Learning and teaching reimagined

A new dawn for higher education?

November 2020

With thanks to:

All those who contributed to this research, from students, staff and leaders to sector organisations and our advisory board.

Advisory board members

Professor David Maguire, interim principal and vice-chancellor, University of Dundee
Chair, *learning and teaching reimagined*
Professor Liz Barnes CBE, vice-chancellor, Staffordshire University
Professor Tim Blackman, vice-chancellor, The Open University
Professor Nick Braisby, vice-chancellor, Buckinghamshire New University

Professor Alec Cameron, vice-chancellor, Aston University
Professor Anne Carlisle OBE, vice-chancellor and CEO, Falmouth University
Professor Sir Chris Husbands, vice-chancellor, Sheffield Hallam University
Professor Tansy Jessop, pro-vice-chancellor, University of Bristol
Heidi Fraser-Krauss, executive director of corporate services, The University of Sheffield

Professor Julie Lydon, vice-chancellor, University of South Wales
Professor Peter Mathieson, principal, The University of Edinburgh
Professor Nick Petford, vice-chancellor, University of Northampton
Professor Anne Trefethen, pro-vice-chancellor, University of Oxford
Ashley Wheaton, principal, University College of Estate Management

Advisory board observers

Dr Paul Feldman, CEO, Jisc
Chris Hale, director of policy, Universities UK
Alison Johns, CEO, Advance HE
Nic Newman, Emerge Education

Authors

Professor David Maguire, interim principal and vice-chancellor, University of Dundee
Chair, *learning and teaching reimagined*
Louisa Dale, director of insight, Jisc
Michelle Pauli, Michelle Pauli Editorial

Jisc

Universities UK

emerge education

AdvanceHE

Contents

Chair's opening remarks **4**

Recommendations **8**

Part one: Understanding 2020 **9**
1.1 Learning and teaching is changing 9
1.2 The changing aspirations of students, lecturers and leaders 11

Part two: Preparing for 2021 **20**
2.1 The future is blended 21
2.2 Seven sector challenges 22
2.3 Developing a strategic framework 28

Part three: Being inspired by 2030 **32**
3.1 Vision 2030 32
3.2 Guiding principles 34
3.3 Learning and teaching reimagined 36

Appendices **37**
Appendix one: The *Learning and teaching reimagined* platform 37
Appendix two: Methodology 38

Chair's opening remarks

Education is one of the last major sectors yet to be radically transformed by the digital revolution, but change is coming. The digital acceleration of higher education as a result of the coronavirus pandemic is the first harbinger of the revolution. Some already say there will be no going back to pre-COVID learning and teaching models but few are yet signposting the fundamental changes we see ahead.
We have glimpsed these changes in our research for this *learning and teaching reimagined* project and they are captivating, energising and, for some, not a little scary.

As the sun rises on this new dawn for higher education it is illuminating new digital models of learning and teaching, while at the same time casting a shadow of darkness across some traditional, increasingly old fashioned, ways of working.

The real winners from these profound changes will be learners. The greater options to study flexibly anywhere, anytime and in any mode will open up higher education to many potential students for whom it may currently be out of reach. As a result, we will also see an increase in sector size and scope, leading to an expansion of higher education that is both academically desirable and financially sustainable, with no loss of quality or academic rigour. The result is a digital dividend that will benefit intellectual, cultural and professional development, for both individuals and society at large.

Those universities that fail to adapt and reimagine themselves as digital organisations may see their appeal diminish and their business come under pressure as students opt for models that suit their lifestyle and preferred way of learning. The signs are that universities are modernising and working hard to make the transition. Those that are bold and rethink their pedagogy, rather than replicate their traditional teaching patterns in the virtual world, can travel faster and, perhaps, further.

Advancing to this new digital future is not a given and not all the technologies and systems yet exist to bring it to complete reality. But the vision is forming and we have more than enough ingenuity and drive in UK HE to design, develop and deliver it. Most of the fundamental building blocks already exist and there are sufficient excellent examples of good practice to see that success is possible if we commit to it. And, of course, some higher education providers, such as the Open University, are already fully online and recognised as world leaders.

There appears to be no shortage of appetite in universities to undertake this journey. However, the experiences of the past several months have highlighted the challenges that lie ahead: changing university cultures, upskilling staff (including senior leaders), upgrading technology infrastructures, redesigning programmes of study and dealing with equity issues arising from the new ways of learning.

In *learning and teaching reimagined* we have seen immense creativity as staff and students have found new ways to learn and progress: from the University of Brighton medical students, learning human dissection via live stream, to the University of London taking 40,000 students sitting 500 exams in 160 countries from in-person, pen-and-paper assessment to remote digital testing in one move.

Learning and teaching reimagined is a cross-sector initiative that has taken a strategic and truly collaborative approach. Jisc, with partners Universities UK, Advance HE and Emerge Education, has worked closely with universities and a broad range of UK sector agencies, representative bodies and professional associations to ensure we are learning in very practical ways from recent experiences and responding directly to the changing needs of students and staff. While we are indebted to our excellent advisory board and the many other contributors to *learning and teaching reimagined*, this report does not reflect the formal position of any single organisation but is a synthesis of findings and views about how learning and teaching are being reimagined.

We begin by seeking to understand from our collective experience in 2020 how learning and teaching changed, and the hopes and expectations of students, staff and leaders. Part two looks at the blended learning future in 2021 and seven key challenges the sector must address. Part three sets out our bold vision for learning and teaching in 2030 and the key principles for long-term transformation. Finally, we lay out the steps to take if everyone is to benefit deeply from the digital transformation of learning and teaching.

The restrictions on physical contact placed on societies by the coronavirus pandemic have forced universities to confront the inevitability of digital transformation. However, we know that this is just the beginning and we look forward to seeing shining examples of how universities reimagine the exciting digital learning and teaching future.

