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Introduction

The recent, rapid move to remote learning and teaching has been a profound shock to the higher education sector, which has delivered emergency technology-enhanced learning, teaching and assessment at speed and at scale. What happens next offers both challenge and opportunity.

Jisc, with partners Universities UK, Advance HE and Emerge Education, is working with universities and the full range of UK sector agencies, representative bodies and professional associations to ensure we can respond to the changing needs of students and staff. We are doing this through an initiative called Learning and teaching reimagined, an in-depth look at university learning, teaching, assessment and student support in a digital context.¹

There are three horizons under consideration by the initiative:

> **Short term**: the current (2020) rapid transition to technology-enhanced learning and support as a consequence of the COVID-19 pandemic (H1)

> **Medium term**: university ambitions and support for transition to a sustainable plan in academic year 2021/22 (H2)

> **Long term**: developing a vision for the future with the academic year 2030/31 in mind (H3)

We are convening the best of sector expertise to learn from recent rapid change, identify what learning and teaching transformed looks like and determine a tangible route map for the future. Collectively we aim to solve problems and improve access to the latest support, ensuring that university leaders realise the strategic change required to deliver and sustain a high-quality technology-enhanced learning and teaching experience for students and staff.

¹ Throughout this report we use ‘university’ to include all higher education institutions.
This paper describes the outcomes of the early work of the initiative. Extensive research and best practice in technology-enhanced learning already exist and so our research to date has focused on the sectoral response to COVID-19. Throughout the initiative, we will continue to develop a view of learning and teaching transformed, supplementing the existing stock of advice and guidance, reports, resources and case studies for university leaders. A subsequent report will expand on these initial ideas and map out the landscape of change that is needed to embrace digital transformation more fully. A project focused on further education, \textit{Shaping the digital future of further education and skills}, is running in parallel to \textit{Learning and teaching reimagined}.

The scale of the challenge cannot be overestimated. With physical restrictions likely to remain in place in university facilities for the foreseeable future, and many universities starting from a low digital base, there is a long way to go to secure high-quality provision that meets rising student expectations. Those expectations must be seen within a dynamic and evolving context beyond COVID-19, encompassing the climate emergency and social movements such as Black Lives Matter. There is a resulting need for universities to be more adaptable, open and responsive as they work towards a sustainable higher education system for the immediate and long-term future.

Across the board there is generally a low, but growing level of digital maturity in learning and teaching. There is widespread awareness and experimentation in technology-enhanced learning and it remains far from mainstream. However, the imperative of the current situation and the scale of the challenge also mean there is significant willingness to support national sector-wide efforts to develop capabilities and share best practice in online and emerging hybrid (blended) models of learning and teaching. It is an opportunity that must not be squandered.

“The months to come are the critical test for educational technology. If we get this wrong, then we could set this whole area back years because if people take away the perception that this is what we've been talking about in terms of online learning, and it goes badly, you can't recover from that.”

\textit{Neil Morris, dean of education, University of Leeds}
Executive summary

This report brings together findings from the first six weeks of the Learning and teaching reimagined collaboration to learn from recent rapid change, before we begin to identify what learning and teaching transformed looks like and determine tangible routes to get there. It draws on our sector webinars, meetings and wider research to explore three specific areas: changing student needs, changing staff needs and emerging best practice in response to COVID-19.

Summary findings

Through our research and engagement to date, we have identified some clear insights which are distilled below. We provide interim recommendations, linked to our three horizons – short term (H1), medium term (H2) and long term (H3). Areas requiring further exploration will guide our future actions, with a view to shaping fresh advice and guidance, and informing new sector support mechanisms or recommendations.

Student insights

<table>
<thead>
<tr>
<th>We've learned</th>
<th>We need to explore further</th>
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<tr>
<td>Students entering university in autumn 2020 have very mixed feelings about</td>
<td>How to communicate better the potential richness of the technology-enhanced learning</td>
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<td>online learning, based on their experiences to date and affected by negative</td>
<td>landscape and experience. (H1)</td>
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<td>media reports. They may not have a deep understanding of how varied and</td>
<td>Students will need familiarising with the virtual campus as much as, traditionally, they</td>
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<td>beneficial good online learning can be.</td>
<td>needed induction into the physical campus. (H1)</td>
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<td>They have a wide range of digital skill competency – it should not be assumed</td>
<td>How to move the portrayal of ‘online’ from being a technology-related issue to an issue of</td>
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<td>they come with all the necessary digital skills. They are likely to need more</td>
<td>good pedagogic design and implementation. (H1/H2)</td>
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<td>digital upskilling and some may need greater support.</td>
<td>How best to improve students’ digital skills. (H2)</td>
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<td>We've learned</td>
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<td>Given the diversity of the student population, technology can be an enabler,</td>
<td>The impact of the changing modes of learning and teaching provision on the diverse student</td>
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<td>by providing more flexible opportunities to learn, but it can also be a</td>
<td>population, on disadvantaged students in particular and on diversity in the student population. (H1/H2)</td>
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<td>barrier. The impact of the digital divide and the differing access away from</td>
<td>Opportunities to design accessibility and inclusivity into technology-enhanced learning. (H1/H2)</td>
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<tr>
<td>campus to the devices and bandwidth needed for study has come to the fore.</td>
<td>Interventions to address the digital divide, such as the provision of laptop loans and bursaries, will need to continue and extend beyond hardware to connectivity, access to specialist software and the computing resources that support that software. (H1/H2)</td>
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<tr>
<td>Digital inequality is a barrier that needs to be tackled with a long-term,</td>
<td>Access to adequate, secure bandwidth and off-campus working environments. (H1/H2)</td>
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<td>flexible and sustainable response. A laptop loan is not just for exams and</td>
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<td>not the only enabling element that needs to be considered.</td>
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<td>The safety and security of online communities are going to require an even</td>
<td>How to nurture communities online – learning from what does/doesn’t work, how feelings of</td>
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<td>higher profile, with the right policies and safeguards in place.</td>
<td>isolation can be mitigated and what safeguards need to be in place. How networks, friendships</td>
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<td></td>
<td>and ‘café moments’ can be nurtured, while also ensuring safeguarding and protecting staff. (H1)</td>
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<td></td>
<td>How universities can manage interactions and online learning more effectively. Students want</td>
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<td>universities to take action in the learning and teaching domain, in preference to the welfare</td>
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<td>domain. (H1)</td>
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<td></td>
<td>How universities can create an inclusive and supportive approach as part of high-quality</td>
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<td>technology-enhanced learning and teaching offering. (H1/H2)</td>
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**Staff insights**

