Learning Innovation

Student Device Usage Survey

Fourth Edition – Findings Summary

November 2020

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The Open University

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Prepared by Andrew McDermott (Learning Innovation)

Introduction
The fourth edition of the Student Device Survey, carried out in November 2020, marks two years since we started tracking student device usage at The Open University, and is the second edition of the survey to be carried out during the COVID-19 pandemic. Once again, we are looking to track trends relating to the usage of smart devices within The Open University's Curriculum Design Student Panel (CDSP), a group of students which is representative of the overall University student population. This time around we will be comparing the data with the previous three CDSP cohorts, going back to April 2019, so we will be looking to identify any longer term trends and perhaps some short term trends and adjustments since the first COVID-19 lockdown in March 2020.

To explain once again the purpose behind these surveys, we sent out the original survey in April 2019 in order to gather some data that would be used to inform and guide the setup of the Smart Tech project in the Learning Innovation team in LDS. The project was initiated to investigate the potential benefits and impact of smart devices on student success and the data from the surveys has been extremely helpful in helping us establish hypotheses and experiments that now form the basis of the project. While the Smart Tech project is currently on hold, due to the inability to continue with it while we are working away from campus (and therefore without access to our specialist network and devices for testing) we have continued to send out the survey every six months as we believe the information we are gathering is vitally important. It is perhaps even more applicable now, while students are looking for new ways to support their learning while in lockdown and turning to new device types and other technical solutions.

We will, therefore, continue to run the survey every six months in order to provide additional and current data to continue guiding the research we are undertaking, and also to check if the experience of the current cohort of CDSP students is particularly different to previous cohorts. We also use the data to make a comparison of the experience of our students against commercial and market trends, which provides an additional insight for us to progress the Smart Tech project.

Survey findings
Fourth Edition
Following the same process as for all previous editions of the survey, we ran a short survey with the Curriculum Design Student Panel to ask the new cohort of students on the panel a set of questions about their device ownership and usage. We kept the questions identical to those in the previous editions of the survey in order to help us easily identify any variations, although a technical glitch meant that unfortunately the sixth and final question in the survey set was not visible to students this year and no data for this was recorded. While this is frustrating, this question was more aligned to future potential Open University policy and should not have a large bearing on the data analysis.

In this fourth edition, 524 students responded fully, around 100 more than the previous edition, while the cohort was also of a larger size to any of the previous cohorts (3028 compared with 1970

in April 2020). This does mean that the response rate was slightly lower than any previous survey, at just over 17 percent, but with many more students taking part we are happy with the response.

As has become the theme with these surveys to date, the responses (Appendix A) provide an insight into the types of devices students have access to, which of these they use regularly for study and why, and which they would like to use more. From this (and by combining this data with the data from previous surveys) we are able to obtain an insight into the devices that The Open University could potentially target more use of in the future, as well as where not to spend unnecessary time and resource.

From the latest data, the main conclusion we can draw is that there has been an increase in the students identifying their access to and usage of smart devices, particularly Smart TVs and streaming devices, although games consoles and smart speakers are also similar. There is also a decrease in the number of students who have access to and use a desktop PC, which is a trend that has continued since the first edition of the survey.

On the whole, the current cohort exhibits very similar characteristics to previous cohorts across the remaining range of questions, particularly around usage of devices for study, where despite the increased number with access to the latest Smart devices, they are not used for study (although this is not necessarily through choice, given the University does not currently cater for these device types in its content delivery.) However, compared to the previous cohort, this cohort of students do use smart devices slightly more for non-study purposes, to a level that is more in line with the cohorts in the first and second editions of the survey, which does perhaps suggest that the cohort in the third edition were not typical of their peers with regard to their device usage patterns.

Another interesting and unexpected finding, which continues a trend set by the third edition cohort, is that smartphone usage for study is down slightly again. This is possibly due to the current COVID-19 / lockdown situation and more people being at home and using alternative devices rather than smartphones, but given the University's continued and increased roll-out of the OU Study app, where we would have expected usage of smartphones to increase, it does indicate an interesting trend that we will need to investigate further.

However, once more, outside of a few devices for non-study purposes, the variances across all of data returned in response to the questions in the survey remained low compared to the previous cohort. As with past surveys, these figures are fairly in line with market trends, and the continued minor variances begin to suggest that the data returned is fairly accurate. Again, for some sections, the individual findings showed only one to two percent difference across the cohort's responses. The largest increases for any specific responses across this set of data were just nine and ten percent (Smart TV and streaming device usage for non-study purposes) and sixteen responses showed no variance at all compared to the previous survey (after rounding to the nearest percentile).

Access to and usage of devices

One of the key areas of interest to us remains the variety of devices that students have access to. This is because it allows us to understand the range of devices that students could potentially utilise, regardless of whether they currently use them or not. To ensure consistency and the ability to compare the data and establish trends, the variety of device types listed were the same options as before: PCs/laptops, tablets, smartphones, smart devices (including speakers, screens, TVs and streaming devices), games consoles, and VR headsets, as well as providing an 'other' category for anything that did not fit these options.