David Maguire
Interim principal and vice-chancellor, University of Dundee
Chair, *learning and teaching reimagined*

Executive summary

This report, *Learning and teaching reimagined: a new dawn*, is the result of a five-month higher education initiative to understand the response to COVID-19 and explore the future of digital learning and teaching. It involved high levels of engagement with more than 1,000 sector leaders, staff and students through webinars, roundtables, consultations, focus groups, surveys, interviews and case studies.

In this report we explore the experience of 2020 and changing aspirations of the nature and shape of learning and teaching for the next academic year, 2021/2022, and 2030.

Understanding 2020

The findings clearly show an expansion of online learning and that **blended learning across different modes** – in-person, online, on campus, at home and at work – is the preferred model for university students, staff and leaders. We have found that:

> Students prefer blended learning that incorporates extensive online components alongside in-person learning because it's more convenient, saves time and makes it easier to access course materials

> Lecturers see opportunities to improve educational outcomes by adopting a wider range of learning activities, allowing greater flexibility of study times, space for reflection and a move to different forms of assessment

> Leaders believe blended learning enables anytime/anywhere learning, breaks down geographic barriers to delivery and extends institutional reach into new markets

Preparing for 2021

In preparing for the next academic year there is common agreement that the main barriers to greater online learning and teaching relate to culture and not technology. Our research identified **seven sector challenges** to full digital transformation of learning and teaching.

1. **Embed digital at the heart of university culture**
   Leadership and vision are essential for transformation as digital becomes a central feature of learning and teaching.

2. **Invest in the short term but with a long-term strategic view**
   Most university learning and teaching infrastructures need significant upgrades to support the expansion of online learning and teaching. As this is a rapidly maturing field, careful long-term planning is needed to ensure investment is strategic.

3. **Explore new economic models for high-quality blended learning at scale**
   Scaling up high-quality blended learning and teaching takes considerable time and investment. If the shift is to be sustainable, affordable and widespread, work is needed on the economics that will allow transformation.

4. **Embrace blended learning in curriculum redesign**
   Focusing on learning design, with student involvement, will ensure that it achieves high-quality outcomes and makes a difference by shaping fully accessible and inclusive learning.

5. **Expand the digital skills and confidence of students and staff**
   Significant and rapid progress has been made in improving the digital capabilities of students, staff and leaders but there is much more to be done, and increasing all-round digital confidence remains a priority.

6. **Communicate the benefits of blended learning**
   We have evidenced a significant increase in the acceptance of digital learning and teaching but further attention is required to understand and meet shifting perceptions, both within and beyond the sector.

7. **Strengthen the response to digital poverty**
   The digital divide was brought into sharp relief in 2020 with students' differing levels of digital access. This remains a priority concern for all groups and additional resources are needed to level up opportunities.

Being inspired by 2030

The experience of 2020 has demonstrated the potential for a complete digital transformation of higher education learning and teaching. Our vision of 2030 is designed to inspire and promote further debate about how universities might change.

> **In 2030 UK higher education learning and teaching is regarded as world class because it is attractive to all students, seamlessly spans the physical and virtual worlds and is of the highest academic quality.**
>
> Students of all ages and in any location can participate by learning flexibly around work and family commitments and across time zones. The highly engaging and interactive learning experiences on offer set UK higher education apart. UK universities have grown their student communities, expanding smoothly beyond their physical bases into the virtual world.
>
> Students move fluidly across physical, digital and social experiences. The integration of mixed reality technologies strengthens the strong sense of university identity and community, no matter how students choose to participate and learn.
>
> Students benefit from a personalised learning experience. The widespread adoption of artificial intelligence (AI) provides a learning experience that effortlessly melds the preferences and needs of the individual learner.
>
> Student success is at an all-time high. Digitally fluent leaders foster a culture of learning and teaching excellence, raise academic standards through innovations in pedagogy and bring learning to life in the most effective and compelling way.

To meet these challenges and embark on this vision we propose a series of **institutional and sectoral recommendations**. We also present a **strategic framework** that can help universities reimagine their learning and teaching. This will require direction and sponsorship from university leaders and governors but, as we have seen in the spirit of the COVID-19 response, change is best achieved through an inclusive, co-creative approach that closely involves both staff and students.

Recommendations

These recommendations respond to the seven sector challenges we identified through our research. They describe the interventions required to progress digital transformation in learning and teaching, in preparation for 2021/2022 and beyond.

Recommendations

Based on our research we make the following recommendations for universities, sector agencies and government.

1. Universities to use their strategic and structural planning processes to effect the digital transformation of learning and teaching, ensuring that sponsorship is provided by governing bodies and executive teams.

2. Universities to review their strategic investment in digital learning and teaching.

3. Universities to make investment plans to mitigate the heightened cyber security risks that arise from greater dependence on digital technologies.

4. Universities to think radically about the scale and scope of their learning and teaching activities, prioritising blended learning approaches wherever possible.

5. Universities to accelerate the adoption of blended learning, with close involvement of students in all aspects from design to delivery.

6. Universities to ensure inclusivity and accessibility are integral considerations in curriculum redesign.

7. Universities to ensure their professional development plans include digital training, peer support mechanisms and reward and recognition incentives to encourage upskilling.

8. Universities and sector organisations to establish research to remain in step with the changing digital preferences and expectations of prospective higher education students.

9. Universities, government and funders to provide additional funding or means to reduce digital poverty as a barrier to students accessing higher education.

Part one: Understanding 2020

Key messages

> COVID-19 has fundamentally changed how universities approach learning and teaching

> Students, lecturers and leaders see benefits in greater online and blended learning approaches

> This may be considered an experimentation phase as we learn about high-quality blended learning at scale

1.1 Learning and teaching is changing

COVID-19 caused a digital shift in learning and teaching greater than anything that preceded it. Before March 2020, the overwhelming majority of university teaching was delivered in person, outside those few universities that specialise in online delivery.

