

The Jisc logo, consisting of the word "Jisc" in white lowercase letters on an orange square background.

Jisc

**Researcher digital
experience insights
survey 2020**

**UK higher education
pilot survey findings**



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Section one
Summary of findings and key messages

This report covers responses from 480 researchers at six UK universities.

Data was collected between 20 January and 13 April 2020, using the Jisc digital experience insights pilot survey for researchers.

Compared with the overall population of UK researchers in higher education (HE), our sample is broadly representative, except that it included significantly more first stage (up to doctoral (PhD)) researchers.

There was also a higher percentage of social science researchers relative to other subjects. Because of this and the timing of the survey – which extended over the start of lockdown in response to the Covid-19 pandemic – these results should be treated with caution.

Theme one: you and your technology



Facts and figures

- » **60% of our respondents said that they enjoyed the opportunity to try new technologies.** This is true across all career stages. Only 2% said they preferred not to use technology.
- » **Most researchers said they were quite or very confident users of technology (80%)** and most said they helped others to develop their digital skills at least some of the time (91%).
- » **22% of our respondents reported using at least one of four listed assistive technologies** (screen readers, dictation, alternative input devices, screen magnification).

Our key messages

Most researchers make confident use of digital technologies in their work. Many are eager to try new approaches. There is an enormous potential for peer learning and support.

Universities could provide more opportunities for researchers to discuss research technologies and associated skills, between research units/departments and across organisations.

Theme two: technology at your organisation



Facts and figures

- » **The majority of respondents agreed that they had reliable access to digital infrastructure** – networks, file space, repositories and online resources. Online skills training was the only resource that fewer than 75% agreed they could access whenever they needed them.
- » **Most researchers in our study agreed that they could access platforms and services from anywhere (79%),** that digital equipment was reliable (73%), and that digital platforms and websites worked well for their needs (64%). Three quarters rated digital infrastructure for research as ‘good’, ‘excellent’ or ‘best imaginable’.
- » However, only **53% agreed that they had support to use their own device** and only 42% that they had support for virtual team working.
- » **Relatively few respondents agreed that their university did a good job of communicating about their research (43%)** and only 20% agreed that they had the chance to be involved in decisions about digital services.

Our key messages

Researchers are not often involved in decisions about digital services. Because of their unique needs and their specialist expertise, their input is especially valuable.

While most researchers are satisfied with digital and technical infrastructure, it would be worth investigating why some find it inadequate and what the consequences are for their research.

There is a particular area of dissatisfaction around accessing specialist research software and systems on personal devices.

Universities are not currently perceived to be doing well at communicating about the work researchers do via digital media channels such as blogs and web pages.

Theme three: technology in your research



Facts and figures

- » **Many of our respondents said they provided technical support in their role (15%)** and/or were involved in trialling digital technologies for research (24%). These were more likely to be senior researchers (stage 4) than stage 1, 2 or 3 researchers.
- » Researchers used **a wide array of specialist tools**, mainly for data analysis and forms of coding/making/design. Advanced methods such as coding, graphing, structural equation modelling (SEM) and computer aided design (CAD) were common. **Many were combining different platforms, systems and modes of data analysis**, eg qualitative and quantitative.
- » **Most (90%) researchers visualised or presented data in digital formats at least monthly.** However, only 73% created digital materials to communicate their research.
- » Researchers in this survey appeared to **value openness, communication and exploration over commercial viability** of their research, or reputation management.
- » Compared with their positive view of university infrastructure, **researchers were somewhat less positive about support for specialist digital facilities in their research area.** Only 62% rated these 'good', 'excellent' or 'best imaginable'.
- » **There were also fewer positive responses about research spaces (33% agreed these were fit for purpose)** and accessing expert support (only 39% agreed this was available). Only 24% agreed that there was funding to buy specialist technologies, and only 23% agreed that there was the expertise to build or develop them.
- » **The most common source of support for digital skills was other researchers (including team colleagues), chosen by 37%** of respondents. Formal support was also commonly chosen (supervisor, principle investigator (PI) 16% and support staff 17%) followed by online resources (26%).
- » **The 'one thing' respondents wanted to support their digital skills was more specialised training,** followed by specialist support and better access to specialist software.

Theme three: technology in your research



Our key messages

Researchers are a unique resource of technical as well as scholarly expertise. They are using a wide array of specialist and general technologies, often in innovative ways.

Many researchers have technical development or support responsibilities as part of their role. Fellow researchers or senior colleagues are the main source of support for researchers to develop their technical skills.

Less use is made of digital technology for communicating and sharing research outcomes than in the research process itself.

Compared with general digital infrastructure, researchers are less positive about specialist facilities such as research spaces and research data management. Many do not have access to specialised support, or the capacity to fund/develop specialist tools.

Researchers want more specialised, relevant and flexible training in key areas such as data analysis and coding.

It may not be realistic for a central service to support every tool and technique used in research departments/units/teams. However, universities can:

- » Help research teams to develop capacity (grants, expertise, home-grown tools, devolved support funding/staff);
- » Recognise the role that researchers – especially senior researchers – play in supporting and developing others;
- » Ensure senior researchers' skills are up to date;
- » Consider developing the role of digital scholar or digital research champion, in partnership with librarians and researcher developers;
- » Provide forums for sharing software and expertise across team and department/institute boundaries
- » Encourage researchers to participate in online communities and events

Theme four: developing your digital skills



Facts and figures

- » Respondents were 'neutral' about all aspects of digital skills provision.
- » A majority of researchers (but not all) **agreed that they could access support for basic IT skills (69%) and data analysis (55%)**. Only 45% could access training for managing their digital identity, only 42% for specialist software use, and only 23% for coding.
- » There was a **demand for more support with coding**, including in non-technical subject areas.
- » **Only 13% of researchers agreed that developing digital skills was rewarded by their organisation**. Almost a third said they disagreed that they had opportunities to explore how other researchers used digital tools.
- » A majority of researchers agreed that they were informed about legal responsibilities such as keeping data safe, digital copyright, equality and accessibility, and research integrity. However **only 43% agreed they were informed about their health and wellbeing as a digital user**, and only 26% agreed they were informed about new and emerging research technologies (30% disagreed).
- » **A majority of researchers (62%) said they had discussed their digital skills informally with other researchers**. However, fewer than one third had discussed their digital skills in more formal settings, and 18% had not discussed their digital skills in any settings.
- » The overwhelming request from researchers to organisations was for more and **better targeted training – both online opportunities and face-to-face workshops**.
- » Researchers also said that specialist support and (better access to) specialist software would help them develop their skills. **They wanted better signposting of existing software and training**, as many felt unsure what was already available to them.
- » When asked how they would **rate the quality of support** they get from their organisation to develop their skills, **only just under half (49%) rate it as the 'best imaginable', 'excellent' or 'good'**. In fact 15% rate the quality of support as 'poor', 'awful' or 'worst imaginable'.

Theme four: developing your digital skills



Our key messages

Researchers need more flexible training options that recognise their complex schedules and diverse needs (eg online training for anytime access to less specialist skills, face-to-face training and mentoring for more specialist approaches).

Quick wins that would make a difference to researchers include:

- » Access to specialist software on researchers' own devices, and the opportunity to install their own
- » Better signposting of existing training, resources and software.
- » Discussion of digital skills and development at key transition points (eg induction, appraisal, funding applications)
- » Forums for sharing digital expertise beyond the immediate research team. Because research methods are often innovative, mixed-mode and cutting-edge, researchers in different departments may benefit from sharing
- » Also, forums for exploring new and emerging technologies across subject boundaries
- » A working party to develop guidelines on digital health and wellbeing – either for researchers as a user group, or for the whole university community with researcher input
- » Roles for researchers with technical skills to act as digital 'champions', mentoring other researchers and academic staff

Section two

What is the digital experience insights service?

See the digital experience through the eyes of your students and staff

The digital experience insights surveys allow organisations to collect valid, representative and actionable data from their students and staff about the digital environment they offer and to understand how digital technologies are used in learning and teaching as well as across the organisation.

The start of your journey

The survey findings support a process for engaging all users in shaping the digital experience and environment of your college or university. They are an invaluable way of informing and driving change for your organisation, providing data that contributes to digital strategy and helps to secure return on investment. Use the surveys to gather baseline information and to measure and evidence change as digital development initiatives evolve.

Framing the bigger picture

The anonymised data collected in the surveys allows us to gain a national picture of student and staff digital experiences and to monitor this over time, showing progress and highlighting issues of national concern. This evidence-based research enables us to respond promptly to sector needs.



Key elements of our digital experience insights service:

- » Questions that focus on the digital experience and cover issues that are important to students and staff
- » Survey templates for students, teaching staff, professional services staff and researchers
- » The option to add a few of your own local questions at the end of your survey
- » Guidance on all aspects of implementing the surveys, analysing data and sharing findings
- » Support at every step of your insights journey (email, mailing list, start-up guidance)
- » Real-time access to your own responses
- » Sector benchmarking data
- » Results templates to help you summarise and share your findings with management teams, students and staff
- » Annual reports that highlight national issues
- » Membership of an active and vibrant community of practice with two events each year
- » Welsh translations of each version

The survey instruments

All of our surveys are delivered and managed in Jisc online surveys (onlinesurveys.ac.uk), a service specially developed for the UK education sector.

The survey instruments are based around concise question sets that have been developed in consultation with the sector. Most of the questions map across the different surveys, allowing easy comparison of different staff/student groups.

The questions are organised into four themes. In the researcher survey, these were:

**Theme one:**
you and your technology

**Theme two:**
technology at your organisation

**Theme three:**
technology in your research

**Theme four:**
developing your digital skills

Welsh translations of each version are also available.

The core questions are locked so that they can be benchmarked across organisations. One page of each survey is usually customisable so that organisations can add in additional questions pertinent to their local needs. This option was not available for the pilot version of the researcher survey.

You can find out more about the insights service and download the reports and resources from our website digitalinsights.jisc.ac.uk.

The researcher pilot survey

The researcher survey was piloted in spring 2020, with the aim of offering it as part of the wider service in 2020 – 2021. The intended user groups were:

- » Research students
- » Research staff on contracts of all kinds
- » Academic staff on combined teaching/research contracts

The aims of the pilot were to:

- » Provide additional data to participating organisations and to Jisc, alongside the data from taught students, teaching staff and professional services staff
- » Explore the unique perspective of researchers on the digital environment they need and use
- » Evidence the contribution researchers make to the digital organisation
- » Learn more about surveying the researcher community, especially about how organisations might use the researcher survey in conjunction with the teaching staff survey to engage academics on teaching/ research contracts

In the pilot survey there were 32 different questions, some with several elements. This reflected our need to trial some new questions that are not asked in other surveys. Not all of these will necessarily be included in the final version of the researcher survey that we hope will join the insights service in 2020 – 2021.

Participating organisations

Data from six universities are included in this report. Data from two other pilot universities are not included, one because it is a non-UK university (uniquely in this data set), and one because of a low response rate. Participating universities chose how they recruited researcher participants, with guidance from the service team.

A total of 480 valid responses are included in this report, an average of 80 per institution. The mean average ± standard deviation was 141.2 ± 167.9 (median was 84 responses).