As we have done for each edition of the survey, we have specifically sought to differentiate between access and usage, so as not to conflate ownership or access with personal usage, as students may have access to a device in their household but will never use that device of their own accord. This is important to us for our goal of establishing advice to the University on what device types may need to be supported moving forwards, but it also allows us to understand student choice and motivations on the types of interaction they prefer.

The responses to this section (see Figure 1) again indicate that this cohort of students has access to a wide variety of devices. As we have come to expect from the surveys so far, traditional and commonly used devices for study purposes were well represented. 93% of students have access to a laptop and 94% to a smartphone, slightly up on six months prior, and access to smart devices in general has increased to a significant degree, with even tablet access up 3%, the first time we have seen an increase in this statistic throughout the surveys.

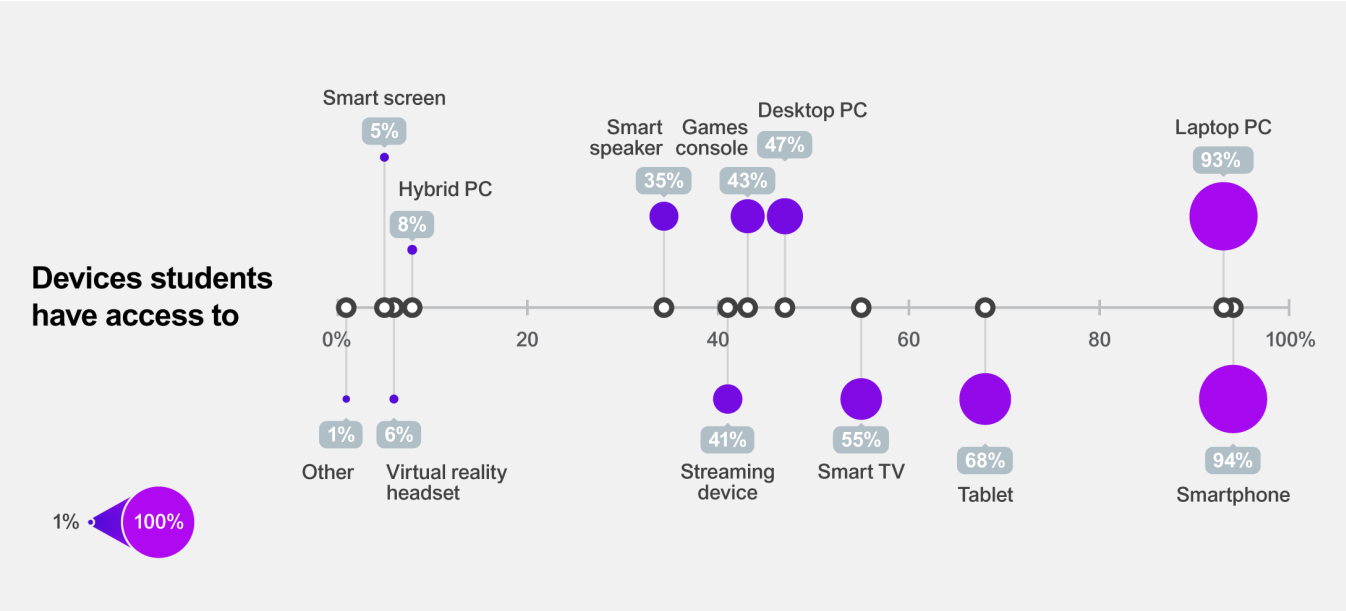


Figure 1 Device types that students own or have access to

Streaming device access was up 10% and Smart TV 9%, perhaps both boosted by student households investing in these devices to keep them entertained throughout the Coronavirus lockdown. Access to games consoles and smart speakers were also significantly higher (both +7%), although smart screens and Virtual Reality headsets both fell slightly -1%, the only other device types other than desktop PCs (-3%) to fall at all.

When looking specifically at personal usage of devices (Figure 2), the responses of the cohort indicate that almost 93% of respondents now use a smartphone (up 4%) and 30% use a streaming device (up 8%). Laptop usage remained the same, and while tablet and hybrid PC usage increased 1%, VR headset and smart screen usage fell by the same margin, down 1%. Interestingly, smart devices on the whole were significantly up in usage, with games consoles, smart TV, and smart speakers rising 4 to 5%.