Our research indicates that, before March 2020, very little university teaching was delivered online. In 2020/2021 almost all lectures are expected to be delivered online, with a blend of online and in-person delivery for seminars and tutorials and priority given to in-person learning for workshops, laboratory practical work and studio work. Leaders expect the balance of face to face and online delivery to even out from 2021/2022 through to 2030.[1]

When our country went into lockdown in March 2020, the general conditions for digital acceleration in universities were as favourable as they had ever been: the necessary technology was at a new level of maturity, significant experience had been amassed from previous successes and failures, and staff and students were more digitally aware than ever before.

UK universities responded in mostly similar ways. Courses were redesigned to deal with the time lost to lockdown and staff were rapidly upskilled to teach online. A massive amount of new digital content was created by digitising existing teaching materials but much also had to be created from scratch. Many new alternative assessment approaches were rapidly developed, including open-book exams, quizzes and digital portfolios. At the same time, a lot of final summative assessments were cancelled, increasing reliance on coursework. All the changes had to pass through the quality assurance processes of universities and, in some cases, professional, statutory and regulatory bodies (PSRBs), to ensure that standards were

1 Jisc (2020) Learning and teaching reimagined: Leadership survey data. Available at: **jisc.ac.uk/reports/learning-and-teaching-reimagined-survey-synthesis**

maintained. Existing infrastructure had to be scaled up and made accessible from remote locations. All of this meant that emergency contingency funds were required for unbudgeted requests for hardware, software, digital content and training. We estimate that universities will typically have each spent between £1m and £3m extra on digital learning and teaching during the pandemic in 2020.

The spring 2020 emergency COVID-19 response was considered in depth in our earlier report, *Learning and teaching reimagined: change and challenge for students, staff and leaders*, which showed that:

> Many universities were starting from a low digital base with a long way to go to secure high-quality provision capable of meeting rising student expectations

> There is a need for universities to be more adaptable, open and responsive as they work towards creating a financially sustainable higher education system

> Digital poverty is a critical issue for universities to understand and address

> The level of digital maturity in higher education learning and teaching is generally low but growing quickly

> There are extensive pockets of expertise and many examples of experimentation in online learning but, with a few notable university exceptions, it has not yet reached mainstream deployment levels

> There is significant willingness to support national efforts to develop capabilities and share best practice in the quickly emerging online and blended models of learning and teaching

What do we mean by blended learning?

We are using the term 'blended learning' to describe learning across two different modes – in person and online (which can be either on campus, or off campus at home, work, a public library, etc).

It is important to note a few things about our usage: we do not equate online with 'distance', although it frequently occurs off campus; in-person learning is increasingly likely to involve digital approaches (for example, during in-person teaching it is common for a lecturer to use a digital presentation, and an online learning class may be moderated by a physically present tutor); and, given the diversity of the sector, blended learning models vary quite widely across universities.

We recognise that these terms are contested and applaud the work of the Quality Assurance Agency (QAA) in *Building a Taxonomy for Digital Learning* (June 2020).[2]

2 QAA (2020) *Building a Taxonomy for Digital Learning*. Available at: **qaa.ac.uk/docs/qaa/guidance/building-a-taxonomy-for-digital-learning.pdf**

> "What we will see is an acceleration of the greater integration and comfort with online learning and pedagogy and technologies, such that we will get to a place where we'll stop making this tired distinction between online and traditional. We'll just have fluidity. Students will learn in whatever modality students want, in any given day or an hour."
>
> **Paul LeBlanc, president of Southern New Hampshire University (SNHU)**

1.2 The changing aspirations of students, lecturers and leaders

Learning and teaching reimagined conducted a programme of research to gain a deeper understanding of the experiences and expectations of those involved with learning and teaching. Our research explored sector actors' perceptions and needs, to inform future university learning and teaching planning and delivery activities.

Qualitative research, in the form of webinars, virtual roundtables, focus groups and interviews, provided insights from more than 400 students, staff, university leaders and sector organisations.

We also conducted a series of surveys, with 439 students, 323 lecturers and 40 leaders, that reinforced our learning from the consultative sessions.

Our research offers a unique view of how a diverse range of contributors – with varying student demographics, institutional typologies, subject disciplines and experiences of online learning – are experiencing the digital shift, and what their hopes and expectations are for the future.

1.2.1 The students' view

Five key research takeaways from students

1. Students like online learning mainly because it's **more convenient, saves time, is more flexible and helps them to review content better**.

2. **Enjoyment of online learning increases with experience of it** – those for whom it's always been a large part of learning are much more likely to enjoy it than those with limited experience.

3. **Online learning can feel isolating and lonely** when it lacks in-person social or human interactions.

4. **Students need access to the right kit** – hardware, software, network connection and printer – and a conducive learning space.

5. **All students want to be more involved** in how their course is delivered and the technology that's used for it.

The *learning and teaching reimagined* student survey and focus groups revealed three important things about student attitudes: firstly, students' online learning experience is fundamentally entwined with their wider learner experience, and that online learning is more appealing when it's part of an interconnecting set of experiences combining learning, support, sociability, motivation and emotions; secondly, they view the types of technology or learning platforms as less important than how they are used in practice; and finally, confidence and success can be undermined by lack of personal digital skills, limited access to technology and poor communication from their lecturers.

Students' ideal learning mode is a blended approach using a mixture of pre-recorded, online and live, in-person classes. The flexibility of pre-recorded material is seen as helpful for many students as a way to watch again or watch at a time that suits them. Students say that lectures, whether live or recorded, need to be engaging. In their view online tutorials and seminars need to be in small groups, and lecturers should ensure that they are supportive and encourage students to meet and chat with others. This is especially important for first years who might struggle to meet their peers when participating in online learning and teaching. Larger seminar groups can mean that new students are reluctant to ask questions and engage in discussion for reasons of confidence. Most would like at least some tutorials to be in person, a trend we have observed at some universities currently.

