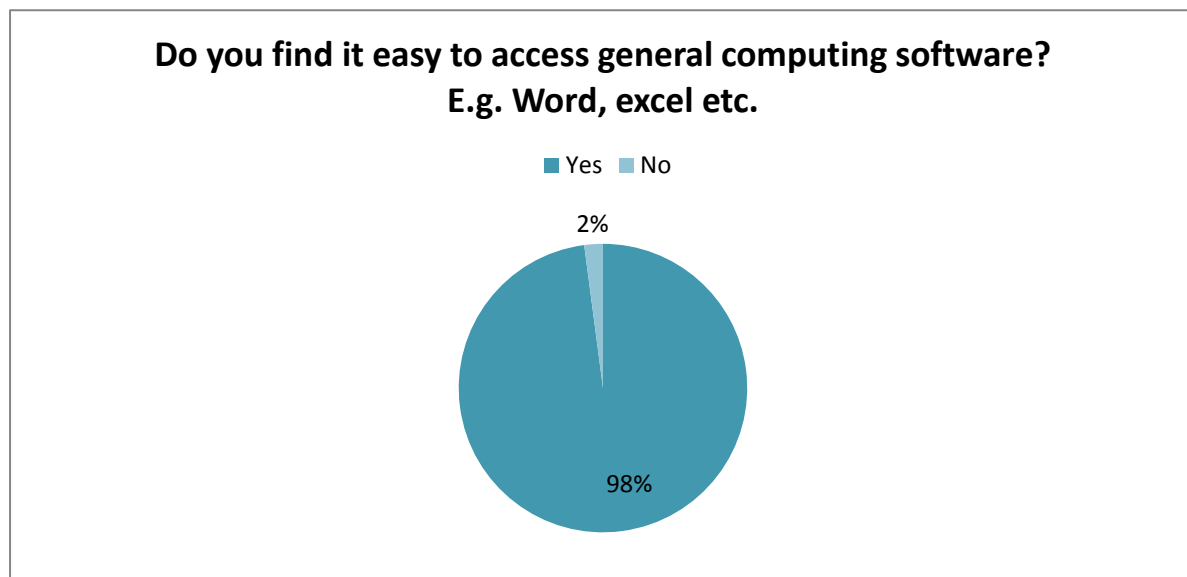


If we look particularly at schools and their ease of access, we can see that Engineering students are particularly unhappy with their current access to the software they need. Additionally it's interesting to see that respondents from Computer Science are torn as to whether it's easy or not, this may indicate greater access for certain levels of study. For these two courses particularly this may be due to their lack of access to their subject buildings as mentioned previously.

If the solution to opening hours concern is not to extend them and allow students access to this specialist software, then perhaps there is a need to look to where this software can be accessed generally within the University e.g. is it on the cloud servers or available in the library. After discussing this data with the University Librarian, an interest in a site license for software was noted. Further to this there was a discussion about the possible provision of specialist software available on a larger number of the computers as opposed to the current small number.

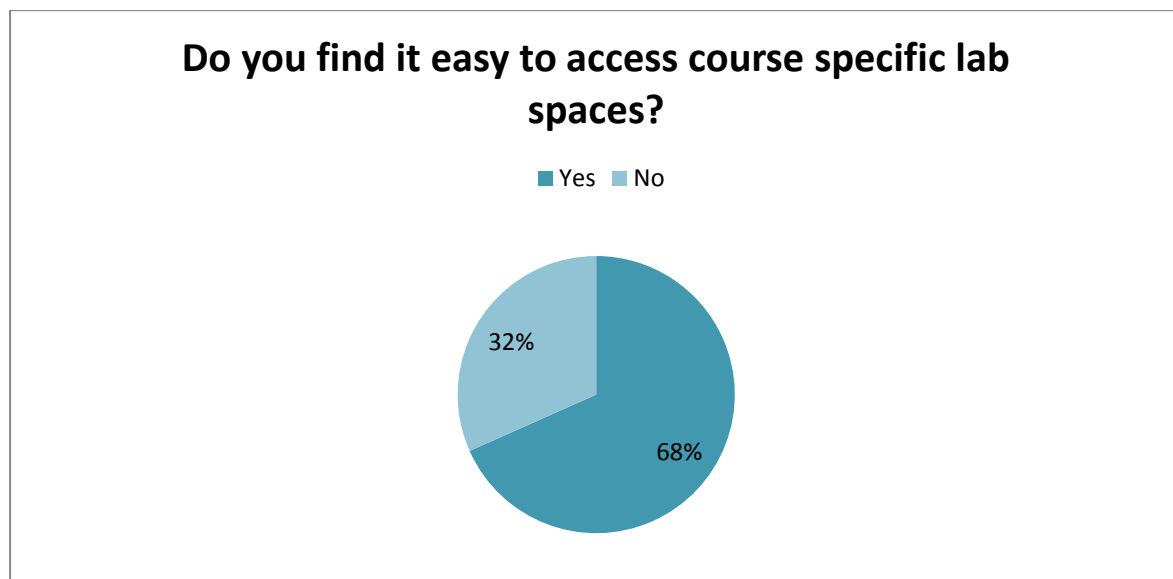
Further to this, there is the question of why students are finding it difficult to access this software. Working with partners in the library and ICT we should undertake student voice activity and possibly focus groups to understand what software is needed most in generic computer spaces and what the current barriers are to accessing these software packages.