Timing of data collection

The pilot survey ran from 20 January 13 April 2020, which included the period when UK universities were beginning to respond to the Covid-19 pandemic with lockdowns and remote working. This may have affected the data in a number of ways:

- » Some universities did not launch or promote the survey as they had planned
- » Response rates may have been lower in surveys that were launched and promoted as planned
- » About 20% of responses (97 out of 480) were submitted after lockdown and remote working conditions had begun on 23 March, which may have influenced how certain questions were answered

Response rates per question

All closed questions had a non-response rate of less than 4% except for two sub-questions, with a non-response of 7% and 8% respectively. Overall, non-response rates were very low, indicating that the question set is robust and that researchers find it interesting and worth answering.

Uses and limitations of this data

Given this is a pilot survey and the number of participating institutions is small, data should be used with caution in particular because 20% of responses were collected after lockdown began.

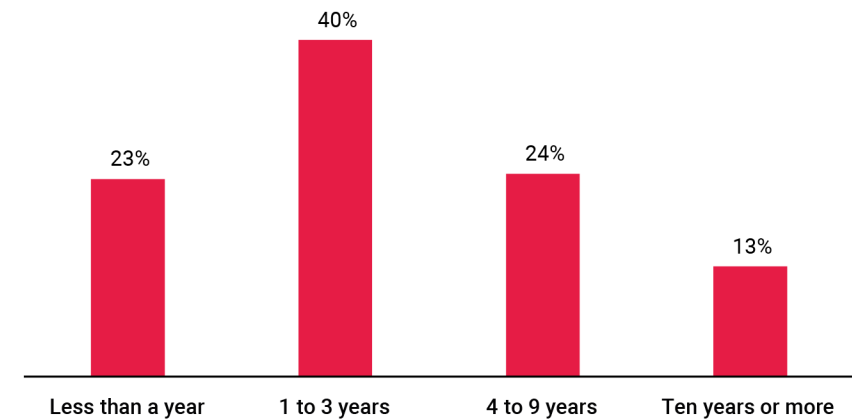
Section three
What the data tells us (question-by-question analysis)

Theme one:
you and your
technology



Q1. How many years have you worked here as a researcher?

Figure 1. The percentage of researchers who had worked at the HE organisation for ‘less than a year’, ‘1 to 3 years’, ‘4 to 9 years’ or ‘10 years or more’



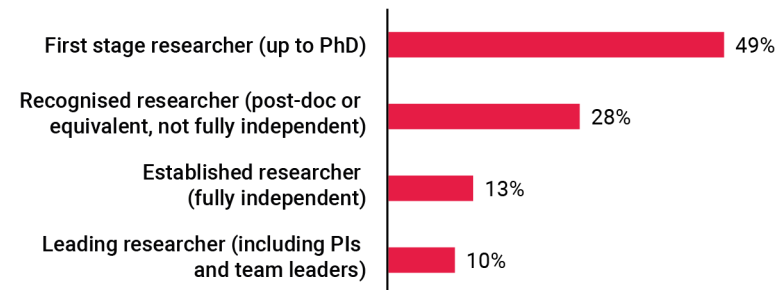
The mode and median response were one to three years, corresponding to 40% of our sample. These findings are similar to previous (2018/19) findings for professional services and teaching staff and suggest that about half of researchers move organisation within any three-year period.

Theme one: you and your technology



Q2. Which of these best describes you?

Figure 2. The percentage of researchers at each of the career/stage levels as articulated by the European Commission's research profile descriptors



For this project we chose to use the new European Commission researchers' classification system¹. If we take our 'first stage researcher' (up to PhD) as the equivalent of research students, we have a ratio of 0.98 students per staff researcher.

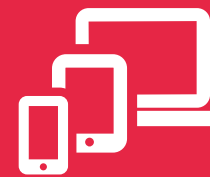
In 2018/19, the most recent year for which there is full data, there were 111,565 research students in UK universities, compared with 149,455 staff on research only (RO) or teaching and research (T+R) contracts: a ratio of 0.7 research student for every staff researcher².

Our sample includes significantly more first stage researchers than we would expect if it were fully representative of the population of UK researchers ($Z=2.75$; $p>0.01$).

1 European Commission. Euraxess research profiles descriptors. European Commission. Available at: <https://euraxess.ec.europa.eu/europe/career-development/training-researchers/research-profiles-descriptors> (accessed 4 June 2020)

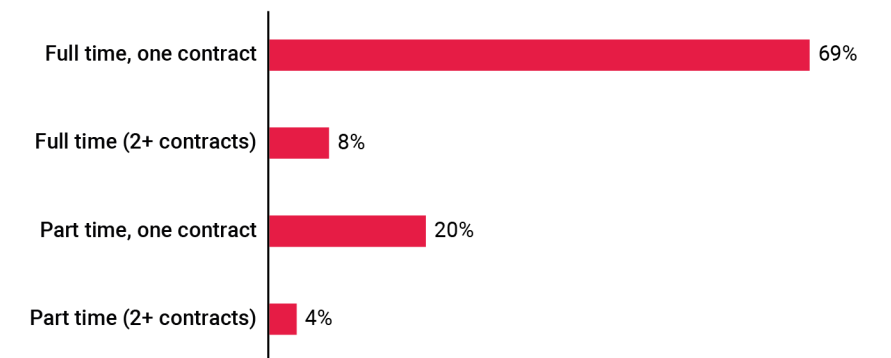
2 HESA, (2020). Staff Record academic year 2018/19. Available online: <https://www.hesa.ac.uk/news/23-01-2020/sb256-higher-education-staff-statistics>. Copyright Higher Education Statistics Agency Limited. Neither the Higher Education Agency Limited nor HESA Services Limited can accept any inferences or conclusions derived by third parties from data or other information obtained from Heidi Plus.

Theme one: you and your technology



Q3. Which of these descriptions best describes your current contract status?

Figure 3. The percentage of researchers who described their contract status as either 'full time (one contract)', 'full time (two or more contracts)', 'part time (one contract)' or 'part time (two or more contracts)'



The majority of our respondents (69%) were on full time, single contracts. 77% were employed full time and 24% part time.

In 2018/19, 122,655 research staff (RO+TR) were employed full time in UK HE, compared with 26,805 part time³. Our sample is broadly in line with this trend.

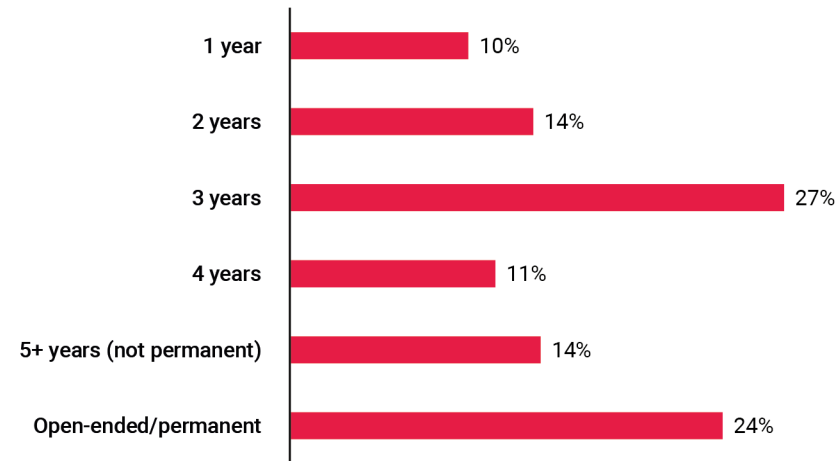
3 HESA, (2020). Staff Record academic year 2018/19. Available online: <https://www.hesa.ac.uk/news/23-01-2020/sb256-higher-education-staff-statistics>. Copyright Higher Education Statistics Agency Limited. Neither the Higher Education Agency Limited nor HESA Services Limited can accept any inferences or conclusions derived by third parties from data or other information obtained from Heidi Plus.

Theme one:
you and your
technology



Q4. How long is your current main contract or studentship?

Figure 4. The percentage of researchers who described their contract type as either one, two, three, or four years, ‘five years or more (not permanent)’ or ‘open-ended/permanent’



Of our respondents, 24% said they were on permanent contracts. Non-permanent contracts were most likely (mode=27%) to be for three years.

In 2018/19, 72% of research only and teaching/research staff were on a open ended permanent contract compared with 28% on fixed term contracts⁴. However, within this, this clear majority of research only staff (68%) were on fixed term contracts. This mirrors the recent University and College Union (UCU) survey, which also found that research-only contracts are more likely to be fixed term (68% in 2019)⁵, suggesting our sample is still broadly in line.

4 HESA, (2020). Staff Record academic year 2018/19. Available online: <https://www.hesa.ac.uk/news/23-01-2020/sb256-higher-education-staff-statistics>. Copyright Higher Education Statistics Agency Limited. Neither the Higher Education Agency Limited nor HESA Services Limited can accept any inferences or conclusions derived by third parties from data or other information obtained from Heidi Plus.

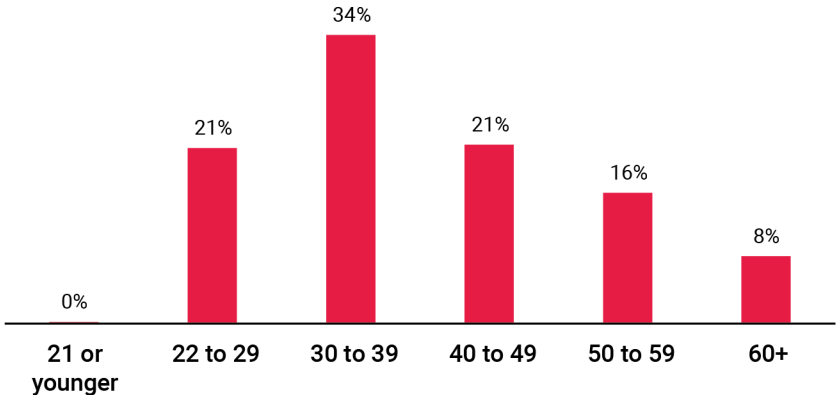
5 University and College Union (2019) Counting the Costs of Casualisation in Higher Education: Findings of a survey conducted by the University and College Union. London: UCU

Theme one:
you and your
technology



Q5. How old are you?

Figure 5. The percentage of researchers ages split into six categories (21 years of age or younger, 22 to 29, 30 to 39, 40 to 49, 50 to 59 and 60 or over)



There were 67,175 research only and teaching/research staff aged 40 or under in 2018/19 in the wider population, out of a total 149,455⁶, which meant that 45% of these staff were aged 40 or under. This compares to 55% aged under 40 in the survey sample (note the slight difference in age categories). However, we already know that our sample is weighted towards first stage researchers, most of whom will be below 40 and will not be included in HESA’s academic staff data⁶.