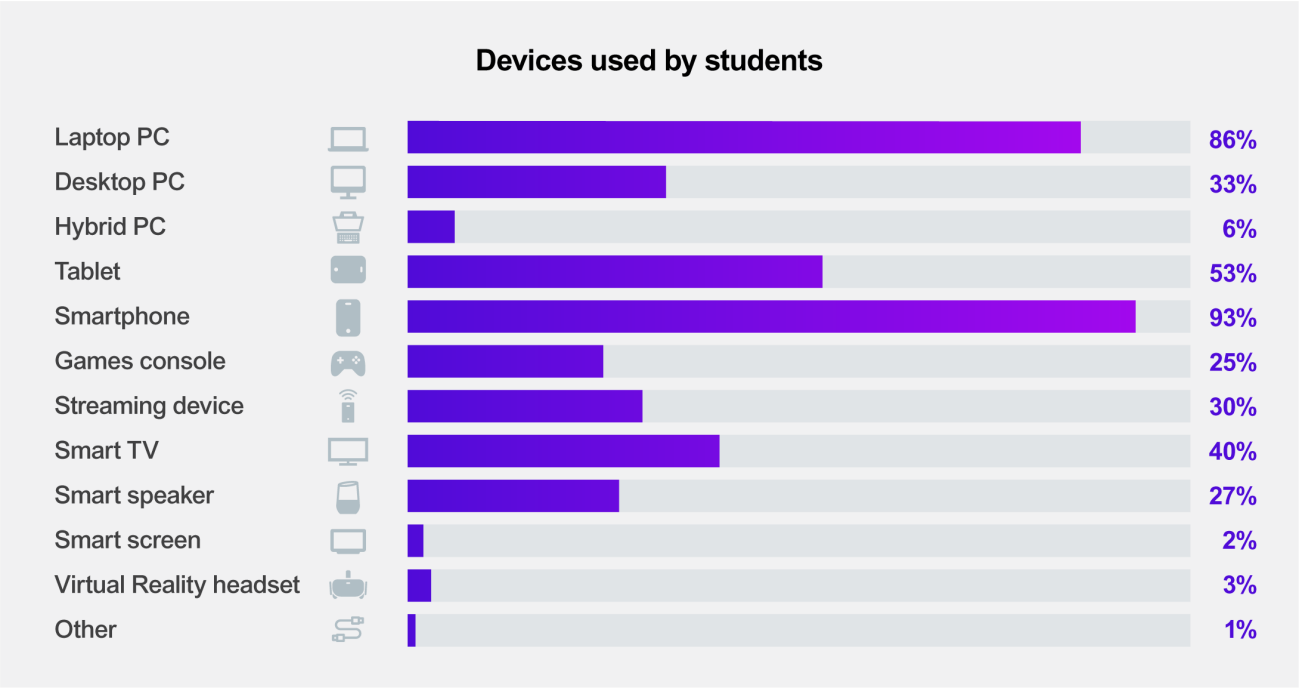


Figure 2 Device types that students use

An interesting element of these figures is that they are, overall, still well aligned with the most recent market data, as has been the case in the past three editions also. That is except for tablet usage, where the market shows a continued fall in usage in 2019, the latest data available, and for smart devices, where the uptake levelled off in 2019. This could indicate that our students are a little behind the curve now with regard to these device types, although the impact of the COVID-19 lockdown may not yet be apparent in the market data, as it does not yet take this time into account, having been published prior to March 2020. Our data is much more current, with this cohort being surveyed just over six months after the start of the first lockdown, so trends may well be in line with the market once we are able to make that assessment on release of the data, which will hopefully be later this year (2020). The higher use of tablet devices by students compared to the standard consumer could also be related to their previously advertised benefits by technology companies for educational usage, which lead to many students purchasing a variant.

With regard to the other more traditional device types (laptop, PC, smartphone), our data is in line with the data and the trends have matched for each edition of the survey, suggesting much less volatility and therefore a more predictable and dependable level of alignment with the market.

Device usage for study

A core purpose of this survey is to identify which device types students are using for their studies, so once again, the survey asked students about their device usage specifically for study purposes.

The trend with the previous editions has been consistent for these responses and this edition is no different; traditional devices commonly used for study, such as desktop and laptop computers, were very well represented. The survey (Figure 3) found a 1% increase in students using laptops for study, which is in line with the consistent reporting on laptop usage since the first edition of the survey. However, the number of students using desktops for study reduced again, by 4%, since the last survey. This is now a fall in desktop usage of 15% since the first survey in April 2019.