Q10: Do you find it easy to access general computing software?

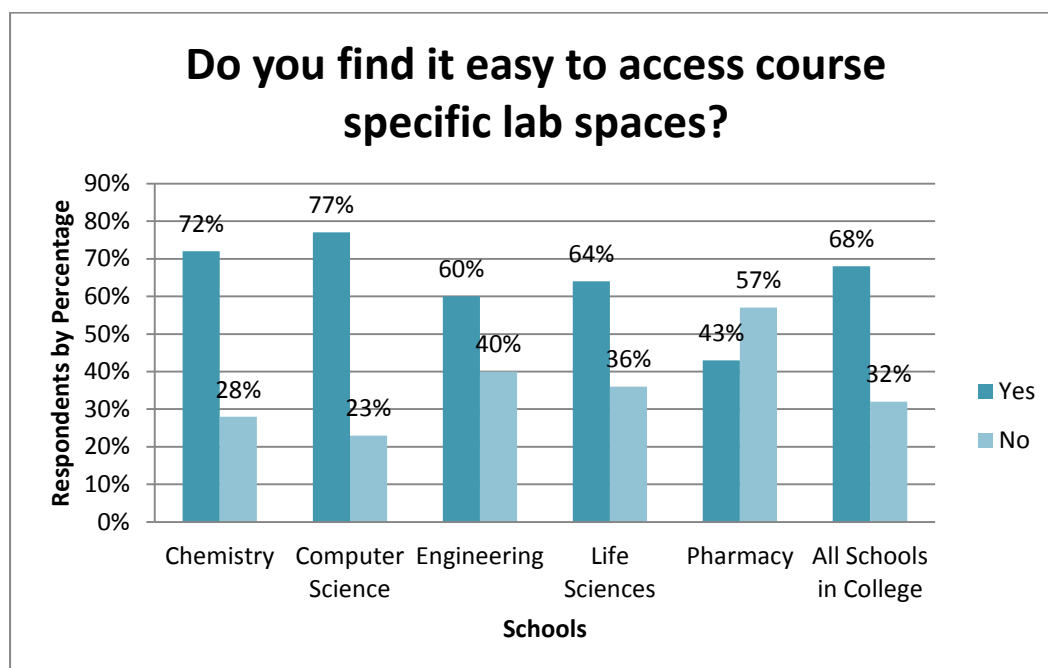


Only 2% of respondents answered no to this question. This may be due to some computers not having the right version or the up to date version that would suit their needs. This further supports the need for additional computer with the latest version of general computing software installed. This would not only benefit the College of Science students, but also students from other Colleges within the University.

Q11: Do you find it easy to access course specific lab spaces?



The majority of respondents selected "Yes" (68%) but the minority, again, is still quite large. Specific Lab Space is something that students may need time in not only when it's timetabled but to carry out research or complete group work and the like, in order to complete various assessments.



A breakdown of schools again clearly shows who is most dissatisfied with their current situations. Further questions may be that there are not enough facilities for students within their buildings, due to sharing with other schools, and possibly there is a need for subject areas to equally distribute the time spent and required within the labs equally amongst all relevant areas.

We should include this in our further research with the Library, ICT and Estates to again better understand why access is limited to a significant minority of students within the college.

'Q12: Please list which labs these are' was asked of students to inform which labs they were considering when answering question 11. A small selection is listed below:

Computer Labs A, B and C

Engine Test Cells, Engineering Hub Level One

MHT

All labs in Science building

JBL