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<thead>
<tr>
<th>We’ve learned</th>
<th>We need to explore further</th>
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<tr>
<td>It appears the large majority of staff started lockdown with limited skills or experience in online teaching or tools.</td>
<td>Building staff confidence and comfort in mastering both the tools and the pedagogy is essential. The ability to adapt and shift approach cannot be separated from digital skills. (H1/H2)</td>
</tr>
<tr>
<td>There are reports of university training classes being vastly over-subscribed and many staff have come a long way in a short time in discovering new tools and adapting to new environments, and some have delighted in their discoveries.</td>
<td>Whether the different expectations of incoming students will enhance or inhibit staff willingness to experiment.</td>
</tr>
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<td>There is an appetite to evidence and share these positive experiences.</td>
<td>How to define and develop the benefits of technology-enhanced learning for teaching staff. (H1/H2)</td>
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<tr>
<td>Full digital fluency for staff may be hampered by their own lack of experience of being on the receiving end of technology-enhanced learning. Staff may instinctively feel more comfortable with simply automating their established styles of delivery and content.</td>
<td>How universities can create the right environment to develop digital fluency and confidence not just with online tools, but with new ways of approaching and thinking about delivery. How staff can engage with students to identify what works. (H1/H2)</td>
</tr>
<tr>
<td>Translating established techniques onto new platforms without altering design and delivery is not enough. It requires real transformation, which demands an adjustment in thinking and sufficient staff comfort and confidence to shift to new ways of online teaching.</td>
<td>How to help staff adopt different delivery styles, including asynchronous learning, highly interactive teaching, more bite-sized delivery, and new and different types of learning activities. (H1/H2)</td>
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<td>Experts are keen to grasp this opportunity to rethink the role of the lecture – and lecturer – but it is unclear how prepared many staff are to take this step, which involves not only changes to workload but also hard-won identity.</td>
<td>How the sector can change its system and culture of rewards and recognition, and change how staff gain self-esteem, peer recognition and identity, to suit the technology-enhanced environment, particularly where ‘the lecture’ is no longer the centrepiece. (H2/H3)</td>
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<td>Staff fatigue, anxiety and lack of confidence during a summer of intense activity are real concerns and not the ideal mindset or conditions for innovation.</td>
<td>Creating the conditions for preparedness for radical, transformative, sustained change and learning from other sectors about approaches to ‘Zoom fatigue’ and wellbeing. (H1)</td>
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We’ve learned

There has been high take up of collaboration tools, in particular MS Teams. Intensive support from IT teams was necessary in the emergency response online, but that support will need to be sustained for some time yet.

There is a paucity of open, sector-wide basic resources, standards and knowledge that can be used to bootstrap online module development. Individual universities are having to (re-)invent everything themselves from scratch.

Emerging best practice insights

We’ve learnt

Universities can move rapidly and cover huge distances when needs must. There is much to celebrate in this current phase of digital transformation.

Content creation for technology-enhanced learning is a complex area.

Experts have long understood the benefits of student involvement, but practice appears to remain patchy.

Universities are postponing tackling more ‘difficult’ practical subjects (e.g., labs, studios and workshops), by deferring teaching until second semester or second and third terms.

A change of this magnitude needs the leadership and backing of senior management, together with a change in investment priorities from the purely physical to embrace the digital estate.

The move to digital assessment has been huge and rapid but also highly complex, with a wide range of approaches and standards necessitated by haste.

We need to explore further

What can be done at the sector level to share resources, knowledge and experience about good practice and tools. (H1/H2)

Current examples of best practice. (H1)

How to ensure that this type of rapid change is sustainable on an ongoing basis. (H2)

Universities as producers of content, to reach a diverse range of audiences and markets, and the role of collaboration across the sector on content creation. (H1/H2)

Assess potential of new and innovative use of immersive technologies to support disciplines heavily reliant on practical learning and coursework. (H2/H3)

Open debate and discussion about senior management and governors’ support and investment in digital. (H1)

How best to manage the trade-offs and compromises of moving to digital assessment, and how to create sector-wide common standards for proctoring and credentialing. (H1/H2)

The next phase of the Learning and teaching reimagined initiative will explore the long-term strategic ambitions of university leaders for sustainable digital transformation in readiness for 2021/22 and identify building block areas that have already changed pedagogic practice for the better. We will consider the impact of this anticipated change for students, staff, culture, investment, access to resources and technologies. This will inform our vision, strategic framework and roadmap for the UK as a leader in technology-enhanced learning.
Technology-enhanced learning encompasses a wide variety of learning models and approaches, digital technologies and services. In essence, a teacher engages digitally with a learner in the context of a pedagogic framework and the outcomes are monitored and measured using an assessment strategy.

The history of HE digital technology-enhanced learning in the UK goes back several decades. There has been no shortage of government policy and several major top-down initiatives have tried to stimulate development and uptake including the Computer Board Computers in Teaching Initiative that set up subject centres in the 1990s, the ill-fated HefceUK eUniversities company and website that promoted online university degrees in the 2000s, and in the 2010s the Hefce Centres for Excellence in Teaching and Learning (CETL) programme (which had a substantial technology-enhanced learning component), to name but three.

Although there are some UK universities that operate almost exclusively online, such as Arden University, Open University and University College of Estate Management, and others with substantial elements of their activity open to online learners such as the University of Edinburgh online Masters programmes and University of London Online, the majority of university experience is limited only to pockets of good practice.

The online learning ecosystem in the UK is extensive with a substantial number of actors. In addition to universities themselves, who are major independent actors, the commercial sector is populated by major system suppliers eg Blackboard and Canvas Learning Management Systems, online service platforms such as those from Pearson, Wiley and StudyGroup and a growing economy of startups facilitated by organisations such Emerge Education. There is a number of university-developed worldwide online learning platforms in widespread use, such as Coursera, edX, FutureLearn and Udacity.

The various technologies on offer include major all-encompassing platforms that can manage all elements of a full online programme, such as Imperial College's Insendi platform that underpins its Business School Masters programmes, to small specific-purpose applications that support a single function in one class, such as a mathematical simulation or free text analyser.
So, what is different and important about technology-enhanced learning at the present time? The most obvious and biggest difference is the imperative to move online as a result of the disruption to in-person teaching by COVID-19. This is causing a digital shift that is orders of magnitude bigger and faster than anything that has preceded it. At the same time, general conditions for digital acceleration in universities are as favourable as they have ever been. The base technology is now at a new level of maturity, significant experience has been amassed from previous successes and failures, and staff and students are now more digitally savvy than ever before.

However, as the Quality Assurance Agency (QAA) noted in June 2020, when it published its Building a Taxonomy for Digital Learning, there is a need for a common language to describe digital approaches to programme delivery. The terminologies used to describe the variety of digital learning experiences frequently differ from institution to institution, and even within institutions. The QAA’s taxonomy defines the most common terms used to describe how universities, colleges and their students engage with digital learning and teaching, including ‘distance’ or ‘remote’ learning, ‘face-to-face’ or ‘in-person’ teaching, ‘blended’ or ‘hybrid’ learning, and ‘campus’ or ‘onsite’ delivery. Here we use ‘technology-enhanced learning’ to describe the wealth of ways in which digital technology, paired with effective learning design, can enable, enhance and transform learning, teaching and assessment.

It is tempting when discussing technology-enhanced learning to focus on the digital technology element, not least because of the cost and challenge of learning how to use it. However, we are very clear that the pedagogic considerations are vastly more important. All successful education and training requires close attention to learning design and content creation, and technology-enhanced learning is no exception. The imperative to start with the learning outcomes and work back to the teaching inputs has never been more important than in this period of digital transformation. Just as there are great lectures and poor lectures,

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there is good and bad online learning and teaching. No amount of good technology can ever rescue poor learning design, content and presentation.