> "What some of my professors did was this Microsoft Teams thing with me directly, where it was basically FaceTime, and I was able to go through any questions from past exam papers that I had issues with, and any questions that I had to clear up. And that was really useful, because it took the pressure off."
>
> **Second year student**

From cows to wild swimming

One first year student in our focus group had been attending online lectures at her university for two weeks and had still not seen any one of her lecturers' faces. That's not the case for students of marine and natural history photography at Falmouth University, who benefited from their senior lecturer Huw Lewis-Jones's entertaining **introductory video**, welcoming them to the course and to the landscape of Cornwall, and setting out his motto for the term. It demonstrates the kind of engaging, high-quality digital resources students will come to expect.

Blended learning in action

Brighton medical students first to be taught human dissection via live stream
Brighton and Sussex Medical School (BSMS) became the first medical school in the UK to extend its provision of anatomy and surgical teaching/training by using secure, livestreamed footage of cadaveric donors being dissected.

Staff at BSMS, a joint venture between the University of Sussex and the University of Brighton, have implemented a blended medical curriculum to ensure that students still receive in-person teaching in key clinical areas while at the same time benefiting from the latest digital innovations to support their learning.

One student who watched the livestream said: "*It was an incredible experience to see a human brain in such detail and the cranial cavity*."

In September, a week-long course was arranged by Dr Jag Dhanda, consultant maxillofacial/head and neck reconstructive surgeon at Queen Victoria Hospital NHS Foundation Trust, who used the livestream to demonstrate surgical procedures on cadavers with virtual reality (VR), or 360° cameras.

Multiple camera-angle perspectives in the virtual reality view were livestreamed to 350 surgeons from 26 countries around the world. These surgeons were able to view the surgical techniques on cadavers through virtual reality headsets that allowed them to choose the camera-angle perspective they wanted by moving their heads.

Dr Dhanda said: "*We have all had to adapt in how we deliver teaching and training for doctors in the COVID-19 era. Using a readily available technology like VR provides a much more immersive experience for trainees in which they literally feel they are 'in the room' with the tutor. Using this in the anatomy laboratory at BSMS with cadavers is a unique approach that has enabled us to provide a worldwide first in demonstrating surgical techniques in this manner.*"[3]

3 University of Brighton (2020) BSMS becomes first UK medical school to livestream human dissection. Available at: **brighton.ac.uk/news/2020/bsms-becomes-first-uk-medical-school-to-livestream-human-dissection** and **brightonandhovenews.org/2020/10/02/brighton-medical-students-first-to-be-taught-human-dissection-via-livestream**

1.2.2 The lecturers' view

> "We now have the opportunity to try things out that we've been wanting to try for years."
>
> **Lecturer in creative arts and design, specialist university**

Five key research takeaways from lecturers

1. **The level of online delivery is growing rapidly and blended learning is becoming the standard model** for learning and teaching in UK higher education.

2. Lecturers want and need to **rethink learning and teaching practices** to take advantage of advances in online learning approaches, especially as lecturers' confidence and awareness grow.

3. Given the uncertainty created by COVID-19 and the speed of change, not surprisingly, lecturers would like increased **clarity about their university's plans for delivering learning and teaching**.

4. Lecturers are **under significant pressure** to adapt and deliver online and blended learning and are often time poor.

5. But they are growing **steadily more confident** about delivering digitally.

> "We've talked forever about activity-based, problem-based learning. The COVID-19 crisis has accelerated that. That's a good thing. As is the reduction in exams and the death of the exam hall. The move to allowing for more and more online learning materials, whether in the library or in the lab, is also a welcome development."
>
> **Guy Daly, deputy vice-chancellor (education and students), Coventry University**

There is a real sense from teaching staff that this is an opportunity to rethink the way learning and teaching is delivered. This is despite many lecturers feeling time poor, anxious about replacing in-person teaching with online approaches and threatened by the impact COVID-19 is having on UK higher education. Given the social distancing restrictions imposed during the period of the pandemic, most classrooms/lecture halls can only accommodate a fraction of their original number of students. In addition to developing new online materials, some lecturers are also having to teach in-person classes multiple times to smaller groups.

The vast majority of lecturers who responded to our survey see a significant increase in the level of online, and expect blended learning to become the standard model for delivering learning and teaching, with the changes brought about during the pandemic expected to have a long tail of impact for teaching practices. Lecturers recognise that a balance of in-person teaching, supported by online classes, activities and digital content, will facilitate anytime/anyplace learning and that this will have positive impacts for both staff and students. Over time we expect that the blend might change with greater emphasis on the online component.

The most significant areas where lecturers have concerns around the rapid move to online delivery during the emergency period include: ensuring equity of access to online learning and teaching; building up relationships and rapport with their students online; maintaining student engagement; and transferring experiential learning online, such as enabling a string quartet to rehearse online or ensuring a nurse is confident in treating a patient. They also need time and space to adjust and develop their own practice.

> "My school within the university set up a peer-led online seminar series where we shared experiences and ideas. This was brilliant, and I learnt a lot."
>
> **Business and administrative studies lecturer, research-intensive university**

Lecturers would like their university leaders to:

- **Provide clear and consistent guidance and decision-making** to help them respond more effectively to the changing pandemic situation
- **Communicate the benefits of technology-enhanced learning effectively to students** to help with uptake and minimise student anxiety
- In such a period of rapid change there is a request to **keep things simple and get the right balance of tools and systems** that can help not hinder learning and teaching
- **Provide reliable equipment, network connectivity and remote access to systems**, both on campus and when working from home
- **Provide appropriate support** to help with the rapid uptake of this new departure from their familiar world of established teaching

Blended learning in action

Studying in the digital space

The University of Derby has developed an organisational-wide framework for learning and teaching, in collaboration with academics and students. This year, with limited campus space, the university is offering a blend of off-campus digital learning and on-campus experiences, including some in-person teaching. A robust staff development programme has been put in place for all academic colleagues to enhance their knowledge of digital learning principles and approaches. This enables staff to get a greater sense of what it will be like for students when studying in the digital space.