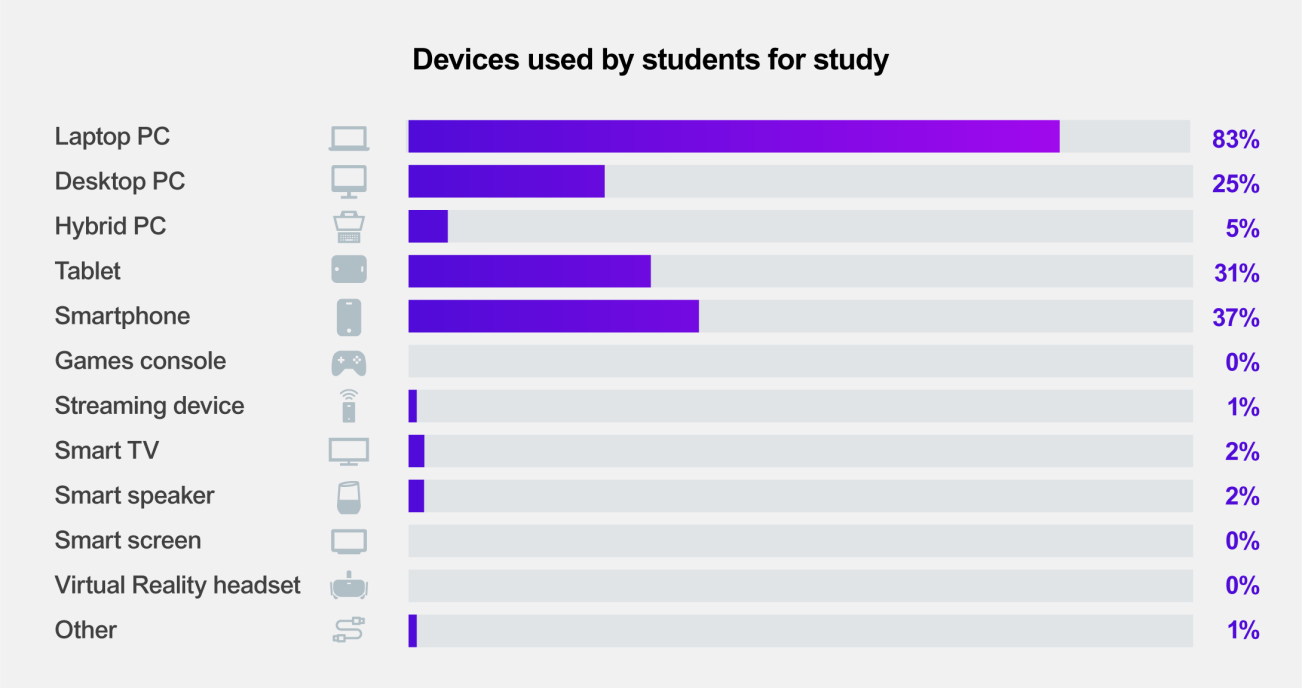
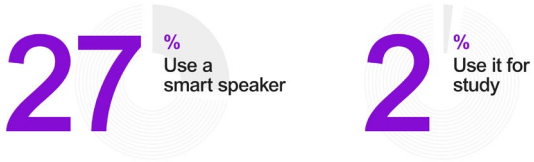


Figure 3 Device types that students use for study purposes

While this is in line with industry trends, this 15% drop remains significant and could have long term implications for content and module design. While it is arguable to point to the COVID-19 lockdown being a potential factor in this, as people are working from home primarily and won't have access to their work machines (primarily desktops), the number of students reporting access to a desktop machine was 47%, and only fell 3%. This could suggest that this is a choice, rather than a consequence of other factors. Tablet usage for study remained at 31%. While industry trends show a decline, this survey data suggests a levelling-off for tablet usage over the past year.

Smartphone usage fell marginally, down 2%, but remaining fairly consistent with findings over all survey editions. However, it is interesting that this number fell, as in contrast the number of students reporting they personally use a smartphone for non-study purposes actually rose 4%. It is also interesting as the OU Study app was released to many more University modules for their content, so a reduction in the number using a mobile phone for study is in contrast to what we might have expected. Lockdown, however, could potentially be a factor here, with students not requiring use of a smartphone as much while they are less mobile and have access to devices with larger screens. This possibly needs additional research to establish what exactly is happening here and we will continue to monitor this in future editions of the survey.

In other findings, the percentage of students currently utilising smart TVs, speakers, or screens for study remained consistent with the previous findings, up very slightly. This could perhaps be explained by a continued lack of any University materials being delivered to these devices or any usage of them by the University for learning purposes. Indeed, the findings from this entire section of the survey are very similar to what we have seen previously, with only desktop usage really showing any significant sign of decrease, and this is perhaps to be expected while the University has not changed its delivery mechanisms or content in any significant manner in the past six months. We will, however, continue to monitor this data in future surveys.



We do, however, have some insight into the motivations of students with regard to their study behaviours or habits, as we again asked if there were any reasons preventing usage of a device for study (Figure 4). The responses were relatively consistent with those provided in past surveys, although time of study (-3%) and WiFi/mobile data limitations (-2%) fell, which is perhaps could have been predicted in light of the national lockdowns. Only the 'no reasons' response rose with any significance, although this addressed a contradictory fall in the previous survey and is now very consistent with the first and second edition responses for this same question.