There are many ways to design, develop and deliver technology-enhanced learning. Some of these involve dynamic, interactive, real-time lecturer-student interactions (synchronous learning). Others take a different approach in which pre-produced materials are made available for students to consume in their own time without direct interaction with a lecturer (asynchronous learning). In both these modes the quality of learning materials can vary greatly from being low cost, using a low level of tech and with low production levels, to being very high cost, high tech and high production.

There are advantages and disadvantages to all approaches and, in choosing one, the following factors are usually borne in mind: affordability, complexity, engagement, feedback, flexibility, isolation, location, motivation and schedule. There are also a number of courses that are extremely difficult to deliver online due to their highly practical nature, need for specialised equipment or just the need for human interaction (such as group acting/singing/music performances). No single approach can be positioned as the ‘best’ to aim for as far as an individual course or institution is concerned when designing a technology-enhanced learning strategy.

Table 1 provides for illustrative purposes a small number of many possible examples of contemporary technology-enhanced learning practice that are widely employed.

<table>
<thead>
<tr>
<th>Low tech, low production</th>
<th>High tech, high production</th>
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<tr>
<td><strong>Synchronous</strong></td>
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<tr>
<td>&gt; Facebook Live presentation</td>
<td>&gt; Virtual Laboratory using Labster</td>
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<tr>
<td>&gt; Voice over PowerPoint lecture via Adobe Connect</td>
<td>&gt; Real-time broadcast of showpiece lecture using MS Teams Live</td>
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<tr>
<td>&gt; Tutorial via MS Teams or Zoom</td>
<td>&gt; Cloud-based simulation game</td>
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<tr>
<td><strong>Asynchronous</strong></td>
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<tr>
<td>&gt; Email conversation</td>
<td>&gt; Pre-recorded video-based lecture with Panopto</td>
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<tr>
<td>&gt; Threaded conference system</td>
<td>&gt; Virtual library</td>
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<td>&gt; Podcast</td>
<td>&gt; Advanced MOOC</td>
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<td>&gt; Messaging and chat</td>
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As the following sections demonstrate, experience in technology-enhanced learning is growing fast. There are already examples of good practice in universities all around the country. However, it is very much the case that student expectations are rising, staff experience and skills levels are far below what is needed, and other countries are significantly ahead of the UK.

Pre-COVID-19, technology-enhanced learning in the UK had tended not to be driven from the top as a central part of a university’s strategic agenda. There might be disciplines or schools where innovation flourished but whole-institution approaches to delivery excellence were rare, with a few very notable exceptions. Universities vary widely in their levels of digital maturity and there is a substantial knowledge and experience gap, both within and across institutions.
The current year has been one of unprecedented disruption for students, from industrial action at the start of the year to the lockdown of universities in March and the rapid shift to distance learning and teaching. For those graduating this year, and years to follow, the graduate labour market has become a much more uncertain place. Those who had been planning to go to university for the first time in the autumn face a very different experience in almost every aspect to that which they had envisaged when they applied.

The student population is diverse, as are the courses they study and the sophistication level of the technology-enhanced learning and teaching they will have been offered in recent months. Consequently, the kinds of learning and teaching they will have experienced over the past view months will vary enormously, as will their ongoing needs. It is critically important that we continue to listen to a broad range of student voices and use this to drive how their experience is delivered, in learning and more widely.

Key themes have emerged strongly in the work we have undertaken and in a number of surveys conducted in the sector since lockdown. Students now expect to be learning at least partially online but it should not be assumed that they come to it with all the necessary skills, competencies or positive expectations, and may need support to get up to speed, as well as to navigate their virtual campus, form networks and friendships, avoid isolation and stay motivated. Others worry that there may be a restricted or even absent set of co-curricula, social and sporting opportunities that are often seen as a core part of student life.

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4 Jisc (2020) Learning and teaching reimagined. jisc.ac.uk/learning-and-teaching-reimagined
Digital approaches are now vital in supporting the learner experience, although it is clear that to date the opportunities have not been exploited to anywhere near the maximum possible benefit. Students provided with a greater use of advanced technology perceive a significantly better student experience but what has been offered widely to date appears basic from the perspective of learners in most cases.

Changing student expectations

There have been several recent, post-COVID lockdown surveys that tell us a great deal about student reactions and views on student life in lockdown and their experience and attitude to technology-enhanced learning. In interpreting the results it is important to realise that both the experience itself and student perceptions of it have changed as they have become more familiar with new models of learning and teaching.

The landscape is rapidly shifting for students and so are their expectations. According to Ucas/Youthsight survey data, in the early phase of the COVID-19 lockdown the prospect of a term of online learning was the greatest concern for prospective students. That has now been overtaken by worry about loss of the traditional student experience. In fact, in an NUS survey conducted in early July, more than a third of students now say they would feel ‘unsafe’ returning to face-to-face teaching on campuses in September, nearly half expect to be taught online in the first term of the coming academic year and 64% say that they would feel safe if taught through blended learning.

However, there may also be a gap between expectations and reality, which is not helped by the proliferation and confusion of terms used for online learning and teaching, including hybrid, mixed, blended, active blended, technology-enhanced, synchronous and asynchronous. We cannot expect students to understand automatically the potential richness of the technology-enhanced learning landscape without explicitly describing what they can expect from it. This is especially true for students entering university this September who are likely to have had a very mixed experience of remote learning and teaching during their last term of secondary school. A somewhat negative media and political narrative, which has misrepresented the emergency response as the best that universities can offer in terms of online learning, is unlikely to have helped. Despite this, Ucas figures have remained buoyant with a record number of UK 18-year-olds having applied to UK universities and colleges by 30 June 2020.

Those students who have experienced good quality digital learning typically have a positive response to it. The recent Advance HE/Hepi Student academic experience survey 2020 found that while students felt the lack of face-to-face classes due to COVID-19 affected their view on value-for-money, there is little evidence they perceive the quality of the teaching has been impacted. Indeed, there is some evidence of a positive perception of how teaching staff have supported independent study once the impact of COVID was felt, based on responses of students surveyed from late-March onwards.

5 Ucas/Youthsight (2020) An applicant’s view: inside the mind of the 2020 applicant.ucasmedia.com/sites/default/files/A_Students_view_1June.pdf
6 McKie, A (2020) “UK students ‘would feel safer’ if blended learning continues.” THE. timeshighereducation.com/news/uk-students-would-feel-safer-ifblended-learning-continues
Between interviews pre-16 March and post-16 March 2020 (pre- and post-lockdown), those who felt “Teaching staff regularly initiated debates and discussions” rose from 37% to 43%, those who felt “Teaching staff used lectures / teaching groups to guide and support independent study” rose from 58% to 62% and “Teaching staff helped you explore your own areas of interest” from 36% to 42%.

Students are even more positive when what the survey calls ‘advanced technology’ (such as the Blackboard learning management system and Panopto lecture capture application) is used. In these cases, students were much more likely to feel they have received good value and, perhaps more significantly, to feel they have learnt a lot and that the skills gained will play a key role in their future. For example, 73% of those where advanced technology was used would choose the same course again, against 64% with basic technology and just 49% with no technology. However, an overwhelming 90% reported that the technology is currently basic, rather than advanced (7%).