"*It is ambitious to take over 1,000 academic staff through a newly developed bespoke facilitated course, but it's important that staff are well prepared, and ultimately that students get the best experience*," says John Hill, head of library and digital learning.

Academic staff feedback has been very positive, especially around the need to understand digital learning from the students' perspective, with staff commenting:

"*It is an amazing opportunity to stop and think about your teaching and how to improve it in a virtual environment" and "It has opened my eyes to more possibilities and requirements around blended learning*."

Creating practical exercises online

From monitoring shopping centres remotely to giving evidence in virtual courtroom scenes, apprentices studying to be police officers at the University of Northampton shifted seamlessly to online for all their in-person training exercises in spring 2020.

Previously, students finished their training by 'policing' a shopping centre, using their newly acquired powers and procedures, and working under the supervision of an experienced instructor. After moving online, incidents of drink driving and allegations of robbery, shoplifting and suspicious activity in a shopping centre were recreated on video, via the virtual learning environment (VLE). Students' answers were discussed in a group webinar session where, for the first time, the whole class could learn from the experience. Webinar software was used successfully to replicate a mock courtroom scenario in which police officer apprentices presented statements from an incident, in front of two criminal barristers representing the defence and the prosecution. Students 'attended' court online and faced cross-examination by the two barristers on screen who had listened to their testimony. The process was equally challenging for the students and all reported that it had been beneficial.

1.2.3 The leaders' view

> "We need to think creatively and engage in scenario planning so that we can seize opportunities for the future to meet the changed circumstances when they arrive. It is scary and also exciting – but hard to think about when you are flat out!"
>
> **Pro vice-chancellor or equivalent, research, learning and teaching university**

Five key research takeaways from leaders

1. The use of online learning is gathering pace from a relatively low base, and for most universities the **future is blended learning**.

2. **The digital shift will not be rolled back** and leaders want to build on successes in creativity and innovation to rethink the longer-term delivery of learning and teaching.

3. **The main benefits of online learning** are that it enables multi-mode, anytime/anywhere/any-pace learning, breaks down the geographic barriers to delivery and potentially extends institutional reach into new markets.

4. There is some way to go to provide the rich and rewarding **social experience** students want alongside their academic experience.

5. The most important barriers to overcome to enable the further development of blended learning are an **increase in staff confidence**, followed by investment in staff development, fostering collaboration with colleagues, involving students in curriculum development and sharing expertise.

Despite the uncertainty and challenges arising from the pandemic, leaders are keen to build on the many successes achieved already. They have been impressed by the way in which staff have responded, citing the creativity and innovation that has come out of the crisis as a huge positive. Leaders see an opportunity for the sector to rethink learning and teaching, and are keen to ensure it does not revert back to the way things were prior to lockdown. Over the next five years, leaders expect that lecturers' roles will focus more on learning facilitation, rather than knowledge transmission, and training will be an ongoing requirement.

> "Rather than being deliverers of teaching in discrete packets of time (eg 50-mins lectures in a lecture theatre), lecturers will be seen more as learning guides who orchestrate learning, curate (as well as generate) appropriate learning resources from a wide variety of sources, and provide the narrative that put these into place within a structured learning journey, pitched appropriately for the learning."
>
> **Pro vice-chancellor or equivalent, specialist university**

Developing a university culture that supports blended learning presents numerous challenges to leaders. Creating a sense of belonging and community to overcome any feelings of isolation and disconnectedness for staff and students is critical. We learnt how the emergency response to the pandemic triggered some new discussion and decision-making approaches, with collaborative software increasing opportunities for engagement with a wider range of colleagues.

> "We can connect with people who wouldn't otherwise be in our networks … [it's a] chance to think differently and work across functions."
>
> **Participant, cultural change roundtable**

Building belonging: Wo/men's Network, Ulster University

"*People just opened up, talked and shared and connected and there was a palpable sense of relief.*"

Ulster University's Wo/men's Network provides a supportive and collegiate space to build relationships and connections across the university, in person when possible and via Zoom when not. It moved quickly to hold its first wellbeing check-in in March, fostering inclusivity and building trust by taking a rough and ready but authentic approach. "*It wasn't perfect or polished. So that meant that people didn't have to be perfect or polished either*," says Deborah Sloan, programme lead. The first series of events encouraged leaders to talk about their own life in lockdown and what they were struggling with; the next series had a future focus on life and work post-lockdown. "*It was for everyone, regardless of job role or level of seniority. Everyone was in this together and we needed to listen to and value the different experiences that people were having. It gave a sense of belonging.*"

1.2.4 The international view

Internationally, the emerging picture in response to the pandemic appears to be broadly similar to the UK. We identified international universities that are advanced in the use of digital learning and teaching, and the interviews we conducted with university leaders in Europe, America and Australia revealed familiar experiences.

Central among these experiences were: a rapid switch to online learning and teaching in March with intense staff upskilling followed by some months spent redesigning courses for the next semester; an emphasis on the long hours worked and huge efforts made by staff; and an awareness of the fatigue everyone is experiencing as the pandemic continues.

Generally, students were understood to have benefited in many ways from the move to online, even if it was not 'perfect'. Indeed, during the pandemic in Finland, all 14 universities improved their outcomes in terms of European Credit Transfer (ECTS) awards, with the University of Helsinki up 7% and University of Tampere up 18.3%.[4]

The widespread move to video for information transmission was appreciated because of its pedagogical benefits and convenience. However, those we interviewed felt there had been some inevitable negative impact of the move to fully online learning for students, in terms of personal contact and learning relationships, with these abrupt changes further compounded by the physical and social restrictions of COVID-19.

> "Understanding that we are social animals is crucial for what we do with young people. A majority of students and staff just like to be around one another. Many of the teachers complained that they missed their students."
>
> **Rob F Mudde, vice rector magnificus/vice president education, Delft University of Technology, the Netherlands**

All the international university leaders we spoke with believed that COVID-19 has accelerated a move to blended learning. They said it was a more preferable future when compared to a return to fully in-person, on-campus learning and teaching, and that it reflected a heightened student demand for greater flexibility.