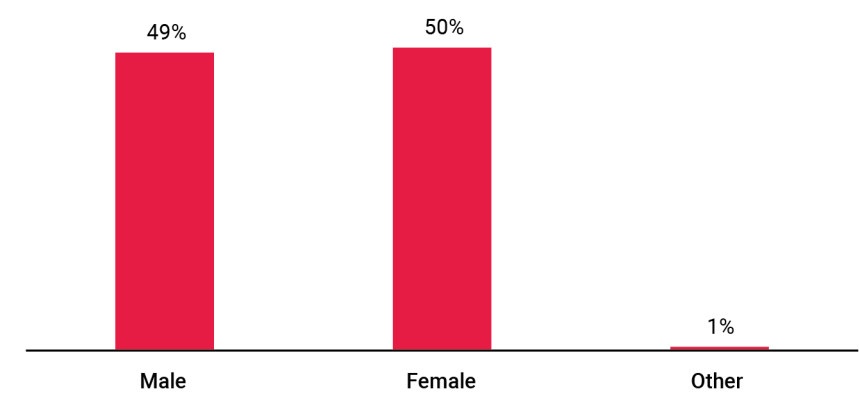
6 HESA, (2020). Staff Record academic year 2018/19. Available online: <https://www.hesa.ac.uk/news/23-01-2020/sb256-higher-education-staff-statistics>. Copyright Higher Education Statistics Agency Limited. Neither the Higher Education Agency Limited nor HESA Services Limited can accept any inferences or conclusions derived by third parties from data or other information obtained from Heidi Plus.

Theme one:
you and your
technology



Q6. What gender do you identify as?

Figure 6. The percentage of researchers that identified as 'male', 'female', or 'other'



Our sample has an even gender balance overall.

Looking only at research staff (all categories except first stage researchers), our sample has 104 female, 134 male and three other or unspecified. HESA 2018/19 figures show gender identity among research only and teaching/research staff as female=65,030, male=84,380, other=45 (56% male and 44% female) . Therefore, our sample does not differ significantly from the general population with respect to gender identity (z=-0.11, p=0.91).

In contrast, when it comes to first stage researchers (research students), our sample does show a female bias. Our sample includes 134 identifying as female, 99 male and two other. HESA 2018/19⁷. Figures for research students show gender as female=55,020 male=57,530 and other=265 (51% male and 49% female). Our sample includes significantly more female researchers (z=2.56, p<0.01). Table 1. Median score for responses to question 7, partitioned by response to question 2.

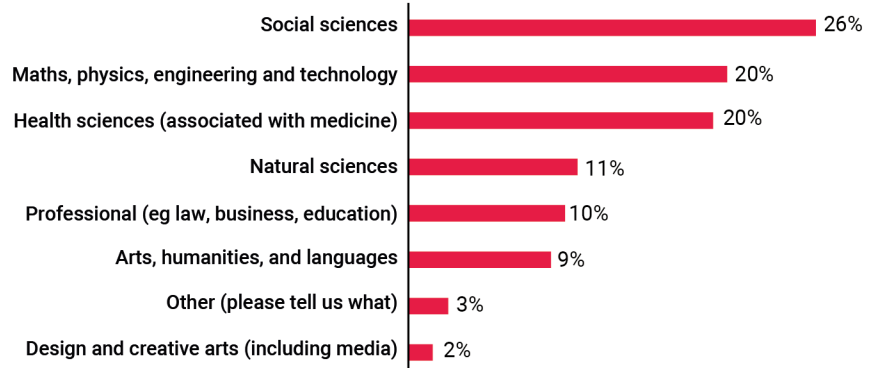
7 HESA, (2020). Staff Record academic year 2018/19. Available online: <https://www.hesa.ac.uk/news/23-01-2020/sb256-higher-education-staff-statistics>. Copyright Higher Education Statistics Agency Limited. Neither the Higher Education Agency Limited nor HESA Services Limited can accept any inferences or conclusions derived by third parties from data or other information obtained from Heidi Plus.

Theme one:
you and your
technology



Q33. Which of the following best describes the area of research in which you work?

Figure 7. The percentage of researchers who identified as working within eight specified subject areas (social sciences; maths, physics, engineering and technology; health sciences (associated with medicine); natural sciences; professional (eg law, business, education); arts, humanities and languages; other; design and creative arts (including media)



Our sample includes a good range of research areas.

HESA 2018/19 data for research students shows 7.5% researching social studies, and for academic staff (2018/19) shows 12% employed in social studies⁸. This suggests that a larger proportion of our sample may be researching in the social sciences/social studies area than is the norm among researchers in the UK.

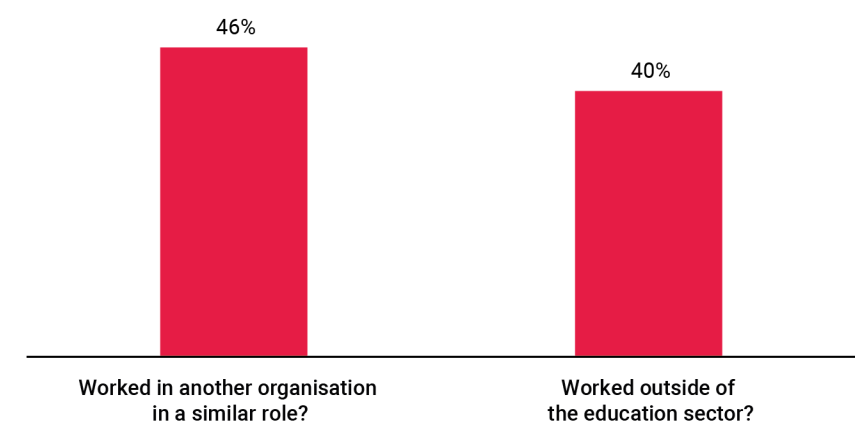
8 HESA, (2020). Staff Record academic year 2018/19. Available online: <https://www.hesa.ac.uk/news/23-01-2020/sb256-higher-education-staff-statistics>. Copyright Higher Education Statistics Agency Limited. Neither the Higher Education Agency Limited nor HESA Services Limited can accept any inferences or conclusions derived by third parties from data or other information obtained from Heidi Plus.

Theme one:
you and your
technology



Q7. In the last five years have you...?

Figure 8. The percentage of researchers who said they had worked in another organisation in a similar role, and/or had worked outside of the education sector in the past five years



Almost half of our respondents had changed organisation in the last five years (46%) and two fifths had worked outside of the education sector. Partitioning the data by career stage, we found that first stage researchers were most likely to have worked outside of the education sector. Our sample is skewed towards these first stage researchers, as shown in question 2.

Table 1. Median score for responses to question 7, partitioned by response to question 2

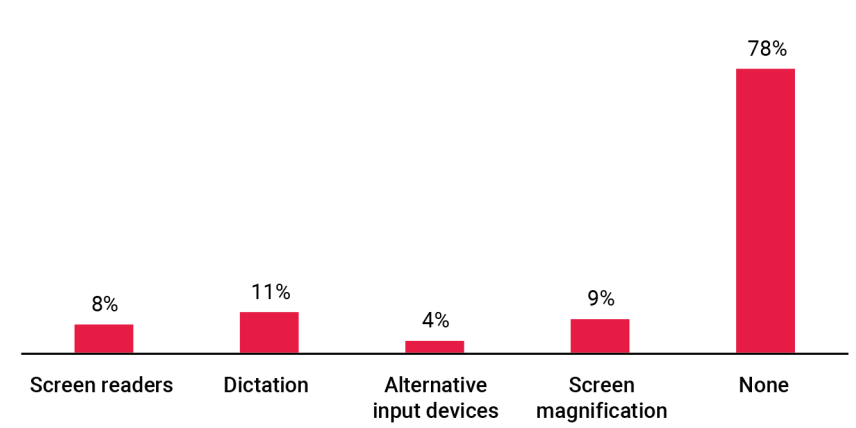
Which of these best describes you?		Worked in another organisation in a similar role	Worked outside of the education sector
First stage researcher (up to PhD)	N	225	219
	Median	No	Yes
Recognised researcher (post-doc or equivalent, not fully independent)	N	133	125
	Median	Yes	No
Established researcher (fully independent)	N	59	55
	Median	Yes	No
Leading researcher (including PIs and team leaders)	N	47	41
	Median	No	No
Total	N	464	440
	Median	No	No

Theme one:
you and your
technology



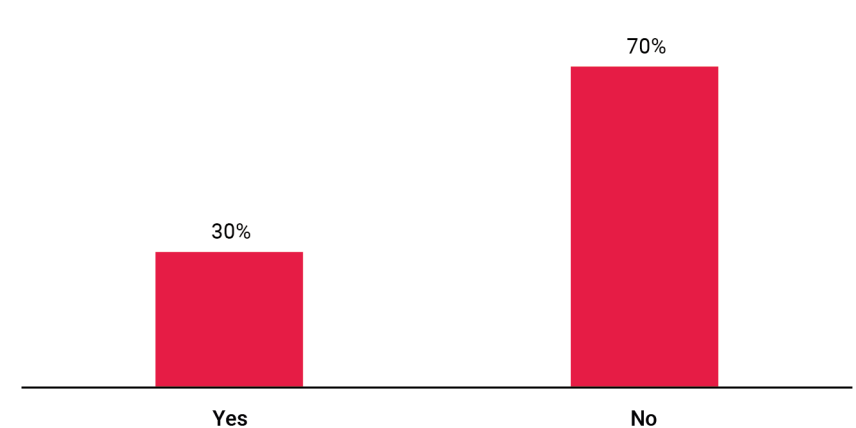
Q8. Do you personally use any assistive technologies? (eg screen readers, voice recognition, switches). Tick all that apply

Figure 9. Percentage of researchers who said they used various types of assistive technologies, or none



Q8a. If yes, have we provided you with support to use assistive technologies?

Figure 10. Percentage of researchers who used assistive technologies and who reported that they had been provided with support to use them

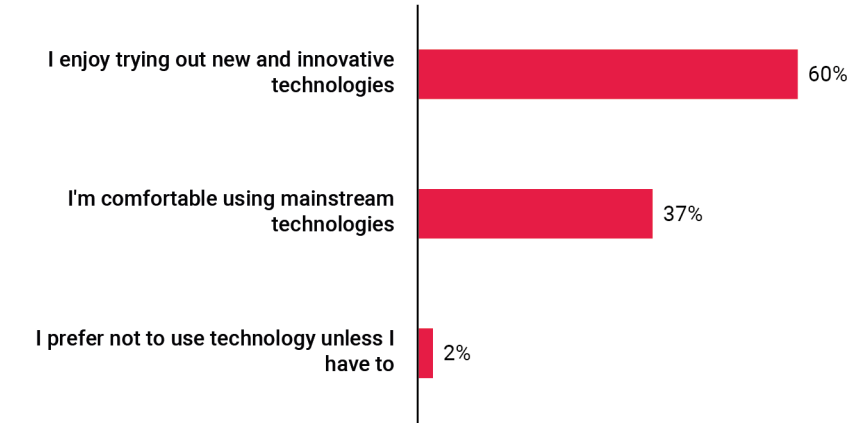


22% of our respondents said they used some kind of assistive technology, mainly dictation (11%), screen magnification (9%) and/or screen readers (8%). Of these, 30% said they had had support to use them. These accessibility features are widely available on personal devices and software, so the remaining 70% of users may not have needed or asked for support.