Working in partnership with students and staying in touch with their perspectives is crucial. We tested the views of staff in our second webinar against the views of students from the first and uncovered a mismatch of priorities that surprised many of those present. For example, Jisc’s digital experience insights survey of more than 20,000 higher education students showed that “practice questions available online” would be most useful to learners, while our webinar attendees thought that it would be “time working online with other students”. As one attendee said, this may suggest a “worrying assessment focus rather than a learning focus” from the students in the digital experience insights survey. Frequent checking of student views and needs, alongside the use of data analytics, can help to ensure that students’ views are better understood.

“We’re checking, auditing, surveying students, not just waiting for the NSS or module evaluations. During lockdown we introduced spot surveys every couple of weeks with quick questions to make sure that we had more of a 360 insight. We had a debate about whether or not it made sense because of possible low participation rates but, my view, getting feedback from one person is better than feedback from nobody. We need those good data analytics in terms of students being engaged, attending, participating, using resources.”

Deputy vice-chancellor (education and students), University Alliance university

9 jisc.ac.uk/digital-experience-insights
Recommendation:
Student perceptions of technology-enhanced learning will change and universities might wish to consider recurring pulse surveys of attitudes expectations and outcomes.

Student digital skills

“Sadly, the narrative that we often hear around the digital fluency of students is frankly, a load of nonsense. It’s just not true. It’s all very well using your thumbs very quickly to type a message or to use three apps to death. That does not translate into a focused, effective approach to learning, using digital tools.”

Alejandro Armellini, dean of learning and teaching, University of Northampton

Students arrive at university with a widely varying range of digital skills and competencies. They are likely to need more skilling, at greater speed, before starting formal online university teaching; it is important to avoid assuming they come with the level of competency that is needed. To be successful, HE students need to be able to search, synthesise, evaluate, analyse and present complex information from multiple sources. These types of skills cannot all be learnt from proficiency in the use of social media and office applications alone.

According to the Jisc 2019/20 student Digital experience insights survey, only a third described themselves as ‘very confident’ in trying new technologies and nearly a third described as ‘average’ the quality of support they received from their university to develop their digital skills. As well as affecting their learning while at university, this also has an impact on students’ onward destinations and the ever-increasing demand for graduates with extensive and up-to-date digital skills.

Universities, such as Greenwich, are using online tutoring to develop academic writing skills.

Students will also need familiarising with the virtual campus, as much as they have needed to do in the past with the physical campus. Much work is already being done to ensure that the induction in 2020/21, which is likely to need to be a longer process than usual due to its online nature, is planned extra carefully, involving much more creative thinking. Advance HE’s report Creating socially distanced campuses and education project: induction shares information, inspiration and intelligence, in order to co-create solutions to specific aspects of the challenge. Jisc’s induction guide for autumn 2020 describes how now, more than ever, the digital estate is as much part of the organisation as the physical campus and the digital experience is not a bolt-on but a necessity. It includes examples of how some universities are innovating, such as the University of Sussex’s zombie apocalypse game, designed to introduce students to library resources, or the University of Huddersfield’s use of escape room games.

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10 jisc.ac.uk/digital-experience-insights
12 https://libguides.gre.ac.uk/studiosity
As almost every element of student life moves online, online safety and security are going to require an even higher profile. With greater use of online communities, the heightened exposure to online harassment and threats from peers and the wider environment cannot be ignored by universities who will need to ensure they have the right policies and safeguards in place to protect and support both students and staff. With online etiquette a key issue, the Open University has developed an online module on Communicating Online as part of its Being digital series.\(^{15}\) The module ensures that interactions with others online are appropriate and effective.

COVID-19 has also opened new vulnerabilities for cyber attackers to exploit and there has been an increase in phishing attacks (attempts to steal usernames and passwords).\(^{16}\) It is also harder for a university’s IT security team to provide the same level of IT security to remote users as can be delivered on campus, pointing to an increased need for increased vigilance and user education to avoid students and staff falling victim to scams.

**Recommendation:**
Contrary to popular views of so-called ‘digital natives’, today’s students have widely varying levels of digital proficiency. Universities might find it beneficial to conduct a skills audit of students and build appropriate digital skills training into curricula.

### Student equality, diversity and inclusion

“We’ve heard from some departments where students at home have had to borrow or share devices with other siblings and there have been bandwidth issues as well because previously they’ve been reliant on laptop loans at university or using PC classrooms for their work. It’s certainly something we’re looking at now, and we’re surveying our departments and our students in order to determine if there are any shortfalls in access to software or hardware, and then thinking about how we can support those disciplines, those students, for the next academic year.”

_Head of the programme design and learning technology team, Russell Group university_

The impact of the changing modes of learning and teaching provision on the diverse student population, and on widening participation students in particular, needs to be explored further. Technology can be an enabler, by providing more flexible opportunities to learn, but it can also be a barrier. One aspect that has come into sharp relief is the **digital divide** and the differing access away from campus to the devices and connectivity needed for online study.

Many universities stepped up quickly in 2020 with laptop loans and bursaries, particularly where devices were needed to undertake final year assessment, but it is now clear that support needs to be an ongoing and more nuanced process. It is worth noting that some students are accessing online learning via their

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15 open.ac.uk/libraryservices/beingdigital/pathways/9/8
16 jisc.ac.uk/blog/securing-remote-users-from-cyber-threats-in-the-coronavirus-age-14-jul-2020
phones whose limited screen size and processing capability can have an impact on the way in which they engage with the learning. The benefits to these students of accessing learning through alternative technologies – and the options on offer to them for accessing those technologies – should be explained. Needs will change and support must be flexible. The requirement extends beyond hardware to connectivity and remote access to specialist software.

“We’ve got final year engineering students who need to use specialist software to get their research projects done. They not only need access to that software but also the computing power to run it. They would normally access it in a specialised teaching space with clusters of machines. If those spaces aren’t available, how are these students going to do this work with their MacBooks?”

VC at a research-intensive university

The University of Dundee has substantial experience in supporting disabled learners using assistive technologies and is undertaking fundamental research into its development and use\textsuperscript{17}.

Some universities, such as Aberdeen, are now setting out technology requirements for each course and actively surveying students to find out what they have personally and what support they require if they do not have it. This needs to become widespread and arguably considered from the institutional as distinct from course-specific level to ensure effective student support is deployed at scale.

In meeting the needs of a diverse student population, there is a valuable opportunity to design accessibility into technology-enhanced learning – putting inclusivity at the heart of online curriculum development. While compliance with recently introduced \textit{digital accessibility} regulations appears to be patchy\textsuperscript{18}, the pandemic has thrown the requirement for change into focus.

\textsuperscript{17} dundee.ac.uk/guides/assistive-software
\textsuperscript{18} Jisc (2020) Steps to improve your institution’s digital accessibility. jisc.ac.uk/news/steps-to-improve-your-institutions-digital-accessibility-21-may-2020
Producing accessible content improves the student experience for everyone: fundamentally, it is well-designed content that is understandable, flexible and robust, making it easily transferable to different contexts and across different technologies. For example, captioning video files or using speech-to-text translations helps deaf and hard-of-hearing learners but also supports students who are studying in a noisy environment – such as those completing assignments at home while their children are off school.