> "A blend of face-to-face and online gives us so much more flexibility to deliver programmes, courses and classes in ways that suit people. To me, it's a no-brainer. It is momentous because if you'd asked me a year ago, there would be no consensus across the sector that blended learning is the way to go. Now, blended is a step back towards normal for most people. It's much easier to get them to go to blended when it's a step back towards normal than when it was a step away from normal a year ago."
>
> **Margaret Jollands, associate dean, student experience, RMIT, Australia**

4 Jaakko Kurhila, chief digital officer, University of Helsinki, Finland (2020). Interviewed by Dale, L and Pauli, M on 8 October 2020.

America's Southern New Hampshire University (SNHU), which is the largest non-profit provider of online higher education in the US and also runs on-campus degree programmes, has already seen a shift to a younger demographic, with 30,000 students between the ages of 17 and 22 signed up to its online programme.

> "That's traditionally the age that we associate with campuses and is an interesting development. We're seeing this first generation for whom online is where they live their life. It's not a big leap to say, 'I'm going to do online instead of campus. I do everything else online'."
>
> **Paul LeBlanc, president of Southern New Hampshire University (SHNU)**

Culture change was a common theme, with particular emphasis in the Netherlands on the need to enhance the relative prestige awarded to learning and teaching. While a teaching qualification is already required to achieve a permanent position at a Dutch university, the University of Utrecht offers educational innovation grants, in total amounting 2 million euros per year, for the support of educational talent and innovation in teaching, that allows lecturers to "*invest the time to really innovate your education*" – Manon Kluijtmans, vice-rector for teaching and learning, Utrecht University.

According to Rob Mudde, "*For most universities the teachers and the researchers are the same people. And the name of the game of a researcher is trial and error. Fail and try again. But as soon as these researchers are teachers, you see that they stick to what worked yesterday. We don't allow ourselves the same room for trial and error and universities only very recently acknowledged that reward and recognition for teaching should be at the same level as for research*."

Part two: Preparing for 2021

Key messages

> Learning and teaching in 2021/2022 will be blended, in a variety of forms

> Seven sector challenges must be tackled if the benefits of blended learning are to be realised for students, staff and universities

> Collegiate and collaborative working to address these challenges is the key to success

> Individual universities will need to develop their own specific longer-term strategies for digital transformation

There is no doubt that learning and teaching in 2021/2022 will continue to operate in a rapidly changing context. Beyond this, the impacts of COVID-19 on society and the economy are still unknown, but it is clear universities will need to take care to recover and to become even more resilient and adaptable to change. There is also an interplay between the effects of COVID-19 and other ongoing, underlying issues such as financial sustainability, uncertainty about the impact of Brexit, demographic trends and far-reaching changes to the world of work.

For example, demographic shifts, highlighted in the Hepi paper *Demand for higher education to 2035*,[5] suggest that an extra 40,000 full-time higher education places will be needed in England by 2035, given the rise in the 18-year-old population over the next fifteen years. If participation increases in the next fifteen years at the same rate as the average of the last ten years, then the 40,000 becomes 358,000 extra full-time places.

Meanwhile, as the RSA sets out in *Work and automation in the time of COVID-19*, the 'tsunami of job losses' caused by COVID-19 is going to interact with an accelerated pace of technological change to reshape the labour market fundamentally.[6] Higher education will play a leading role in developing people's skills and in reskilling the workforce. UUK's *A vision for universities*[7], finds that 82% of prospective students in England who are either unemployed, at risk of unemployment or looking to learn new skills would be keen to study individual modules of a university degree. 'Earning while learning' and maintaining a good work-life balance are seen as the most important benefits of modular learning.

---

5 Hewitt, R (2020) *Demand for Higher Education to 2035*. London: Hepi. Available at: **hepi.ac.uk/2020/10/22/demand-for-higher-education-to-2035**

6 Wallace-Stephens, F and Morgante, E (2020) *Who is at risk? Work and automation in the time of COVID-19*. London: RSA. Available at: **thersa.org/reports/work-automation-covid**

7 UUK (2020) *Recovery, Skills, Knowledge and Opportunity: A vision for universities*. Available at: **universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2020/uuk-he-vision.pdf**

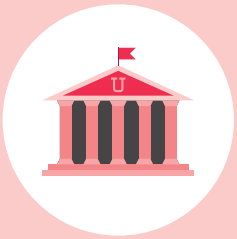
Despite the backdrop of uncertainty, universities are committed to creating the flexibility needed to meet the challenges of the post-COVID world. As UUK asserts[8], many universities are ready to scale up alternatives to the traditional three-year degree and give more people opportunities to study elements of a course in a 'bitesize' learning model supported by flexible credit accumulation. If this is to be successful, flexible learning and teaching, enabled by digital approaches, must be at the core.

2.1 The future is blended

> "I expect the current situation to lead to a move to more online delivery even when (if?) the current pandemic is resolved. We can take the benefits of our learning from the situation to develop different, more flexible ways of delivering teaching and learning."
>
> **Pro vice-chancellor, research and teaching university**

Learning and teaching reimagined ran nine virtual consultation sessions, hosted by a range of sector organisations, seeking to secure the widest range of university perspectives. We sought to understand what learning and teaching in higher education might look like in 2021.

The features of four possible scenarios were explored:



Scenario one

A very familiar, in-person learning experience on campus for students who have already adapted to a socially distanced world.

Scenario two

Technology-enhanced learning supplements a 'traditional', lecture-led, synchronous and in-person learning and teaching experience. It feels familiar to students, while offering a broader range of learning opportunities.

Scenario three

A fully redesigned learning and teaching environment. Students experience flexibility and convenience of learning, increasingly able to enjoy adaptive and self-directed learning, with more interactive learning opportunities.

Scenario four

Students embrace a fully online experience that offers even greater flexibility and an increasingly personalised learning experience.

Exploring the features of each scenario with consultation participants helped us understand better what changes would be challenging and impactful in 2021.