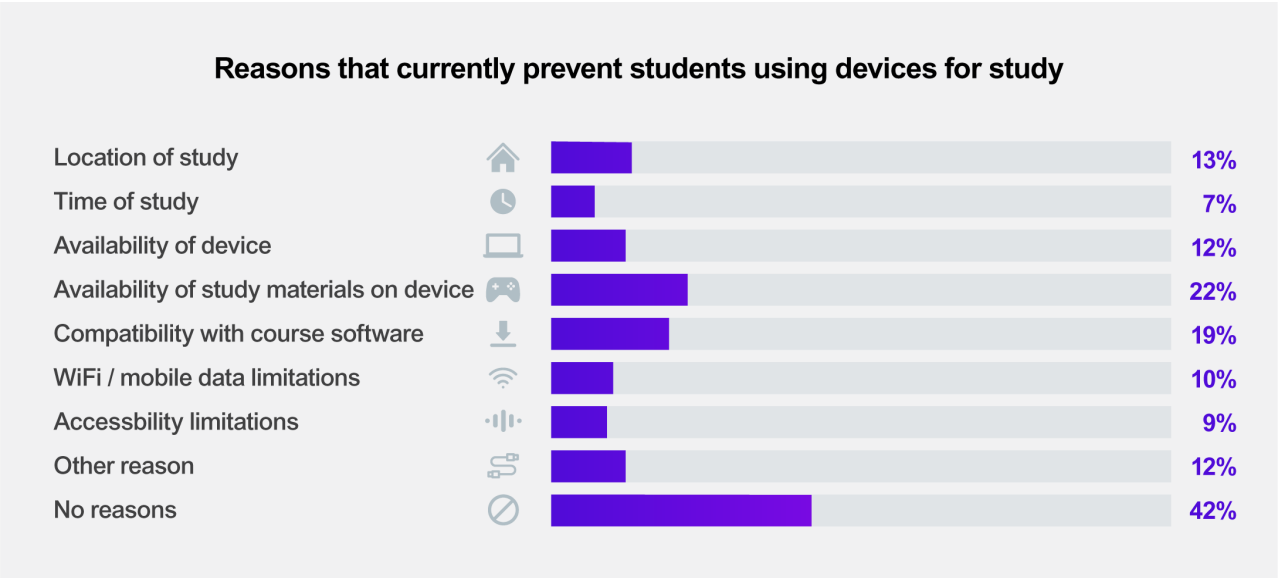


Figure 4 Reasons preventing students from using devices for study

Perhaps significantly, 41% of respondents cite availability of study materials on a device or their device's compatibility with the course software as a reason for not using certain devices, suggesting we haven't as a University addressed this issue as this figure has risen 3%. When looking at this potential problem some more, we can perhaps use the responses to the fifth question, where we asked students whether they might use other devices for study if they had access to them, to help us ascertain if there is a problem we could address.

The responses (Figure 5) show that 35% of respondents said they would not use another device for study even if they had access to it. This is down slightly on the response to the last edition of the

survey (-2%) and has continually decreased since the first edition (-9%). While this appears to show a trend in students being more open to alternative device usages, it does show that a third of all students that responded still wouldn't change their behaviour without any specific implied benefit. This is definitely an area we will investigate further in the coming year.

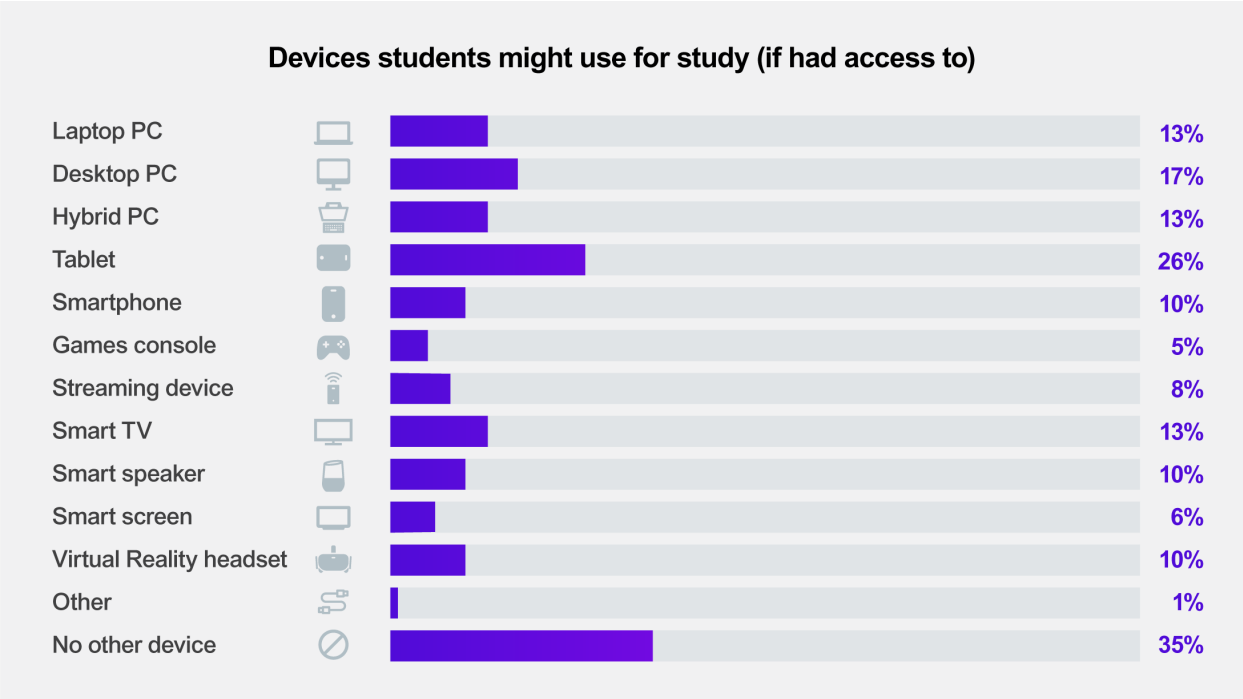
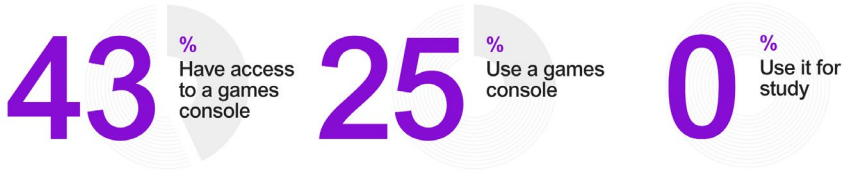