“The move online caused by coronavirus means people are thinking about digital delivery and asking the right questions. Delivery, broadly, has to be much more professionally produced than it was before. We have an opportunity, while we’re addressing that, to include accessibility requirements for the benefit of all.”

Drew McConnell, information manager, University of Glasgow

**Recommendation:**
Given the diverse nature of the student body, universities should adopt accessible and inclusive approaches to technology-enhanced learning from the outset of learning design.

**Student wellbeing**

“The impact of COVID-19 is being felt differently across the university community. Both the pandemic and the transition to emergency remote teaching has served to magnify a range of health, social and educational inequalities. Low-income, female, those with pre-existing mental health conditions, living in overcrowded households, living in urban areas, living with children, those from lower socioeconomic groups, nurses, carers, care leavers and estranged students are just some of the populations whose mental health has been disproportionately impacted during lockdown.”

*Planning for a sustainable future: the importance of university mental health in uncertain times.*
Produced by Student Minds (June 2020)

Digital learning adds a further layer of complexity to an already complex student experience for some students, especially against the backdrop of a pandemic. According to recent Pearson/WonkHE research, 41% of students surveyed said they had struggled to manage their wellbeing in the absence of face-to-face engagement with friends, peers, and lecturing staff. Around a third (34%) said that learning in a new way and format had been challenging, and 34% said they were struggling with managing their own time and schedule in the absence of a campus-taught timetable. Isolation was said to be difficult by 29%.

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However, a key message from the survey is that the action they want universities to prioritise is in the learning and teaching domain, rather than the welfare domain. "Responses throughout the survey suggest that wellbeing issues are not simply the result of students being at home and the concerns over COVID-19, but that the way that universities have managed interactions and online learning has increased their anxiety, and had a negative impact on their wellbeing. It’s not simply about putting support mechanisms in place to help students with their wellbeing; it’s about stopping the causes."

When asked what universities need to do to meet expectations for next term, 59% chose “high quality online teaching” as their most important area to tackle, well above interventions such as social interaction, wellbeing support and even access to learning resources.

Finding ways to build a sense of community to reduce feelings of isolation is going to be particularly important for those students arriving at university for the first time in the autumn, who will not have had the opportunity to build up support networks and friendships before the move to online, unlike those already at university when the pandemic struck. As well as community building for effective technology-enhanced learning, there is also a need to find ways to allow for the serendipitous encounters – or ‘café moments’ – that are so common and valuable on physical campuses.

Two Jisc student partners, Laura, a PhD student in gerontology and ageing, and Brad, an undergraduate second year digital film production student, were interviewed in Jisc’s webinar on changing student needs. They talked about the upheaval and uncertainty and how it had adversely affected their and their peers’ learning, welfare and financial situation. But there was cause for optimism in how their respective institutions had responded to the crisis and the digital capabilities of the staff to keep contact and learning going effectively during the emergency measures.

Brad also referred to how his institution is taking a considerate and flexible approach to student wellbeing with measures such as suspending the need for students to provide written evidence from a GP of health difficulties when asking for learning flexibility.

Laura commented how the student experience could be enhanced by rationalising and collecting in one easy location the digital tools and resources they needed. She also talked about how digital tools had been extremely helpful in maintaining contact with staff and peers, both formally and informally.

Recommendation:
Technology-enhanced learning can amplify some student physical and mental wellbeing issues and should be carefully considered throughout university projects.

youtube.com/watch?v=c0jmRhTpPOU&feature=youtu.be&t=2142
3. Changing staff needs

For many staff, March 2020’s digital shift necessitated an accelerated start from a low base of online teaching and required an intense period of rapid upskilling and experiential learning – while also managing the myriad other pressures of the crisis, from shielding to childcare. It has brought to the fore the need for high levels of staff digital skills, capabilities and confidence. Alongside these, staff development and progression and the importance of reward and recognition should be carefully considered. Throughout the pandemic there has been less research into the staff experience than the student experience, although a study assessing the impact of the COVID-19 lockdown on university students and staff has been launched by the LSE.21

Staff expectations and digital skills

“Staff confidence with technologies has improved through being forced to use them and we’re getting anecdotal feedback that some of these tools have really been very surprising and they’re proactively wanting to look at how they can use them within their teaching.”

Dean of digital education, non-aligned university

If technology-enhanced learning and teaching is to make full use of the possibility and potential offered by digital, then translating established techniques onto new platforms without altering delivery is not enough. It requires real transformation, which demands an adjustment in thinking. Digital technology allows us to break free of the ‘9-5’ teaching mentality. The flexibility and different methods of delivery afforded by technology allow approaches such as more bite-sized delivery interspersed with learning activities to suit different courses, departments and tutors.

However, this requires staff comfort and confidence in shifting to new ways of technology-enhanced teaching. Staff may well have little or no experience of asynchronous online teaching – or designing, developing and delivering digital learning – and may feel instinctively more comfortable with the synchronous teaching with which they are familiar. There is potentially the challenge for staff with disabilities such as dyslexia, who may be teaching a highly vocational course that wouldn’t usually require much writing but now does as it shifts online.

Technology-enhanced learning experts are keen to grasp this opportunity to rethink the role of the lecture – and lecturer – but it is unclear how prepared many staff are to step outside their comfort zone, which involves not only changes to workload but also hard-won identity. Some of this no doubt results from inertia, but it also stems from a widespread lack of understanding and experience of what is possible and how learning and teaching can be made more exciting and fulfilling for both staff and students.

Enabling staff development and progression as expectations change, and having the right environment to do this, both culturally and structurally, is vital. Equally, the importance of rewarding and recognising staff and the potential barrier to change this may cause in failing to do so must be considered.

The ability to adapt and shift approach cannot be separated from possessing good digital skills. Staff digital capabilities have taken a huge leap over the last few months, with anecdotal evidence from universities reporting significant take-up of digital skills workshops and training sessions for staff. For example, the University of Lincoln moved quickly to run daily webinars and digital clinics for staff and created a new website, Remote Teaching, to collate resources for staff, which had more than 10,000 hits over a six-week period. A recent survey of 60% of the staff found that two thirds felt very supported during the remote teaching period with a further 27% feeling moderately supported.

The University of Leeds recruited a student taskforce of about 30 students to ‘buddy’ with lecturers and support them remotely as they used Blackboard Collaborate or Teams to deliver lectures. In the intense early lockdown period it helped the university cope with the scale of demand for support needed with 300+ lectures taking place a day.

According to the Jisc 2019/20 Digital experience insights survey, before lockdown 74% of teaching staff said they never teach in a live online environment, only 11% used live polling or quizzing and only 20% gave personalised digital feedback. This is perhaps unsurprising when only 9% of teaching staff agreed they receive specific reward or recognition when they develop the digital aspects of their role. Only 34% of teaching staff said they had regular opportunities to develop their digital skills and just 9% said they received any reward or recognition for developing the digital aspects of their role.