8 ibid

In concluding each virtual session, we asked which scenario was most likely for learning and teaching in 2021. Scenario two was deemed to be most likely, because it remains close to a 'traditional' model of higher education and therefore involves less significant change. Interestingly, the majority of participants reflected that Scenario three, offering students a personalised experience of learning, was the most desirable in the longer term.

Contributors reflecting on the digital shift made in 2020 expressed concern about the scale of changes ahead but the vast majority were clear that there were important benefits to be gained from the introduction of blended learning.

Improvements in the pedagogical approach and access to content were viewed as the main drivers for change but many expressed concern about the need to increase investment in technology infrastructure to support the adoption of blended learning.

Unsurprisingly, strong leadership and effective planning were perceived to be critical to success in sustaining any changes arising in the future.

2.2 Seven sector challenges

Throughout our research we have observed that the digital shift of 2020 has brought with it seven key sector challenges. It is crucial that these are addressed if students are to benefit from the advantages blended learning brings now and if universities are to succeed fully in digitally transforming learning and teaching.

Here we set out those actionable insights, supported by our recommendations for the next steps our sector can take.

1. Embed digital at the heart of university culture

Strong leadership and a clear vision are essential traits that underpin successful transformation, as digital becomes a central feature of learning and teaching. This is a significant and challenging shift for universities and their leaders, and they will need the support of their governing bodies.[9]

At the strategic level, leaders need to identify a feasible level of digital learning and teaching ambition for their context and develop a strategy that sets a clear vision across the entire university.

The *learning and teaching reimagined* strategic framework outlined in section 2.3 is designed to help. However, the major cultural shift caused by the COVID-19 crisis also needs to be recognised: it requires resilience and a growth mindset to lead and support staff through such change. Never has building a culture of trust and belonging across an organisation been so important.

9 CUC (2020) *The Higher Education Code of Governance*. Available at: **universitychairs.ac.uk/wp-content/uploads/2020/09/CUC-HE-Code-of-Governance-publication-final.pdf**

> "We need to find a new way of leadership: supporting and empowering leaders not to have the answers but facilitate questions, including agile decision-making and moving away from siloed committee structures."
>
> **Participant, consultative roundtable on cultural change**

There remains much to learn as universities progress through the digital transformation of learning and teaching. Creating the conditions for continuous adaption and progression may require a rethink of leadership and decision-making.

We recommend universities use their strategic and structural planning processes to effect the digital transformation of learning and teaching, ensuring that sponsorship is provided by governing bodies and executive teams.

2. Invest in the short-term with a view to the long-term

For many years, universities have made significant investments into their physical estates. The pandemic experience has shown that there is a need to recognise the importance of investing substantially in the digital estate to support and grow online learning and teaching capabilities. However, greater reliance on the use of technology will introduce heightened threat exposure to cyber security incidents. The cost of measures to mitigate the likelihood of such incidents will be substantial and should not be underestimated.

Historically, higher education investment in technology has been proportionally lower than in other sectors: according to Gartner research, average higher education expenditure on technology is 5.7% of revenue whereas banking expenditure on technology, for example, is 7.5% of revenue.[10]

University leaders told us that practical and creative subjects were more difficult to move online than other disciplines during the emergency response to COVID-19. Scaling blended learning for such subjects will continue to require focused attention and sustained investment in the coming years.

Though there is currently great pressure on universities to prepare well for 2021/2022 and the academic years to come, there remains much to learn about implementing blended learning on a large scale. It will require sectoral collaboration and likely much creativity to find affordable solutions that support further digital transformation of learning and teaching.

We recommend universities review their strategic investment in digital learning and teaching.

We recommend universities make investment plans to mitigate the heightened cyber security risks that arise from greater dependence on digital technologies.

---

10 Gartner (2019) *IT Key Metrics Data 2019: Industry Measures*. Available at: gartner.com/en/documents/3895271/it-key-metrics-data-2019-executive-summary

3. Explore new economic models to deliver high-quality blended learning at scale

Scaling up takes time and investment and these constraints must be acknowledged in what remain extraordinary conditions in academic year 2020/21. If the shift to quality blended learning is to be sustainable and affordable, it will require system-wide attention.

At the outset of our work in June 2020, we heard from technology-enhanced learning experts how blended learning is a very significant shift for our sector, requiring investment in resources, specialist technologies and core infrastructure. Subsequently we have seen the increasing popularity of digital library resources but, despite emergency response deals, there remains deep concern about their affordability in the medium to long term.

Adopting blended learning will certainly require significant investment but system-wide change offers an opportunity to consider and develop new economic models to support this.

We recommend universities think radically about the scale and scope of their learning and teaching activities, prioritising a blended learning approach wherever possible.

4. Embrace blended learning as part of curriculum redesign

An emergency online learning response is very different to well-designed, sustainable pedagogies driven by a quality learning, teaching and overall student experience. Learning design makes the difference between merely transporting learning and proactively transforming it.

> "[we need] … far more purposeful, thoughtful design, with attention to those active learning principles, but done in a more flexible fashion"
>
> **Participant, changing staff needs webinar**

Current approaches to curriculum design take time and consideration, typically well over one calendar year's effort. Universities are looking for ways to increase efficiencies while creating high-quality learning experiences that deliver learning outcomes.

In our leadership roundtables on the futures of learning and teaching, participants emphasised the importance of creativity with curriculum design, involving students and lecturers and reconsidering aspects of course delivery and content.

Designing with inclusivity as the default is vital to avoid the potential for adverse impacts of online learning on disadvantaged groups. Curriculum redesign offers an opportunity to lower the barriers of access to higher education by ensuring all students' needs are considered from the outset.

It is important here to recognise how digital plays a critical role for students with additional needs, in delivering a successful and inclusive university experience. However, many disabled students still face barriers, with a quarter of respondents rating the accessibility of their course as just one or two out of five in a recent report.[11]

Legislation requires universities to demonstrate they are actively working to ensure learning online is accessible, and this is of fundamental importance for students with additional needs. Designing with a range of needs and preferences in mind will become more important as universities begin to explore and advance personalised learning.