Figure 5 Devices students might use for study if they had access to them

More widely, the responses actually indicated that students would be open to using desktops (+4%) and Hybrid PCs (also +4%). Tablet usage was also up 3%, all suggesting traditional devices are still potentially of interest to students. Interestingly, more modern smart devices (TVs, speakers, screens, streaming devices) showed little sign of change overall, which could suggest that those additional students that have started using them for study (Figure 3) already account for the total number of those willing to use them. VR headset study usage potential also fell 4%, while games console usage potential was unchanged. All in all, modern devices did not fare well in the responses to this question, but as with some other areas above, these findings suggest further investigation is necessary as they contradict slightly student behaviour / device usage for non-study purposes.



Unfortunately, there was a mistake made in the technical delivery of the survey with regard to our usual sixth and final question: "*If the OU was to provide study materials on a device that you have access to but do not currently use for study, would this make you reconsider using the device for study?*". This error meant that the question did not make it into the final delivered survey and students were unaware it existed, so we did not gather any data for this question this time around. This, again, furthers the need to do some additional investigation in the period between this and the next edition of the survey, due to be sent out to the next panel cohort of students in April 2021.

Correlation with sector evidence and other research

The findings of this fourth edition of the survey are somewhat simple, in that they do not indicate any particular overall change in any of the trends in device usage, other than a continual decline in desktop usage and a slight uptick in the access to and personal usage of smart devices. As such, they do continue to suggest that device usage is still more widespread than we thought at the start of 2019 and such usage is still more widespread than we currently accommodate for in learning material delivery via our VLE and other digital channels.

However, they do demonstrate a continuing alignment with core industry data. The closest comparison we can make confidently is that of our student device usage responses (Figure 2) to those made in reports, such as, for example, GlobalWebIndex's flagship report on device ownership (Figure 7). To clarify, industry reports tend to conflate ownership with usage. They do not generally differentiate between access to devices and ownership in the manner we have in our surveys. The industry reports tend to assume devices in households are primarily owned by the adults and reports and surveys do not question about access to devices elsewhere (for example, at work), in the way we have.

If we agree to use these two assessments to be looking at roughly the same behaviour, we can see (Figure 7) that our student data aligns extremely well with this data. On many of the groupings (smartphone, smart TV, games consoles, VR headsets, etc) it maps to within one or two percent. If we combine laptop, desktop and hybrid PC usage into one figure (as GlobalWebIndex have done) the score is only a few percent different.