Theme one:
you and your
technology

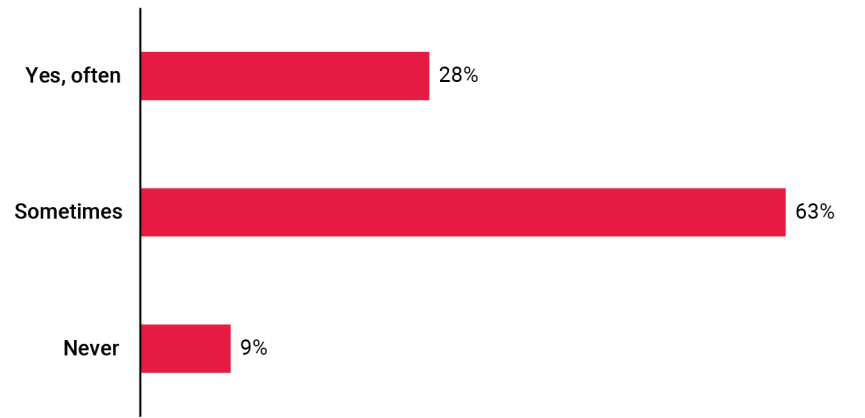


Q9. Which best describes your approach to adopting new technologies at work?
Figure 11. Percentage of researchers who identified as having one of three possible outlooks towards adopting new technology



The vast majority of researchers were at least comfortable using technology (97%) and 60% said they enjoyed the opportunity to try new and innovative tools. Partitioning the data by career stage, we found no differences in the median average response.

Q10. Do you actively help others to develop their digital skills?
Figure 12. Percentage of researchers who said they helped others to develop their digital skills, at three different levels of frequency

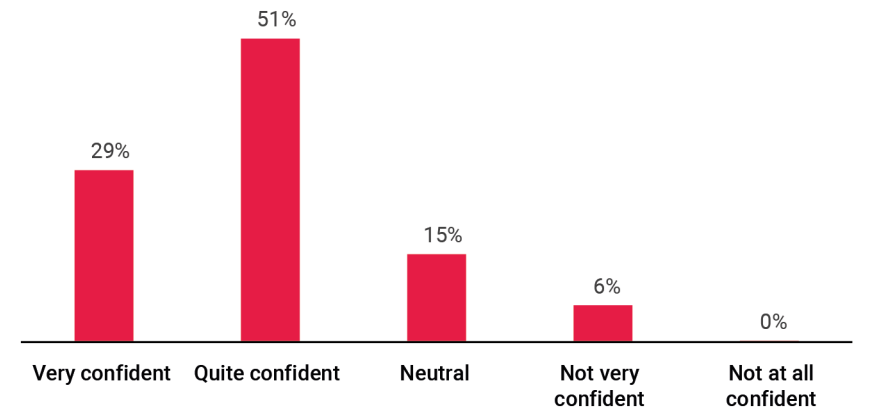


Theme one:
you and your
technology



Reflecting their overall confidence with technology, most researchers (91%) said they helped others to develop their digital skills at least some of the time. This demonstrates an enormous potential within research areas for peer learning and support.

Q11. Overall, how confident are you at trying out new technologies?
Figure 13. Percentage of researchers who identified with five levels of confidence in trying out new technologies



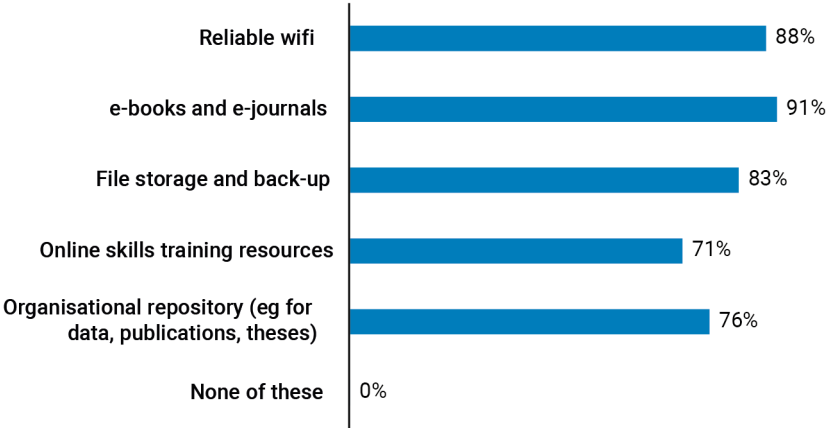
As the previous questions would lead us to expect, researchers were on the whole confident adopters of digital technology, with the mode and median being 'quite confident' or point four on a five-point scale. 29% described themselves as 'very confident' and 51% as 'quite confident', while only 6% rated themselves 'not very confident', and none said they were 'not at all' confident.

Theme two:
technology at
your organisation



Q12. Which of these do you have access to at your organisation whenever you need them? Tick all that apply

Figure 14. Percentage of researchers who reported that they had access to each of five types of infrastructure at work



The majority of researchers reported having access to digital infrastructure: reliable wifi (88%), e-books and journals (91%), file storage and back-up (83%) and an organisational repository (76%). Online skills training was the only service to fall below 75% access, at 71%. This was also the least accessible service for teaching staff and students in Jisc’s 2018/19 survey⁹.

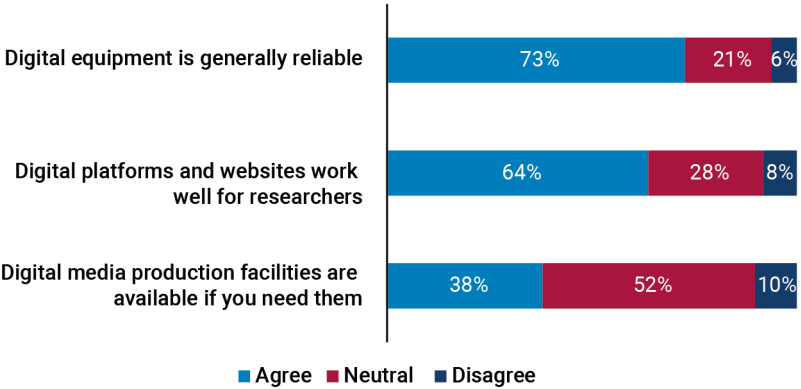
9 Langer-Crame, M. et al (2019). Digital experience insights survey 2019: findings from students in UK further and higher education. Jisc [online]. And Langer-Crame, M. et al (2019). Digital experience insights survey 2019: findings from teaching staff in UK further and higher education. Jisc [online]. Both available from: <https://digitalinsights.jisc.ac.uk/our-service/our-reports/>.

Theme two:
technology at
your organisation



Q13. How much do you agree with the following statements about working here?

Figure 15. Percentage of researchers who agreed, had a neutral opinion, or disagreed with three statements about organisational infrastructure



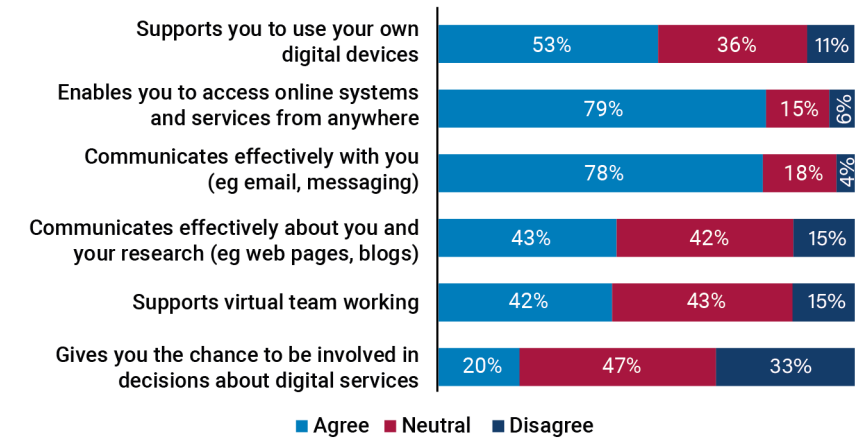
The median and mode were for researchers to ‘agree’ that digital equipment was generally reliable (73% agreed), and that digital platforms and websites worked well for their needs (64% agreed). However, the median and mode were ‘neutral’ for digital media production facilities being available if they needed them (38% agreed).

Theme two:
technology at
your organisation



Q14. How much do you agree that your organisation ...

Figure 16. Percentage of researchers who agreed, had a neutral opinion, or disagreed with six statements about organisational processes



Researchers tended to ‘agree’ (mode and median) that they were supported to use their own devices (53% agreed) and to access online systems (79% agreed); also, that communication with them was effective (78% agreed). They were split between ‘agree’ and ‘neutral’ (median ‘neutral’) on the issue of virtual team working (42% agreed), and on how the university communicated externally about their research (43% agreed).

In line with findings from other groups of staff and students¹⁰, researchers were least likely to ‘agree’ with the statement that the organisation ‘gives you the chance to be involved in decisions about digital services’ (20% agreed, 33% disagreed).

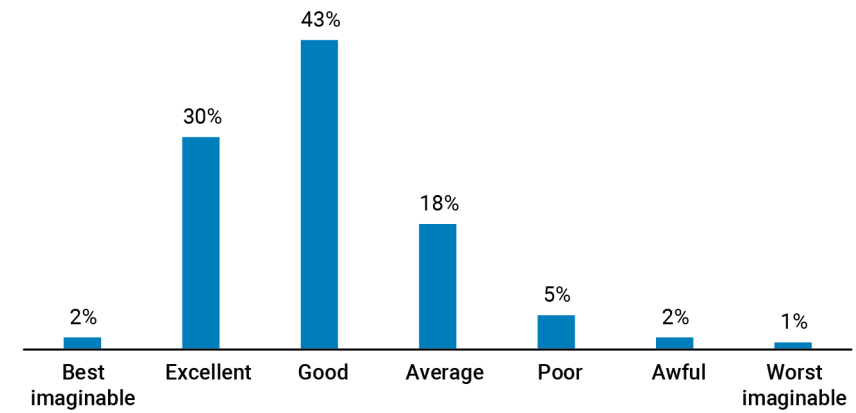
¹⁰ Langer-Crame, M. et al (2019). Digital experience insights survey 2019: findings from students in UK further and higher education. Jisc [online]. And Langer-Crame, M. et al (2019). Digital experience insights survey 2019: findings from teaching staff in UK further and higher education. Jisc [online]. Both available from: <https://digitalinsights.jisc.ac.uk/our-service/our-reports/>.

Theme two:
technology at
your organisation



Q15. How would you rate the quality of our digital provision (software, hardware, systems)?

Figure 17. Percentage of researchers who rated the overall quality of digital provision as one of seven options, from best imaginable to worst imaginable



The average researcher (mode and median) considered digital provision at their university to be ‘good’ (43%), and a third rated it either ‘excellent’ or ‘best imaginable’. Less than 8% rated it below the midpoint on our scale.

We hypothesised that respondents who had recently worked outside the education sector or in another organisation might rate their experience differently, having a recent opportunity to compare provision elsewhere. There were, however, no significant differences.