While this has clearly changed in the past few months – dramatically in some instances – as staff developed familiarity with the tools and skills they have needed for online teaching, universities have been operating in many cases largely in reactive mode. Some teaching staff are requiring much ongoing support, especially from IT teams and learning technologists, as they continue to innovate the teaching offer. At a time when universities are reprofiling budgets and rethinking professional services due to the financial hit caused by COVID-19, it is essential to take an institutional view of the whole system and not risk the gains that have been made by undermining the structural support.

22 jisc.ac.uk/digital-experience-insights
“It’s really important at this time that we spend time supporting our colleagues and give them permission to fail. Allow people to take chances and experiment.”

Vice principal, PVC learning, teaching and students, non-aligned university

Recommendation:
Universities should invest in building staff digital skills and reward and recognition frameworks as part of professional development to increase the quality of technology-enhanced learning.

Staff wellbeing

Staff wellbeing is a major issue with burnout and change fatigue a very real risk for academic staff. Having worked intensely to adjust to the sustained lockdown crisis situation, many staff are now spending the summer period redesigning their courses and teaching materials for the next academic year, all against a backdrop of continued uncertainty and anxiety.

The specific demands associated with teaching online must be recognised. This might manifest in any number of ways including: ‘Teams/Zoom fatigue’ in synchronous teaching; the very substantial amount of effort required in the preparation and capture of lectures/classes for asynchronous teaching; or perceived pressure to be available online more frequently or rapidly for one-to-one support of students.

However, at a time when demands are greater, support from colleagues may be harder to reach. It may be easier to set up online meetings when everyone is working from home, but an issue frequently mentioned in our webinars and interviews is the loss of the informal connections on campus to ask a quick question or resolve a problem before it escalates. The alternative of scheduling a Teams or Zoom call to discuss minor issues introduces a level of formality or structure that might be unnecessary or off-putting for some. Some universities are introducing tools that can be used for quick and easy communication — the University of York, for example, rolled out the Slack communications application during lockdown for all staff to try to restore that sense of serendipity, and one school at the University of Dundee has initiated ‘random coffee trials’ as a way to get staff to meet up informally online.

Staff digital inequalities have received less attention than those affecting students, but staff may also lack appropriate devices, software and, especially in some rural areas, connectivity. Some staff find that the additional pressures of working from home in terms of lack of space, noise, caring responsibilities and difficulties separating work-life boundaries may also have an impact on their wellbeing.

All university leaders should acknowledge that their workforce has been under serious pressure and in reactive mode for a prolonged period now. This is intense and while it might be energising for some, it is not the ideal mindset for sustained innovation. This may create future challenges, especially when combined with anxiety about what lies ahead in September and October.

Recommendation:
Universities should be aware of the changing needs of staff in this uncertain and unsettling period of digital transformation.
Over the last few months most universities have substantially changed the way they operate. Examples of innovative and effective practice, driven by both staff and students, are now emerging, with significant community interest in surfacing and sharing them. Our initial research has highlighted that assessment, student engagement and flexible learning design are the areas of greatest challenge for universities at this time. Content creation, skill development and practical subjects are also areas of challenge. It is strikingly clear that change of this magnitude also requires clear and confident leadership, and the role of senior management in backing the drive to technology-enhanced learning has been a constant theme.

Designing for flexible learning

“I think now we are focusing on what I would call digital fluency for staff: the pedagogical skills to design and facilitate technology-mediated learning effectively. That’s all about design as well as delivery skills. I’ve heard a lot from universities over the summer about how we’ve cracked online learning and showed that we were agile as institutions moving so quickly. I don’t think what we’ve seen across the sector really does justice to properly designed online learning. Dumping materials online and running a few seminars doesn’t cut it. I think it needs far more purposeful, thoughtful design, with attention to those active learning principles, but done in a more flexible fashion. And that’s what we’re working on with staff now.”

Head of the programme design and learning technology team, Russell Group university
The emergency online learning put in place for a few weeks in the spring as a rapid response to a crisis is a very different situation to well-designed, sustainable pedagogies driven by quality learning, teaching and the student experience. However, there are examples of emerging best practice which indicate some of the principles that should direct well-designed technology-enhanced learning. These include involving students in shaping the learning experience; establishing pedagogically-led design principles that exploit more fully the great potential of digital; investing in staff digital capabilities; tackling digital divides and other barriers to technology-enhanced learning; and promoting accessibility and inclusivity by default. The last three of these topics have been discussed in earlier sections of this report.

The benefits of student involvement in shaping the learning experience can be seen in the co-creation and partnership working exemplified by universities such as Lincoln. Lincoln pioneered co-creation work at scale with its well-established Student as producer programme, which began in 2010, and sees undergraduate students working alongside staff in the design and delivery of their learning and teaching programmes, and in the production of work of academic content and value. This has stood the university in good stead in recent months, in particular the partnership model of students co-producing video assets to support the use of digital across the curriculum.

The University of Sheffield has also seen the benefits of co-creation during lockdown with its Digital skills for dissertations masterclass webinar for postgraduate taught degree students. “We needed to respond to the restricted possibilities for student research during lockdown. We worked with students on alternative ways of gathering research. This was a collaboration between academics, library, study skills centre and was built on a student co-created offer from the year before. We have had to keep adding extra dates to meet demand. Working with students as co-creators makes all the difference. And being digitally ready – we already have a good range of digital learning objects to support student research projects – also co-created with students.”

According to the most recent findings from the Jisc Digital experience insights survey, only 17% of students had the chance to be involved in decisions about digital services. If knowledge, partnership and dialogue are to be genuinely co-created we need to enable students to contribute and share their experience.23

Pedagogically-led design principles are at the heart of the University of Northampton’s work with active blended learning over the last six years, which made the task of moving to ‘active distance learning’ when lockdown started much easier.

“The features, definitions and models that we associate with active blended learning are the same as those in active distance learning, with the exception of campus-based contact. Everything else, eg personalisation, time on task, sense-making, knowledge construction, critique and student centeredness remained exactly the same. The fact that we shifted to active distance learning did not mean a shift back to teacher centeredness, to stand up and deliver, stand up and spout. On the contrary, all the key pedagogic principles remained.”

Alejandro Armellini, dean of learning and teaching, University of Northampton

23 jisc.ac.uk/digital-experience-insights
For example, in March 2020, Northampton's Career futures: Employability skills, a Level 7 placement preparation module that runs across several programmes and involves more than 400 students in class for three hours per week over four weeks, was moved quickly online. Each session was reduced to two hours, with two tutors present taking turns to deliver/facilitate activities or to reply to students’ questions on the chat facility of the virtual classroom. The polling facility in the virtual classroom was used to ask simple questions at intervals to monitor active engagement. In the final week, 12 one-hour sessions around the assessment were run during the day and in the evenings so that the maximum number of students were able to participate. Compared to face-to-face delivery, students participated more and asked more questions via the chat facility. Counter to expectations, engagement with the module was generally much higher with attendance rates up compared with face-to-face. In addition, subsequent assessment pass rates increased from 64% to 83%. 