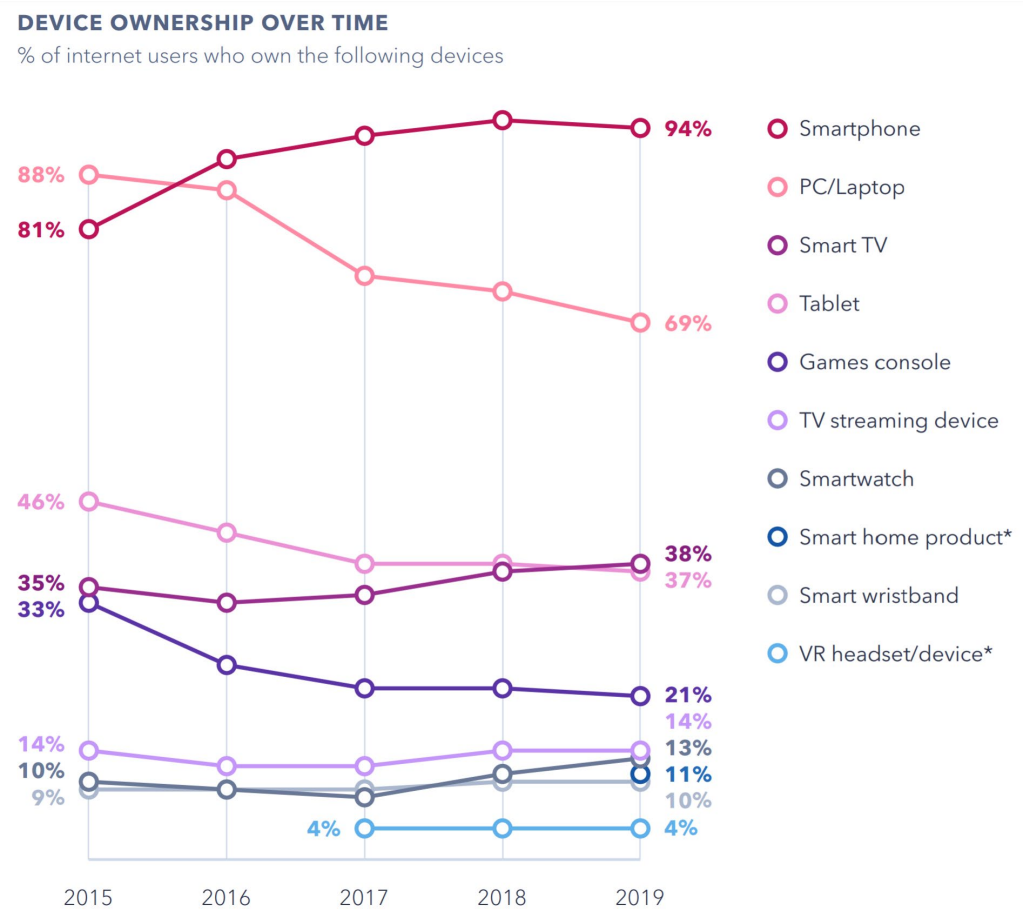


Figure 7
GlobalWebIndex 'Device flagship report', 2020

This alignment of industry data and our own student cohort data is encouraging and has been demonstrated for each of the past four editions of the survey, so does not appear to be a blip, but rather indicative of a longer term alignment. The new data from the fourth edition of the Student Device Usage Survey also continues to support research undertaken into mobile learning among Open University students by Cross et al. (2017), which explored student mobile learning and the changing nature of how students are interfacing with their devices. It again correlates strongly with data from surveys carried out by EDUCAUSE in recent years (Figure 8).

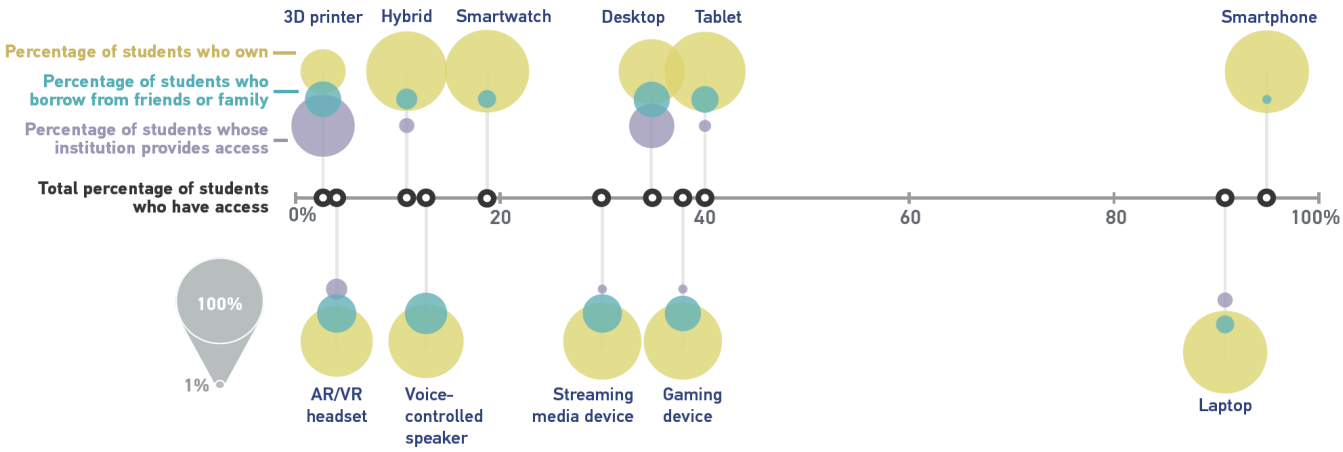


Figure 8 ECAR Study of Undergraduate Students and IT, 2018 – Student device access and ownership

Conclusions

Overall, the findings of the fourth edition of the survey show little variation from the trends of the data of the previous three editions of the survey when looking at the usage of smart devices.

It is therefore still possible to draw many of the same conclusions:

- Students currently primarily use a laptop for study, but a significant percentage use a desktop PC, tablet and / or smartphone.
- While students own many devices, the majority of these are not currently used for study.
- 93% of students now use a smartphone on a regular basis, but only 37% use one for study.
- 40% of students have a Smart TV that they use for personal use.
- Connectivity, availability of device, study location, time of study, and accessibility limitations were all rated at =<15% and again showed a decline in the number of students they impact on when students were asked about reasons for not using a device for study, indicating once again that they are not hindering factors in device adoption for learning purposes.