Table 2. Median for responses to question 15 partitioned by response to question 7

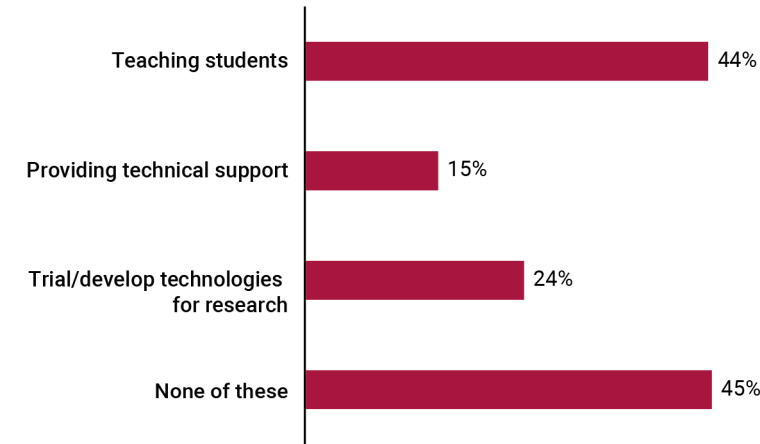
Infrastructure rating by response to question ‘Overall, how would you rate the quality of our digital provision?’	N	Median
Worked outside of the education sector?		
Yes	174	Good
No	267	Good
Total	441	Good
Worked in another organisation in a similar role?		
Yes	214	Good
No	251	Good
Total	465	Good

Theme three: technology in your research



Q16. Does your research role include any of the following responsibilities? (Tick all that apply)

Figure 18. Percentage of researchers who reported that their research role includes three other responsibilities



Only 44% of respondents said they taught students as well as carrying out research, which may reflect the high proportion of first stage researchers in our sample (though some of these would also have been teaching). A substantial number provided technical support (15%) and/or trialled/developed technologies for research (24%) as part of their role. 45% of our respondents said they had none of these additional responsibilities.

In Section four we examine the relationship between these responsibilities and career stage.

Theme three: technology in your research



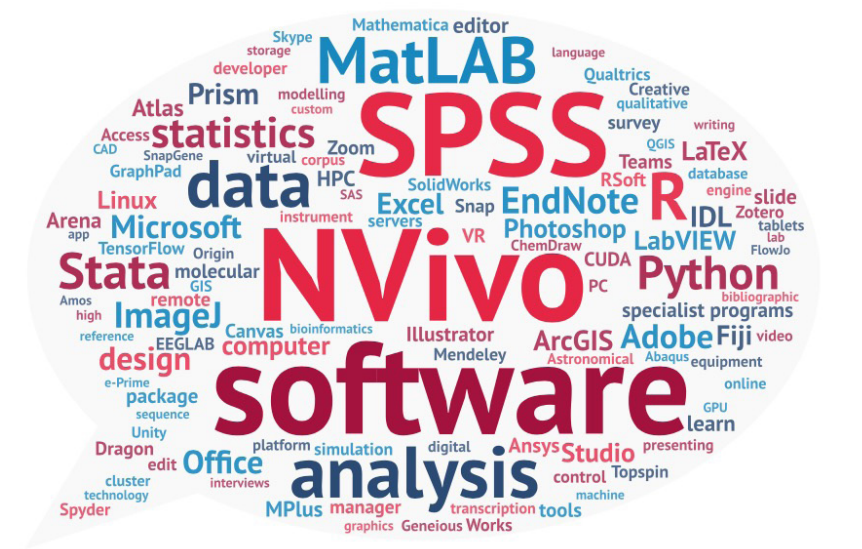
Q17. What specialist software or technology do you need for your research (eg for data analysis, design)?

Out of 480 respondents, 407 gave a response to this question, of which 370 yielded meaningful data (excluding responses such as 'not applicable (NA)' or 'various').

About one in five responses named a single application. The rest named several systems or (at least one) class of system, eg 'data analysis software', 'A general ML software stack (ie Linux/Python/CUDA/etc.)'. Some stated explicitly that they used too many specialist systems to list separately:

» "Many different software packages to run advanced research instruments and analyse data (too many to list)".

Figure 19. A word cloud showing the specialist software that researchers needed for their research (size of word denotes frequency with which it was mentioned)



Responses were coded according to the type(s) of software named or described. 222 responses were single-coded and 148 were given more than one code, to a maximum of four. A total of 583 codes were recorded (see coding table below).

Theme three:
technology in
your research



Table 4: Free text responses to question 17 showing codes used and the frequency with which each code was recorded

Aggregate code	Code	Frequency
Data analysis (total responses = 282)		
	Quantitative data	148
	Qualitative data	100
	Data analysis	30
	Surveys	4
Coding/making (total responses = 159)		
	Coding	79
	Editing	26
	Imaging	23
	CAD/design	16
	Simulation/VR	14
	Robotics	1
Productivity (total responses = 47)		
	Reference management	28
	Productivity	17
	Transcription	2
Communication (total responses = 12)		
	Communication	6
	Data presentation	6
Other		
	Specialist	53
	Geospatial information systems (GIS)	12
	Instrumental	9
	Access	5
	High performance computing (HPC)	2
	Digital resources	1
	Learning	1

Theme three:
technology in
your research



Some ‘specialist’ software was identified with specific experimental methods such as eye tracking or network analysis. Some referred to instrumentation, and others to subject-specialist resources.

Certain software types appeared regularly in combination. For example:

- » Quantitative analysis and coding (associated with the use of eg R, R Studio, MATLAB). Many researchers are going beyond basic statistical tests to run their own scripted tests, do structural equation modelling (SEM) and build graphical representations of statistical concepts.
- » Quantitative analysis and imaging/presenting data (eg graphing, using dashboards such as Tableau)
- » Qualitative analysis alongside quantitative (n=38)

The same platforms were also being used for more than one purpose (eg computer aided design (CAD) tools may be used for simulation/virtual reality (VR) and for visualising data).

Responses to this question show researchers using a wide variety of digital tools, often in complex combinations, and that many are using advanced methods such as coding, graphing, SEM and CAD.

Theme three:
technology in
your research



Q18. Do you currently, or have you ever used some form of parallel computing (high performance computing or HPC) in your research? If so, please tell us a bit about your experiences

Of 288 non-null responses to this question, 219 responded ‘no’, ‘not applicable (NA)’ or equivalent. Four of these were unsure what the question meant.

A further nine were ‘qualified’ negative responses, mainly expressing a desire to use HPC in the future, ‘if there’s opportunity’, or if more information was available.

That left 60 positive responses to code. 31 were coded as ‘general positive’ comments on the availability of HPC. The main advantages mentioned were speed, ability to handle large datasets, and specialist applications or experiments that could only be run with parallel processing/HPC capacity. Some included technical notes such as whether cluster or grid computing was used.

Seven were coded as general negative comments on the lack of availability or suitability of HPC. For example:

- » “There is no supercomputer or computing cluster available university wide.”
- » “The IT infrastructure is literally the most shocking and worst dated systems I have ever used”
- » “I try to but I don’t have the support to use parallel computing”

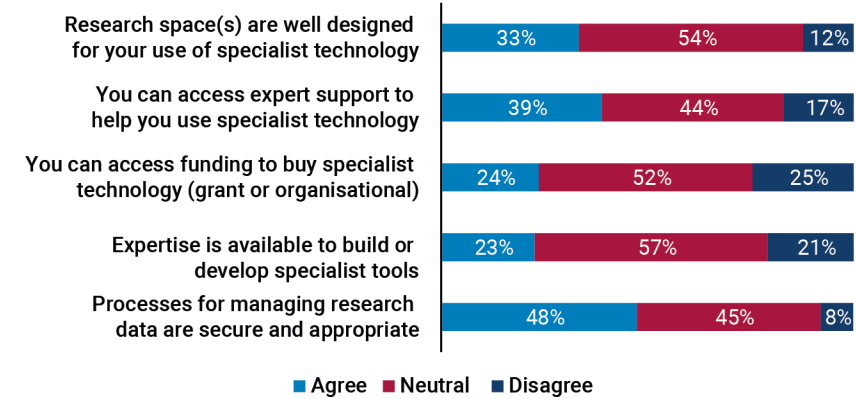
The remainder were coded according to the purposes for which HPC was used, of which data processing was the most common, followed by modelling and calculations.

Theme three:
technology in
your research



Q19. How much do you agree that in your research group or team ...

Figure 20. Percentage of researchers who agreed, had a neutral opinion, or disagreed with five statements about support for specialist technologies in their research group or team



The mode and median response for all of these statements was ‘neutral’, with the exception of the statement ‘processes for managing research data are secure and appropriate’, which was split between ‘agree’ and ‘neutral’ responses.

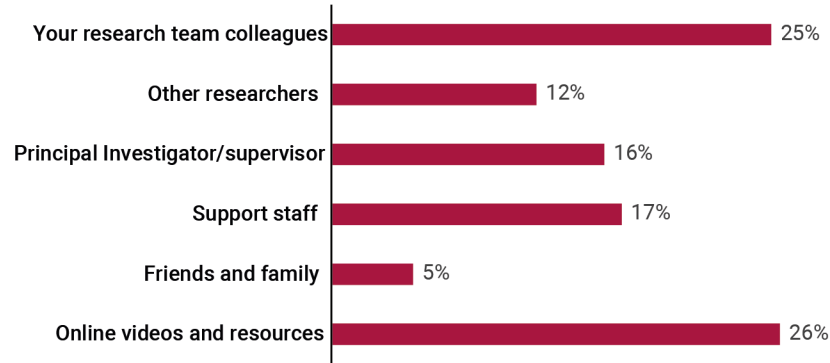
Overall, compared with their responses about general infrastructure in theme two, respondents were less positive about support for specialist technologies in their research area. Only 24% agreed that there was funding available to buy specialist technology (25% disagreed), and only 23% agreed that there was the expertise to build or develop specialist tools (21% disagreed).

Theme three:
technology in
your research



Q20. Who supports you most to use technology in your research?

Figure 21. Percentage of researchers who reported that their main support to use technology in research came from one of six different options



Other researchers were the main source of support for 37% of respondents, split between the research team (25%) and researchers further removed (12%). A further 33% looked to the more formal support available from a principal investigator (PI)/supervisor (16%), or a member of support staff (17%), while 26% used online resources.

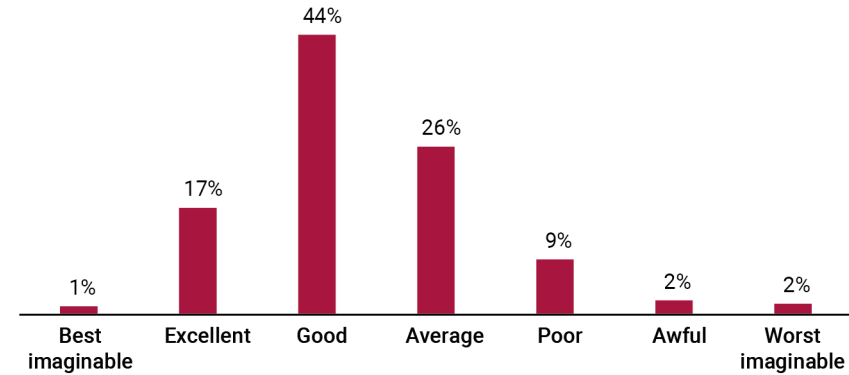
Taken together with the data from questions 9, 10 and 11, this shows a huge capacity for researchers to support one another with their digital skills. Colleagues that work closely together are more likely to support each other.

Theme three:
technology in
your research



Q21. Overall, how would you rate the quality of support for specialist research software and technologies?

Figure 22. The percentage of researchers who rated the overall quality of support for specialist research software and technologies as one of seven options, from best imaginable to worse imaginable



Responses were shifted towards the upper (more favourable) end of a normal distribution, with the mode and median response being that support was 'good' (44% of respondents). Support was rated as 'excellent' or 'best imaginable' by 18%, while 13% rated support below the 'average' point.