In contrast to Northampton, Falmouth University had a standing start as digital delivery had been at a minimum before lockdown. As an arts-based university, it is founded on the physical space with state-of-the-art facilities enabling the creation of physical and digital artefacts. However, with a blended learning model planned for September, it has quickly pivoted to an approach in which the majority of lectures, seminars and tutorials will remain online to free up space in workshops and studios for physical activities, and all learning activities and summative assessment used to demonstrate credit-awarding learning outcomes can achieved via online learning.

“It has established the foundations of a new era at Falmouth University and re-invigorated interest within digital learning that will pave the way to achieving our 2030 strategy as we increasingly look to invest in our online offer. With a new Digital Learning and Teaching plan on the horizon, it presents a great opportunity to accelerate our work in this area and provide a new and exciting experience for our students”

Vicky Gosling, director of digital experience, Falmouth University

Content creation and delivery for technology-enhanced learning is a complex area that needs further exploration. Is the best role for a lecturer that of both content creator and deliverer? Is the value in the development of content or the distribution of the content (ie the pedagogy) and the relationship between the student and teacher? Does content need to be created by individual lecturers/teams of lecturers and content creation specialist, or is it more efficient to look at digital learning content in the same way we think about textbooks? It is important that universities are recognised as producers of content which can then be redistributed to different audiences and markets and countries. There are opportunities to diversify, specialise and distribute content in new ways.

**Recommendation:**

Learning design is a critical part of online learning and student involvement is essential; universities should ensure they have strong design capabilities and actively involve students in content creation.

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24 Read this case study in full, and more case studies from the University of Northampton at jisc.ac.uk. [link?]

25 Read this case study in full, and more case studies from Falmouth University at jisc.ac.uk [link?]
Assessment

Has 2020 marked the beginning of the end for in-person, fixed-time, paper-based assessment? Redesigning assessment approaches could enhance the learning experience and generate efficiencies, as set out in Jisc’s *The future of assessment: five principles, five targets for 2025* report, but clearly presents a range of significant challenges for institutions.

Universities took a variety of approaches to final exams this year including timed open book exams, greater use of coursework and purpose-built online assessments. For example, the University of London (UoL) took 40,000 students sitting around 500 exams in 160 countries from face-to-face, pen-and-paper assessment to digital testing in one move, which included digitally proctored exams. UoL rapidly produced three assessment routes using the Moodle and Turnitin platforms for most exams, and Janison and CoSector to cover digitally proctored exams for about 10,000 students. It also extended the timetable to enable large-scale testing and practice for students.

Craig O’Callaghan, UoL worldwide director of operations and deputy chief executive, said at the time: “What we were expecting to do maybe two or three years down the road we’re going to try and do this summer. We’re making an enormous step change in our assessment piece at this moment. In the UK, I don’t think anyone else is trying to do this.”

However, scaling up so rapidly is incredibly complex. There are a number of challenges and trade-offs, particularly in the dimensions of proctoring and credentialing.

Perhaps the most common and pressing challenge is balancing the security of locked-down and digitally proctored exams against the ability of students at home to access the necessary technology and connectivity, not least in home circumstances where access to adequate devices, broadband and quiet spaces may be difficult. This balance is a conundrum that lies at the heart of current digital assessment when students are home-based and solving it presents a major opportunity to assessment designers and developers. How can you make assessment secure, trustworthy and fair, but also adaptable to circumstances?

Universities also see a need for balance between mitigating student stress and meeting the demands for academic rigour, both to satisfy student demands and achieve the recognition of professional, statutory and regulatory bodies (PSRBs) that is critical to the career paths of many students. Some are also looking at reducing the assessment load having reflected on that in recent months.

Assessment today is much more than formative and final summative exams. Feedback/feedforward and peer review need to be integrated into assessment processes and must support student. Where possible students should be involved in co-creating assessment activities.

In order to make assessment smarter, faster, fairer and more effective Jisc has developed a series of five principles of best practice for technology-enhanced assessment to progress towards being more authentic, accessible, appropriately automated, continuous and secure.

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26 Jisc (2020) *The future of assessment: five principles, five targets for 2025*. jisc.ac.uk/reports/the-future-of-assessment


28 jisc.ac.uk/reports/the-future-of-assessment
“I’m hoping that the current situation will have opened the Pandora’s box in that more academics will see the advantages of using digital technology for assessment and use this as a stepping stone or as a building block for exploring what the possibilities are going forward.”

Mariann Rand-Weaver, vice-provost (education), Brunel

**Recommendation:**
Adopt Jisc’s five principles of technology-enhanced assessment.

**Student engagement**

Keeping students engaged and on track with their learning has been of great concern during the lockdown period, with some staff raising concerns in our webinars that motivation and concentration might prove more of a challenge away from campus. Again, the diversity of the student population must be recognised: a university represented in one of our webinars found that, in a study of the move to online, the majority of its disabled students said asynchronous teaching benefited them as they could work at their own pace, review material more easily, and prefer working from home in a comfortable and supported environment. The reduced travel is also a boon for many students. The Open University (OU) *Curriculum design student panel* survey in May 2020 also found that while some students struggled with motivation, others were more motivated, seeing study as a good ‘escape’, and some had finished their studies early due to the extra time they had.

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30 [https://community.open.ac.uk/curriculum-design-student-panel](https://community.open.ac.uk/curriculum-design-student-panel)
According to the OU, universities can support students to stay engaged online by influencing four key areas:

- **Support (pastoral, study skills, learning support)**: a supportive culture of motivation to progress and succeed, with students’ personal tutors playing a key role; straightforward and consistent access to information and resources

- **Environment**: a future-focused, digitally-rich learning environment; accessible and up-to-date online resources across all subject areas; gathering granular engagement data from learning systems to inform how individual students are interacting with content

- **Community**: a focus on academic and social belonging opportunities, including mentoring and peer support mechanisms

- **Learning design**: close interaction with tutors, small group teaching and teamwork; activities that reflect the workplace; short and snappy chunks of content, such as 10-minute-long narrated PowerPoint/pre-recorded Zoom content sessions, placed as the trigger for a VLE quiz

**Recommendation:**
Universities should ensure they have strategies for maintaining high levels of student motivation and engagement as a core feature of the technology-enhanced learning experience.

**Leadership**

Adapting the university offer through technology-enhanced learning and teaching is a strategically important issue that needs to be a central concern at senior leadership level. This requires an understanding of the digital maturity of the institution and, possibly, a change of investment focus. Historically, significant investments have been made by universities into their physical estates. There is now a much greater need to recognise the importance of investing substantially in their digital estates – which encompass hardware, software and connectivity infrastructure, and staff, digital training and course design – to enable learning and teaching capabilities.

“It’s definitely been a transformative time, with irrevocable changes being made to offer enhanced blended learning”

**Sarah Davies, director of the Bristol Institute for Learning and Teaching**

The experience of the University of Bristol (UoB) provides an insight into how a university with momentum and a senior champion approached the emergency online pivot at lockdown. At the start of lockdown UoB was already embarking on an ambitious digital programme with a new PVC for teaching who was instigating a refresh of the curriculum. The university ended term a week early before Easter to enable staff to replan and redesign. Daily digital updates from the PVC, in which she shared her own experiences and exemplified behaviours, gave the message to staff “do your best”, which worked to de-risk innovation. The University introduced a seven-day, one-hour per day synchronous and asynchronous course for tutors on topics such as designing interaction, inclusion, engagement and assessment. This gave staff the
opportunity to experience what it is like to be a student, as well as quickly getting up to speed in key topics. The UoB case is by no means unique in this approach with many other universities following similar routes.