Overall the responses showed a consistency with previous results and alignment with market and consumer trends. The only new particular conclusion to draw from our own data alone is that there was a significant increase in the usage of various smart devices for non-study purposes (with smart TVs and streaming devices being key drivers of this) and another decline in desktop usage (-4%), but these both align with the consumer trends. There were minor improvements, in that we saw less students reporting issues with data / WiFi or times of study, but overall things remained fairly stable in these results.

Further research and information

The initial purpose of the student device usage survey was to provide some current, relevant data to help guide the setup of the Smart Tech project, examining the various themes and issues which have been drawn, in addition to a number of new themes around digital literacy and accessibility. At present, the Smart Tech project is on hold, due to the inability to undertake testing while University staff work from home and we do not have access to our specialist testing network.

However, we will continue to run this survey every six months and the various papers, findings, and results from experiments undertaken as part of the project, including additional information regarding this research, will be regularly disseminated via the Learning Innovation website at learninginnovation.info/smart and via the Scholarship Exchange (internally to the Open University).

Should you have any questions or need additional information, please contact Andrew McDermott at Andrew.McDermott@open.ac.uk or drop us a line at lds-learninginnovation@open.ac.uk.

References

Cross, S., Healing, G., Sharples, M. and Ellis, J. (2017). *Are students at the OU embracing mobile learning? Insight and analysis from repeated surveys conducted between 2012-2016*. IET Research and Innovation Reports. Milton Keynes, UK: The Open University.

GlobalWebIndex (2020). *Device flagship report*. (Accessed: 02 December 2020). Available at: **https://www.globalwebindex.com/reports/device**

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Appendix A

Summary of data (scores as rounded percentages)

Which of the following device types do you have access to? By access we mean that you are able to use, but do not necessarily own, the device either at home, place of work, place of study, etc	
Laptop PC	93
Desktop PC	47
Hybrid PC (e.g. Microsoft Surface)	8
Tablet (e.g. iPad)	68
Smartphone	94
Games console (e.g. Xbox One, PS4)	43
Streaming device (e.g. Google Chromecast, Apple TV, Amazon Fire Stick)	41
Smart TV (i.e. a TV with built-in apps)	55
Smart speaker (e.g. Amazon Echo, Google Home)	35
Smart screen (e.g. Amazon Echo Show, Google Home Hub)	5
Virtual Reality headset (e.g. Oculus Rift, PlayStation VR, Gear VR)	6
Other (please specify)	1

Of the devices you have identified in Q1, which do you use personally?	
Laptop PC	86
Desktop PC	33
Hybrid PC (e.g. Microsoft Surface)	6
Tablet (e.g. iPad)	53
Smartphone	93
>Games console (e.g. Xbox One, PS4)	25
Streaming device (e.g. Google Chromecast, Apple TV, Amazon Fire Stick)	30
Smart TV (i.e. a TV with built-in apps)	40
Smart speaker (e.g. Amazon Echo, Google Home)	27
Smart screen (e.g. Amazon Echo Show, Google Home Hub)	2
Virtual Reality headset (e.g. Oculus Rift, PlayStation VR, Gear VR)	3
Other (please specify)	1

Of the devices you have identified in Q1, which do you use for study?	
Laptop PC	83
Desktop PC	25
Hybrid PC (e.g. Microsoft Surface)	5
Tablet (e.g. iPad)	31
Smartphone	37
Games console (e.g. Xbox One, PS4)	0
Streaming device (e.g. Google Chromecast, Apple TV, Amazon Fire Stick)	1
Smart TV (i.e. a TV with built-in apps)	2
Smart speaker (e.g. Amazon Echo, Google Home)	2
Smart screen (e.g. Amazon Echo Show, Google Home Hub)	0
Virtual Reality headset (e.g. Oculus Rift, PlayStation VR, Gear VR)	0
Other (please specify)	1

Of the devices you have identified in Q1, are there any reasons that currently prevent you from using the devices for study purposes?

Location of study	13
Time of study	7
Availability of device	12
Availability of study materials on device	22
Compatibility with course software	19
WiFi / mobile data limitations	10
Accessibility limitations	9
Other reason (please specify)	12
No reasons	42

Including the devices you have identified in Q1, which devices might you be interested in using for study in the future that you currently do not use or have access to?

Laptop PC	13
Desktop PC	17
Hybrid PC (e.g. Microsoft Surface)	13
Tablet (e.g. iPad)	26
Smartphone	10
Games console (e.g. Xbox One, PS4)	5
Streaming device (e.g. Google Chromecast, Apple TV, Amazon Fire Stick)	8
Smart TV (i.e. a TV with built-in apps)	13
Smart speaker (e.g. Amazon Echo, Google Home)	10
Smart screen (e.g. Amazon Echo Show, Google Home Hub)	6
Virtual Reality headset (e.g. Oculus Rift, PlayStation VR, Gear VR)	10
additional devices	1
No other device	35