Theme three: technology in your research



Q22. To improve support for specialist research software and technologies ... what one thing should your organisation do?

Out of 480 respondents, 272 gave a response to this question. After 19 'not applicable (NA)', 'not sure' or similar responses were eliminated, 253 responses were included in the analysis.

Figure 23. A word cloud summarising responses to the question of how the organisation could improve digital support for researchers (size of word denotes frequency with which it was mentioned)



Responses were coded, the majority being short answers requiring just a single code. Eleven responses were double coded, so a total of 264 codes were recorded.

Theme three: technology in your research



Table 5. Free text responses to question 22 showing codes used and the frequency with which each code was recorded

Code	Frequency
Training	54
Specialist support	46
Access to software	45
IT support	23
Financing and procurement	17
Directory or software and resources	15
Engagement	14
Directory of expertise	7
Online resources	8
Licencing/subscription	7
Policy	3
Share best practice	4
Access to networks	3
Access to HPC/hardware	4
Data/information management	2
System integration	2
Guidance	1
Other	9

Notes

'Financing and procurement' usually related to the acquisition of software or hardware.

'Directory of expertise' and 'Directory of software/resources' were both forms of signposting to the university's existing resources.

Theme three:
technology in
your research



Quotes

Training

- » *"Not from colleagues... from real external professionals"*
- » *"Provide introduction to software, technologies and training at the start of programmes and revisit the provision at the start of each academic year for updates"*
- » *Access to software (many examples of this issue)*
- » *"Allow local installation of software"*
- » *"Allow us to install software ourselves"*

Specialist support

- » *"Current setup has too few support specialists and those, although good, are very busy and over worked"*

IT services and IT support

- » *"No flexibility or support for research-grade computers or software, and our IT service has neither the skills or the resources to implement any positive change."*
- » *"Decentralise IT services so that there are people who understand the needs of each department"*

Financing and procurement

- » *"Be sharper on procurements - drilling down site wide licencing costs"*
- » *"Have a licensed approver system"*
- » *"Make software and technology ordering process less time consuming."*

Directories of software/expertise

- » *"Advertise what's available and who can train or support use of these technologies"*
- » *"Oftentimes I'm not fully aware of the resources that already exist within the department that could help me with my work."*

Theme three:
technology in
your research



Engagement (with researchers as users)

- » *"Ask the staff what training topic they want covered"*
- » *"Consult more directly about our needs"*
- » *"Form a collaborative relationship with a group that works with specialist methods"*
- » *"Get researchers more engaged and trialling new technologies"*

Online resources:

- » *"Create a repository of training videos for specialist software"*
- » *"Up to date on-line training resource that can be accessed at time of need."*

Share best practice

- » *"Set up a system of technology champions"*

Other:

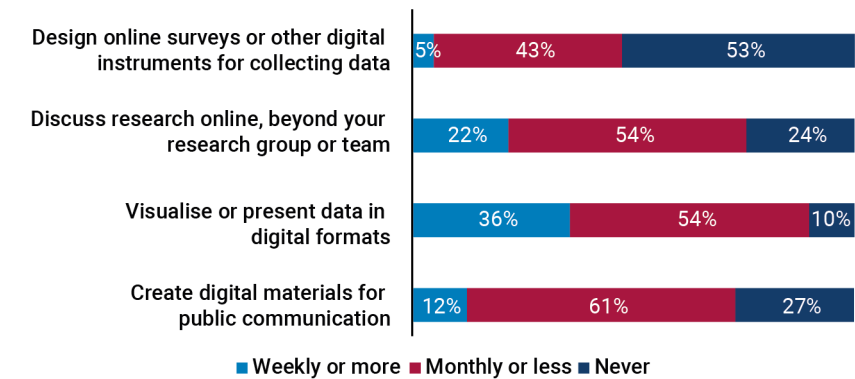
- » *"Ceilings crash down in offices on a regular basis, it rains inside the offices, the air conditioning used to cool down the servers overheats..."*

Theme three:
technology in
your research



Q23. In your research role, how often do you ...

Figure 24. The percentage of researchers who reported carrying out each of four digital research activities ‘weekly or more’, ‘monthly or less’, or ‘never’



This question was about digital practice rather than the technologies used. Only 10% of researchers said they ‘never’ visualised or presented data in digital formats. This is borne out by the frequency with which imaging, graphing and data presentation software were mentioned in responses to question 17.

However, 24% of our respondents said they ‘never’ discussed their research online beyond their research group/team, and 27% ‘never’ created digital materials to communicate their research publicly, suggesting that the use of technology was more focused on visualising data in the research process than on communicating outcomes.

In all these cases the median and mode response were ‘monthly or less’. The mode was ‘never’ (53%) for ‘design online surveys or other digital instruments for collecting data’.

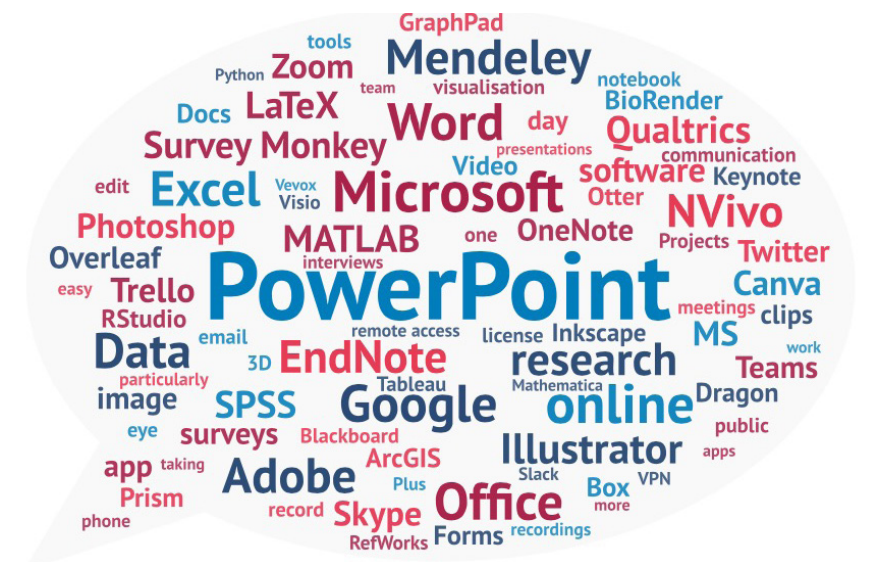
Theme three:
technology in
your research



Q24. Please give an example of a digital tool or app you find really useful in your role

Out of 480 respondents, 258 gave a response to this question – a drop-off from question 17. Once 20 responses of ‘not applicable (NA)’, ‘none’ or similar had been discarded, 238 meaningful responses were analysed.

Figure 25. A word cloud showing the apps that researchers found really useful in their role (size of word denotes frequency with which it was mentioned)



Responses were coded. Unlike in responses to question 17, most respondents named a single app or application. Forty responses were given more than one code, giving a total of 278 codes recorded.

Theme three:
technology in
your research

Table 6. Free text responses to question 24 showing codes used and the frequency with which each code was recorded

Aggregate code	Code	Frequency
Data analysis (total responses = 84)		
	Quantitative data	43
	Data imaging	20
	Surveys	15
	Qualitative data	4
	Recording	2
Coding/making (total responses = 37)		
	Creative/graphics	22
	Coding	12
	Design	1
	Editing/video	1
	AR/VR	1
Productivity (total responses = 63)		
	Productivity	23
	Referencing	18
	Writing/editing	10
	Documentation	6
	Search	4
	Planning	2
Communication (total responses = 72)		
	Presentation	36
	Collaboration	18
	Communication	13
	Social medai	5
Other (total responses = 22)		
	Specialist	12
	Access	4
	GIS	3
	Learning/teaching	3

Theme three:
technology in
your research

Comparing with question 17, items cited were more likely to be generic apps than dedicated research applications. Productivity and communication tools were mentioned much more frequently. This suggests that the two questions successfully elicited different answers, guided by research specialism in the case of question 17, and by personal practice/preference in the case of question 24.

In comparison with (taught) students¹¹, researchers cited tools for producing research content (data analysis, coding, making and productivity) much more often. They cited tools for consuming research content (search and discovery) much less often. This is as we would expect from their respective roles in relation to research.

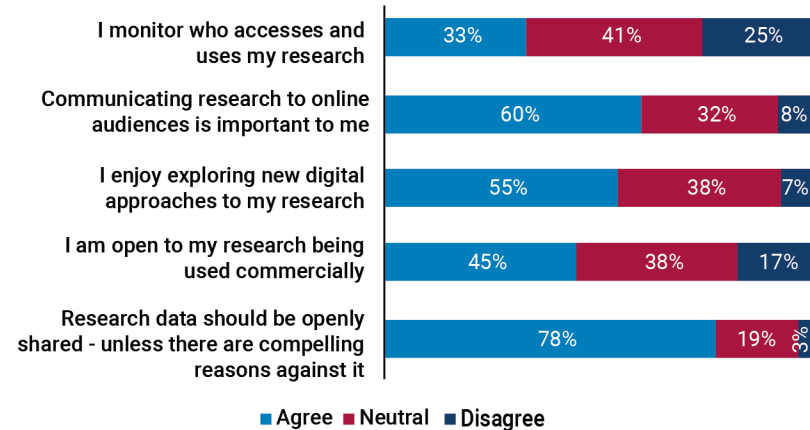
¹¹ Langer-Crame, M. et al (2019). Digital experience insights survey 2019: findings from students in UK further and higher education. Jisc [online]. Available from: <https://digitalinsights.jisc.ac.uk/our-service/our-reports/>

Theme three:
technology in
your research



Q25. How much do you agree with the following statements?

Figure 26. The percentage of researchers who agreed, had a neutral opinion, or disagreed with five statements reflecting attitudes to using digital in their research activities



Only 3% of researchers disagreed with the proposition that research data should be openly shared (78% agreed). ‘Agree’ was also the mode and median response to prompts about enjoying new digital approaches to research (55% agreed, 7% disagreed) and communicating about research to online audiences (60% agreed this was important, 8% disagreed). A ‘neutral’ response was the median in relation to commercial use of research (45% agreed they were open to this, 17% disagreed) and monitoring who accesses and uses research (33% agreed they did this, 25% disagreed). There was a clear split of opinion among our respondents on these issues.

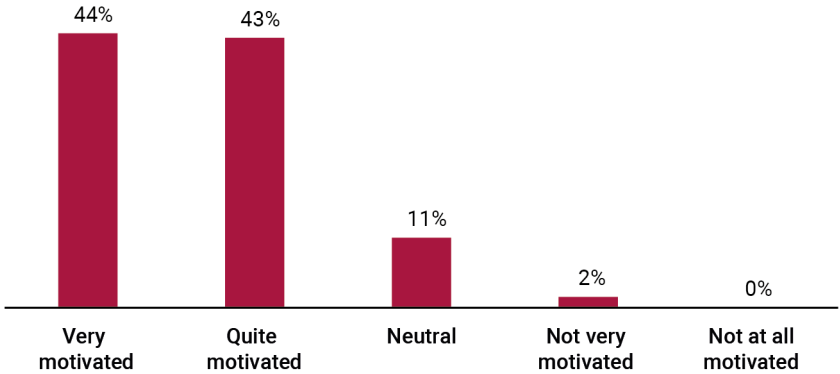
It appears that more researchers in our sample valued openness, communication and exploration than valued commercial viability and monitoring their impact.