At the University of Greenwich, for example, previous digital strategy-led investments, especially relating to lecture capture, made a great difference during lockdown:

“Although the Coronavirus pandemic was very disruptive, we were very fortunate that, following several years of major investment as recommended in our digital strategy, our digital systems and processes were at a relatively high level of maturity and resilience. Our teaching and learning benefited from the previous comprehensive roll out of collaborative and educational technology, such as lecture capture, Microsoft Teams and learning analytics. Approximately 70% of timetabled lectures were already being captured automatically and because staff were familiar with the system it was straightforward to capture and deliver new classes in online form. This has proved to be hugely beneficial to students and staff and allowed teaching and learning to continue online during lockdown. Looking forward it also means that blended learning will be easier to implement next term.”

Paul Butler, director of information and library services, University of Greenwich

Action needs to be taken by senior leaders to identify a feasible level of digital ambition and develop a digital strategy that sets a clear digital vision across the entire university – and distributes ‘ownership’ of those objectives to all stakeholders, not just those in IT or leadership roles. The strategy will develop the culture, infrastructure and practices that helps grow organisational digital capability and enables individual digital capabilities to flourish. Executive skills training is a vital and integral element. An accompanying investment plan is also crucial.

Leaders should place their technology-enhanced learning strategy at the heart of their institutional strategy, and board governors will also need to be engaged in leading and supporting the process of digital transformation.

**Recommendation:**
University leaders need to develop, invest in and champion their vision and strategy for technology-enhanced learning at their institution.
5. Recommendations

This report outlines learning to date from the sectoral response to the COVID-19 pandemic. Through our research and engagement to date we have identified a number of recommendations for university leaders that we link to our three time horizons – short term (H1), medium term (H2) and long term (H3).

1. Student perceptions of technology-enhanced learning will change and universities might wish to consider recurring pulse surveys of attitudes, expectations and outcomes. (H1/H2/H3)

2. Contrary to popular views of so-called ‘digital natives’, today’s students have widely varying levels of digital proficiency. Universities might find it beneficial to conduct a skills audit of students and build appropriate digital skills training into curricula. (H1)

3. Given the diverse nature of the student body universities should adopt accessible and inclusive approaches to technology-enhanced learning from the outset of learning design. (H1/H2)

4. Technology-enhanced learning can amplify some student physical and mental wellbeing issues and should be carefully considered throughout university projects. (H1)

5. Universities should invest in building staff digital skills and reward and recognition frameworks as part of professional development to increase the quality of technology-enhanced learning. (H1/H2)

6. Universities should be aware of the changing needs of staff in this uncertain and unsettling period of digital transformation. (H1)

7. Learning design is a critical part of online learning and student involvement is essential; universities should ensure they have strong design capabilities and actively involve students in content creation.

8. Universities should adopt Jisc’s five principles for technology-enhanced assessment. (H1/H2)

9. Universities should ensure their strategies for maintaining high levels of student motivation and engagement are a core feature of the technology-enhanced learning experience. (H1)

10. University leaders need to identify, invest in and champion their vision and a strategy for technology-enhanced learning that can adapt to change and uncertainty. (H1/H2)

The next phase of the Learning and teaching reimagined initiative will explore long-term strategic ambitions of university leaders, to inform sustainable digital transformation, in readiness for 2021/22. We will explore the impact of this anticipated change for students, staff, culture, investment, access to resources and technologies. This to inform our vision, strategic framework and roadmap for the UK as a leader in technology-enhanced learning.
Advisory board members

Professor David Maguire, interim principal and vice chancellor, University of Dundee (chair)
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Dr Paul Feldman, CEO, Jisc
Chris Hale, director of policy, Universities UK
Alison Johns, CEO, Advance HE
Nic Newman, Emerge Education
Sector organisation representation

Advance HE  
AHUA, Association of Heads of University Administration  
ALT, Association of Learning Technology  
AMOSSHE, The Student Services Organisation  
AUDE, Association of University Directors of Estates  
Emerge Education  
Guild HE  
Independent Higher Education  
Jisc  
QAA, Quality Assurance Agency  
RLUK, Research Libraries UK  
UCEA, Universities Colleges and Employers Association  
SCONUL, Society of College, National and University Libraries  
UCAS, Universities and Colleges Admissions Service  
Ucisa  
UUK, Universities UK

Webinars

Changing student needs webinar, Wednesday 17 June 2020  
Changing staff needs webinar, Wednesday 1 July 2020  
Best emerging practice webinar, Wednesday 15 July 2020

Webinars brought representation from 86 UK HEIs, 9 UK FECs and 26 other organisations. 252 delegates attended in total. 136 delegates classified their responsibility as being education or learning, 27 as being leadership and management. 60 delegates classified their role as leadership, 48 as senior managers, 27 as managers and 46 as academic staff.
Thank you to all the UK universities that have contributed to this work:

Aberystwyth University  
AECC University College  
Arts University Bournemouth  
Association for European Life Science Universities  
Bath Spa University  
Birkbeck College  
Birmingham City University  
Bishop Grosseteste University  
Brunel University London  
Buckinghamshire New University  
Canterbury Christ Church University  
City, University of London  
Coventry University  
Cranfield University  
De Montfort University  
Edge Hill University  
Falmouth University  
Harper Adams University  
Heriot-Watt University  
Imperial College of Science, Technology and Medicine  
King's College London  
Kingston University  
Leeds Beckett University  
Liverpool Hope University  
London School of Hygiene and Tropical Medicine  
London South Bank University  
Loughborough University  
Middlesex University  
Norwich University of the Arts  
Nottingham Trent University  
Open University  
Oxford Brookes University  
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Royal College of Music  
Sheffield Hallam University  
St George's Hospital Medical School  
St Mary's University, Twickenham  
Staffordshire University  
Teesside University  
The Open University  
The University of Manchester  
The University of Reading  
The University of Sheffield  
The University of Southampton  
University College London  
University College of Estate Management  
University of Aberdeen  
University of Aston  
University of Bath  
University of Birmingham  
University of Bradford  
University of Brighton  
University of Bristol  
University of Cambridge  
University of Central Lancashire  
University of Derby  
University of Dundee  
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University of East Anglia  
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University of Essex  
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University of Glasgow  
University of Gloucestershire  
University of Keele  
University of Kent  
University of Leeds  
University of Lincoln  
University of Liverpool  
University of London  
University of Newcastle upon Tyne  
University of Northampton  
University of Oxford  
University of Plymouth  
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University of South Wales  
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University of Surrey  
University of the West of England, Bristol  
University of the West of Scotland  
University of Wales Trinity St David  
University of Warwick  
University of Westminster  
University of Winchester  
University of Worcester  
University of York