Theme three:
technology in
your research



Q26. Overall, how motivated are you to use technology to support your research role?

Figure 27. The percentage of researchers who identified with five levels of motivation for using technology to support their research role, ranging from ‘very motivated’ to ‘not at all motivated’



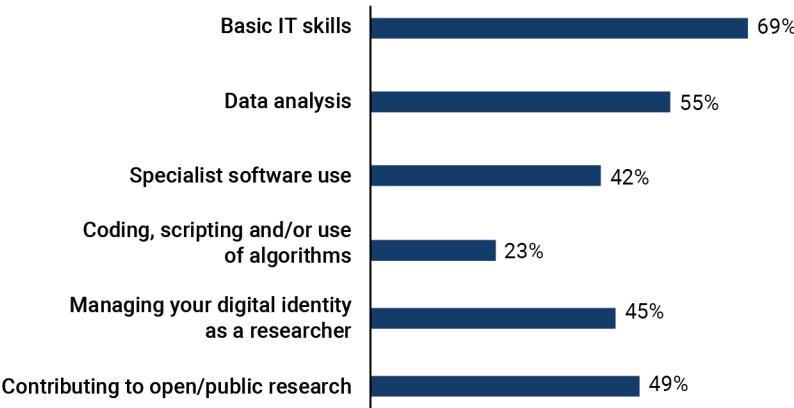
Responses to this question were evenly split between ‘very motivated’ (44%) and ‘quite motivated’ (43%), with very few individuals choosing ‘neutral’ or ‘not very motivated’. No one chose ‘not at all motivated’.

Theme four:
developing your
digital skills



Q27. Which of these skills does your organisation offer support for you to develop? (Tick all that apply)

Figure 28. Percentage of researchers who reported that their organisation offered support for them to develop six skills relevant to digital research



Given their importance in the research process (question 17), it is striking that only 55% of respondents said they had support to develop data analysis skills and only 42% said they had support to develop their use of specialist software. The relative lack of support for coding (23%) was also reflected in responses to question 32 requesting more training in this area. However, 69% said they had support with basic IT skills. Around half said they had support to manage their digital identity as a researcher (45%) and to contribute to open/public research (49%).

Theme four:
developing your
digital skills



Q28. How much do you agree that your organisation provides you with the following?

Figure 29. The percentage of researchers who agreed, had a neutral opinion, or disagreed with four statements relating to organisational support for digital skills development



This question asked about four aspects of organisational support for digital skills. The mode and median response to all four was 'neutral'. From the spread of responses, it appears that different researchers had different experiences of these issues. Further research could determine whether responses tend to cluster together, ie whether a positive organisational culture (or some other factor) created a tendency for researchers to agree with more than one of these statements.

The mean response was somewhat more positive about 'digital skills training that is relevant to researchers' (41% agree, 17% disagree) and 'the chance to assess your digital skills' (30% agree, 25% disagree).

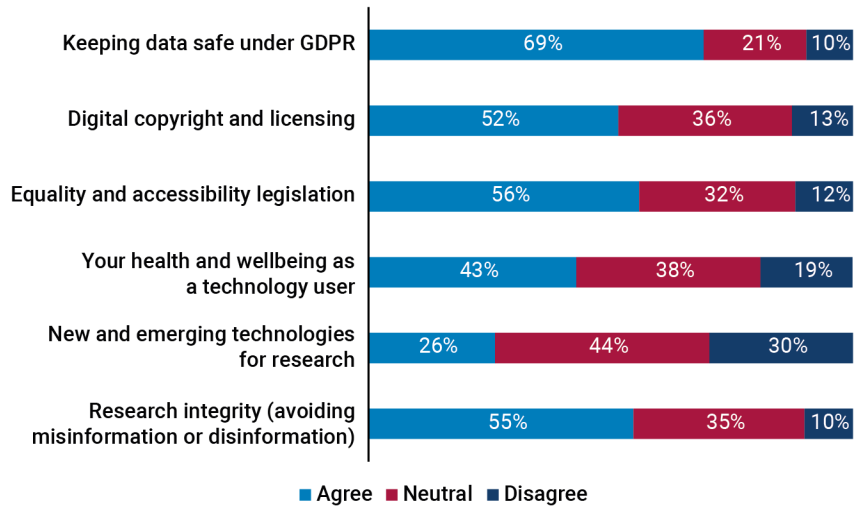
The mean response was somewhat more negative about 'reward and recognition for the digital skills you develop' (13% agree, 38% disagree) and 'opportunities to explore how other researchers use digital systems' (20% agree, 31% disagree).

Theme four:
developing your
digital skills



Q29. How much do you agree that you are informed about your responsibilities with regard to the following?

Figure 30. The percentage of researchers who agreed, had a neutral opinion, or disagreed that their organisation provided them with access to information regarding six different issues



A majority of researchers agreed that they were informed about legal responsibilities such as keeping data safe (69% agreed), digital copyright and licensing (52% agreed), equality and accessibility legislation (56% agreed), and research integrity (55% agreed).

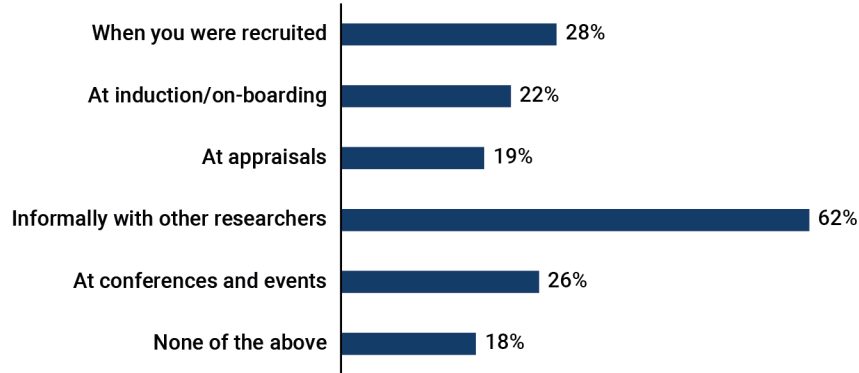
However only 43% agreed that they were informed about their health and wellbeing as a digital user, and only 26% agreed that they were informed about new and emerging research technologies. This last item had the highest proportion of 'disagree' responses (30%).

Theme four:
developing your
digital skills



Q30. When have you discussed your digital skills? (Tick all that apply)

Figure 31. Percentage of researchers who reported that they had discussed their digital skills on five different occasions, or none



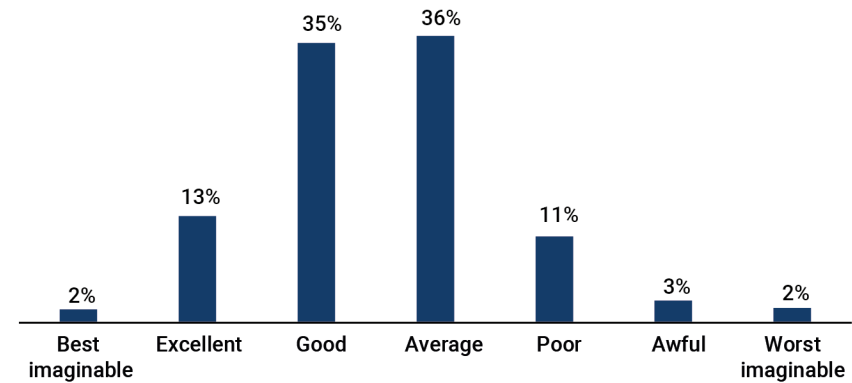
A majority of researchers (62%) said they had discussed their digital skills informally with other researchers. Another 26% had done so at conferences and events, confirming findings from questions 10 and 20 about peer support. However, only a minority of researchers had discussed their digital skills in each of the more formal settings (28% at recruitment, 22% at induction, 19% at appraisals). 18% of respondents said they had not discussed their digital skills in any of the settings.

Theme four:
developing your
digital skills



Q31. Overall, how would you rate the quality of support you get from your organisation to develop your digital skills?

Figure 32. The percentage of researchers who rated the support they received to develop their digital skills from best to worst imaginable



The mode and median rating for digital skills support was ‘average’ (36%). Support was rated as ‘excellent’ or ‘best imaginable’ by 15%, while 15% rated support below the ‘average’ point. This distribution of responses is somewhat less positive than the rating for digital infrastructure (question 15) and for specialist technologies (question 21).

Theme four:
developing your
digital skills



Q32. To help you develop your digital skills ... what one thing should your organisation do?

Out of 480 respondents, 222 gave a response to this question. Once 14 ‘not applicable (NA)’ or ‘not sure’ responses were eliminated, 208 responses were analysed.

Figure 33. A word cloud summarising responses to the question of how the organisation could help researchers improve their digital skills (size of word denotes frequency with which it was mentioned)



Responses were coded, the majority being short answers requiring just a single code. Thirty-three responses were double coded, so a total of 241 codes were recorded.

Theme four:
developing your
digital skills



Table 7. Free text responses to question 32 showing codes used and the frequency with which each code was recorded

Code	Count	Further details
More training	112	Details below
Better signposting	25	20
Dedicated support	18	Mainly specialised
Financial investment	13	Mainly in specialised staff
Access	11	Mainly to specialist software
Software	10	Mainly specialised
Personal skills assessment	6	
Engage/respond to researchers	5	
Address at induction	5	
Share digital know-how	5	
Skills audit (of uni/dept)	3	
Recognition for skills	3	
Improve digital policies	3	
Other	11	

Notes

‘Training’ was used as a code to cover ‘workshops’, ‘seminars’ and ‘courses’, as these terms seem to have been used interchangeably. Where ‘face-to-face’ was specified, this was recorded. Where ‘practical’ or ‘hands-on’ was specified this was also recorded. This may miss some subtle distinctions, eg workshops and seminars may be more peer-led and exploratory than training.

As the majority of responses related to training, it is worth breaking this down into some separate issues. Online training was requested by 12 respondents, face-to-face training by six. Training was requested to be advanced and/or specialised (5), practical/hands-on (3) and highly relevant (3). The most common topics requested for training were coding (8) and data analysis/management (7).

Theme four:
developing your
digital skills



Quotes

Quality/content of training

- » *“Coding skills outside of computer science”*
- » *“Specialised courses on programming skills, data management, etc. aimed at more advanced users”*
- » *“Have a playful full- or half-day of data analysis/visualisation with a few data sets.”*
- » *“More is needed to reinforce the key messages of GDPR if the institution is to support ethical use of data”*
- » *“Be clear about what they [digital skills] are and plan them into your training”*

Online versus face-to-face training

- » *“The school recently acquired a trial licence for LinkedIn Learning and this has been really helpful for opening up a set teaching framework of different IT skills.”*
- » *“Offer an online repository of programs and training videos”*
- » *“Rely less on online training platforms - provide practical training taught by human beings”*
- » *“More face-to-face training. There is an assumption that everyone is well qualified and dextrous in IT skills.”*

Signposting

- » *“Better communication about what is available - a lot of my negative answers above are because I just don’t know what they offer if anything”*
- » *“I don’t know what’s available to me and mostly work from home part time which can be isolating”*

Theme four:
developing your
digital skills



Specialised support

- » *“Educate IT support providers about research imperatives”*
- » *“Have software champions/experts who are always on hand to answer small queries.”*
- » *“There are already staff on permanent contracts who are very skilled. Lack of opportunities and excessive workloads mean they are for the most part prevented from sharing their skills and knowledge.”*

Access/software

- » *“Let postgraduate students install the software they need on their university’s computer.”*

Section four
Additional comparative analysis

Three additional forms of comparative analysis were carried out on this data.

First stage researchers (broadly corresponding with research students) were compared with all other career stage researchers (broadly corresponding with research staff), using a number of questions where career stage was hypothesised to be a significant factor in the responses given.

Headline findings from this survey were also compared with the same questions where they were asked of taught HE students and HE teaching staff in the 2018/19 Jisc digital experience insights surveys¹². Because the data was collected in different years, these comparisons have not been tested for statistical significance. Our observations could be followed up with statistical tests once all the 2019 - 2020 data sets are available.

Finally, a number of hypothesis-led tests were carried out to compare key findings from the survey.

First stage researchers (up to PhD) v other

A total of 49% of this sample came from researchers who identified as being ‘first stage (up to PhD)’ in question 2. We have compared this group (broadly corresponding with research students) with other researchers (stages 2-4 in question 2, broadly corresponding with staff) in four areas of response data.

Previous experience

Q7. In the last five years have you: worked in another organisation in a similar role; worked outside of the education sector?

On average, more first stage researchers had had jobs outside of education, although this wasn’t statistically significant (chi-square = 0.76, df = 1, p=0.095).

Statistically fewer first stage researchers had worked in other organisations in a similar role (chi-square = 0.76, df = 1, p<0.001).

Approach to using new technology

Q9. Which best describes your approach to adopting new technologies at work?

There was no significant difference between first stage researchers and other researchers in their reported approach to adopting new technologies (Kruskal-Wallis = 0.024, df=1, p=0.876).

Q11. How confident are you at trying out new technologies?

There was no significant difference between first stage researchers and other researchers in their reported confidence to try out new technologies (Kruskal-Wallis = 0.251, df=1, p=0.617)

Q26. Overall, how motivated are you to use technology to support your research role?

There was no significant difference between first stage researchers and other researchers in their reported motivation to use technology to support their research (Kruskal-Wallis = 0.000, df=1, p=0.994).

Overall, there is no evidence that first stage researchers (typically research students) were more or less confident, motivated or willing to adopt new technologies than later career researchers. The idea that younger scholars were more secure in their digital skills than older ones appears - on the limited evidence of this survey - to be unfounded.

¹² Langer-Crame, M. et al (2019). Digital experience insights survey 2019: findings from students in UK further and higher education. Jisc [online]. And Langer-Crame, M. et al (2019). Digital experience insights survey 2019: findings from teaching staff in UK further and higher education. Jisc [online]. Both available from: <https://digitalinsights.jisc.ac.uk/our-service/our-reports/>.

Supporting others

Q10. Do you actively help others to develop their digital skills?

There was no significant difference between first stage researchers and other researchers in how often they assisted others to develop their digital skills (Kruskal-Wallis = 0.115, df=1, p=0.735).

Q16. Does your research role include any of the following responsibilities? (Tick all that apply)

Significantly fewer first stage researchers had responsibility for teaching students (chi-square = 52.25, df=1, p<0.001) or providing technical support (chi-square = 10.57, df=1, p=0.001) as compared with other researchers.

Overall, first stage researchers were neither more nor less likely to support others with their digital skills. In terms of their formal responsibilities, they appeared less likely to support others than later career researchers.

Perceived quality of provision

Q15. How would you rate the quality of our digital provision (software, hardware, systems)?

First stage researchers gave a significantly more positive rating to digital provision than other researchers (Kruskal-Wallis = 9.29, df=1, p=0.02).

Q31. Overall, how would you rate the quality of support you get from your organisation to develop your digital skills?

First stage researchers also gave a significantly more positive rating to the quality of support for developing their digital skills, compared with other researchers (Kruskal-Wallis = 8.228, df=1, p=0.04).

Overall, first stage researchers rated the quality of provision from their organisation more highly than other researchers.

Career stage and responsibilities

Finally, we looked at the additional responsibilities we asked about in relation to all four career stages. We found that:

- » Established and leading (Level 3 and 4) researchers were most likely to have additional teaching responsibilities (85% of Level 3 and 89% of Level 4 researchers said they had additional teaching responsibilities in comparison with 40% of Level 2 and 28% of Level 1 researchers (chi-square = 106.5, df = 3, p<0.001)
- » Senior researchers/PIs (Level 4) were most likely to have responsibility to provide technical support to other staff (26% of Level 4 researchers said they had additional technical support responsibilities in comparison with 22% of Level 3, 17% of Level 2 and 9% of Level 1 researchers (chi-square = 12.71, df = 3, p=0.05)
- » Senior researchers/PIs (Level 4) were most likely to have trialled and developed new technologies in their role (45% of Level 4 researchers said they trialled or developed technologies for research in comparison with 32% of Level 3, 33% of Level 2 and 13% of Level 1 researchers (chi-square = 33.58, df = 3, p<0.001)

This clearly demonstrates the important role that senior researchers play in passing on digital skills and tools to their more junior colleagues.

Researchers (2019 – 2020 data) versus other respondent groups (2018/19 data)

A comparison was made between researchers and previous respondent groups that had completed the Jisc digital experience insights survey (2018/19)¹³. Only HE respondents were included in the comparison, as only HE respondents took part in the researcher pilot.

The data used for reference were as follows:

Table 8. Data used for comparison across respondent groups

	Number of respondents	Data collected
HE taught students	16,142	October 2018 – April 2019
HE teaching staff	3,485	September 2018 – June 2019

Many or most university teaching staff who completed the survey in 2018/19 would have had research responsibilities, though the survey made clear they were being asked about their teaching experience.

Institutional infrastructure

Responses to question 12 were in line with teaching staff responses to the equivalent question in 2018/19, on the key issues of:

- » Wifi (researchers 88% had reliable access, teaching staff 84%)
- » e-books and e-journals (researchers 91%, teaching staff 90%)
- » File storage and back-up (researchers 83%, teaching staff 82%)

Teaching staff reported considerably better access than students across all issues (2018/19 figures).

The median average rating ('good') for digital infrastructure (software, hardware, and systems question 15) is the same that teaching staff and students gave for the comparable rating in 2018/19. The underlying pattern of responses is somewhere between the rating given by teaching staff and that given by taught students.

Support and engagement

In 2018/19, 70% of taught students agreed that their university 'supports you to use your own devices'. This compares with 53% of researchers in the present survey (question 14). Until we can compare like-with-like data we will not know if this difference is the result of an overall drop in support, or whether any differences that remain between respondent groups are statistically significant.

In 2018/19, 14% of teaching staff and 29% students agreed that they had the opportunity to be 'involved in decisions about digital services'. This compares with 20% of researchers in the present survey (question 14) – which is likely to have included roughly equal numbers of research staff and students.

In response to question 20: 'Who supports you most to use digital technologies in research?', a total of 37% of researchers chose research colleagues, either in their close team (25%) or further removed (12%). This compares with findings from teaching staff – 33% chose 'teaching colleagues' – and from taught students – 26% chose 'other students'.

In response to the same question, 26% of researchers chose 'online resources' as compared with 32% of teaching staff and 23% of taught students.

¹³ Langer-Crame, M. et al (2019). Digital experience insights survey 2019: findings from students in UK further and higher education. Jisc [online]. And Langer-Crame, M. et al (2019). Digital experience insights survey 2019: findings from teaching staff in UK further and higher education. Jisc [online]. Both available from: <https://digitalinsights.jisc.ac.uk/our-service/our-reports/>

Overall, researchers, teaching staff and students have broadly similar attitudes and experiences.

Preferred apps

Asked to name an app they find ‘really useful’ in their role (question 24), researchers typically named tools for producing research content (data analysis, coding, making and productivity). This is in clear contrast with taught students, who named tools for consuming research content (search and discovery) much more often, and rarely named tools for research production. This is as we would expect from their respective roles.

Support for digital skills development

We have noted the very low level of agreement with the statement that researchers have ‘reward and recognition for the digital skills [they] develop’ (question 28). However, this still compares favourably with the equivalent finding from the teaching staff survey:

- » Researchers 13% agree, 38% disagree they have recognition (49% neutral)
- » Teaching staff 9% agree, 52% disagree they have recognition (39% neutral)

The data also suggest that researchers feel somewhat better informed than teaching staff about key digital responsibilities such as keeping data secure, digital copyright, and their health and wellbeing as digital users (question 28).

Asked to rate support for their digital skills development, the mode and median category chosen by researchers was ‘average’ (question 31). This is the same as reported by teaching staff in their 2018/19 survey. Taught students were not asked an exactly equivalent question.

Overall, the experience reported by researchers was often intermediate between the experience reported by taught students and the experience reported by teaching staff, congruent with the researcher sample being made up of roughly equivalent numbers of research students and research staff.

Additional hypothesis-led comparisons

We hypothesised that satisfaction with digital skills provision (rating question 31) would depend on a number of underlying factors, including other forms of support. We first chose to investigate whether there was any correlation between the digital skills satisfaction rating (question 31) and the provision of relevant training (question 28a), or the provision of specialist technical support (question 19b).

We found a positive correlation between the rating (question 31) and agreement with the prompt ‘[the organisation provides] digital skills training that’s relevant to researchers’ (question 28a) (Spearman’s rho = 0.578, N=455, p<0.01).

We also found a positive correlation between the rating (question 31) and agreement with the prompt ‘You can access expert support to help you use specialist technology’ (question 19b) (Spearman’s rho = 0.505, N=454, p<0.01).

This shows there is an underlying relationship between access to provision (relevant training and expert support) and overall rating for digital skills support - as we would expect.

We hypothesised that satisfaction with digital skills support (rating question 31) might also correlate positively with other ratings questions relating to quality of infrastructure (question 15), and at a personal level with measures of individual attitude, motivation and confidence to use digital technologies.

We found a significant positive correlation between question 31 (overall rating for support) and question 15 (overall rating for quality of infrastructure) (Spearman’s rho = 0.655, N=460, p<0.01). This suggests that organisations are supporting researchers’ digital skills when they attend to basic infrastructural issues such as access to networks, hardware, software, and digital resources.

We found a weak but significant positive correlation between question 31 (overall rating for support) and question 25c (‘I enjoy exploring new digital approaches to my research’) (Spearman’s rho = 0.101, N=457, p<0.05). We also found a weak but significant positive correlation between question 31 (overall rating for support) and question 26 (rating: motivation ‘to use technology to support your research’). (Spearman’s rho = 0.119, N=460, p<0.05). However, there was no correlation between question 31 (overall rating for support) and question 11 (rating: confidence ‘to try out new digital technologies’) (Spearman’s rho = 0.06, N=461, p=0.22).

The two significant findings suggest that there might be a relationship between an individual’s motivation to use digital in research (as measured by question 25c and question 26) and organisational support to develop digital skills. Because correlation does not identify causation, we cannot say whether individual motivation influences the rating given for support, or whether support influences motivation.

Other unmeasured variables such as the wording and ordering of these questions may also have an influence on these findings.

Authors

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