We recommend universities accelerate the adoption of blended learning, with close involvement of students in all aspects from design to delivery.

We recommend ensuring inclusivity and accessibility are integral considerations in curriculum redesign.

Redesigning for success

The Open University (OU) uses a model that incorporates how students learn into the design of digitised modules, using multimedia to engage students, frequent formative assessment feedback to support personalised learning and analytics that can predict, with over 90% accuracy, whether a student is likely to pass or fail a module, informing early intervention and design improvements. An increasing number of its modules use augmented reality and its OpenSTEM Labs enable students to operate scientific and engineering equipment at a distance using their laptop or tablet. A study app supports learning on a mobile device, including offline. While an OU module can have thousands of students studying the course, a key factor in students' success is small group tuition, with each student in a tutorial group. To support student choice, one in five tutorials are normally in person, although during the pandemic all have been moved online.

5. Expand the digital skills and confidence of students and staff

It remains important to avoid assuming students arrive at university with the level of competency that is needed for success. Jisc research suggests learners may appear confident in the use of technology[12] but to use it effectively for their studies they are likely to need much more support than they themselves identify.

There appears to have been a huge leap in lecturer digital capabilities in 2020, with university leaders relating significant take-up of digital skills workshops and training sessions for staff. Our research also reflects an increase in lecturer confidence in using digital technology to deliver online learning and teaching between March 2020 and the start of academic year 2020/21, from 49% to 74%. Nevertheless, the need for greater digital confidence at all levels of the university was something that resonated consistently throughout our research.

---

11 Policy Connect (2020) *Arriving At Thriving: Learning from disabled students to ensure access for all*
Available at: **policyconnect.org.uk/research/arriving-thriving-learning-disabled-students-ensure-access-all**

12 Jisc (2020) *Student digital experience insights survey 2020: UK higher education (HE) survey findings*.
Available at: **jisc.ac.uk/sites/default/files/student-dei-he-report-2020.pdf**

> "It's really important … that we spend time supporting our colleagues and give them permission to fail"
>
> **Vice-principal, pro vice-chancellor learning, digital learning interview**

Wellbeing of staff and students will remain particularly important throughout the pandemic and as we begin to recover from it. Staff who perceive themselves to be time poor and pressured will need continued support and access to opportunities to enrich their digital skills. The importance of recognition and reward as a way to incentivise staff to develop their digital skills was also a theme that we considered necessary for sustained change.

We recommend universities ensure their professional development strategies and plans include digital training, peer support mechanisms, and reward and recognition incentives to encourage upskilling.

Upskilling in action

"One of the biggest challenges we faced in the rapid move to remote and online teaching was the digital skills of staff. Most staff weren't trained in modern online digital pedagogy or how to use the digital infrastructure and tools.

"It was a huge experience to see how quickly we could curate playlists of different digital learning courses that staff would need to quickly get up to speed with. We use a couple of subscription learning services, including LinkedIn Learning, and the sheer breadth and quality of some of the digital skills courses are just excellent.

"The willingness of staff in a crisis to take those digital skills courses was truly impressive when ordinarily it would have been way down their to-do list.

"We have a programme called the Edinburgh Model and we now have more than 600 staff who have fully gone through the course. It teaches a whole new way of learning online in the new hybrid model of teaching that we've established ready for this coming autumn term. In normal circumstances, it would have taken me years to get all the staff lined up and doing that, and now the crisis has just put that adoption into overdrive." – Gavin McLachlan, vice-principal and chief information officer, and librarian to the University of Edinburgh

6. Communicate the benefits of blended learning

Students' experiences of online learning have been mixed, with the emergency teaching provision of 2020 by no means typifying the highest quality offering. However, we found that those students who have experienced good quality digital learning tend to view online learning positively. The Open University, for example, achieves consistently high satisfaction ratings in the National Student Survey.

The Advance HE/Hepi Student academic experience survey 2020[13] found that, while students felt the lack of in-person classes due to COVID-19 affected value-for-money, there was little evidence that their perception of the quality of teaching was impacted.

As we have discussed, enjoyment of learning online also increases with experience of it and clearly many students' preferred learning mode is now blended. However, as the QAA noted in June 2020 when it published *Building a taxonomy for digital learning*,[14] there is a need for a common language to describe digital approaches to programme delivery in order to remove confusion.

The deficit model of online learning as 'remote' or 'distant' also needs to be challenged. We have evidenced a shift in attitudes and an acceptance of digital transformation of learning and teaching among those studying and working in higher education. There will need to be some effort made to shift perceptions beyond our sector so that a digitally enhanced university offer is understood to have added value for prospective students.

Our research shows students expect their learning experience to be interactive, engaging, accessible and enjoyable. They especially like the flexible and convenient nature of learning online.

We recommend universities and sector organisations establish research to remain in step with the changing digital preferences and expectations of prospective higher education students.

7. Strengthen the response to digital poverty

The digital divide came into sharp relief through spring/summer 2020 with the differing levels of digital access students experienced when they were away from campus. According to a September 2020 survey by the Office for Students (OfS),[15] during the lockdown 52% of students said their learning was impacted by a slow or unreliable internet connection and 18% were affected by lack of access to a computer, laptop or tablet device.

We recognise the OfS's definition of digital poverty – when a student lacks access to one of the following: "*an appropriate device; good connectivity; reliable back-up when things go wrong; relevant software; a trained teacher; and space in which to work*".[16]

Our own research has uncovered problems of student access to network connectivity, suitable devices and a space to study. Also, notably for many students, access to printers and digital resources are considered important for learning.

To date, staff digital inequalities have received less attention than those affecting students but we learnt how they may also have limited access to technologies, connectivity and space when working off campus.

---

13 Advance HE-HEPI (2020) *Student Academic Experience Survey 2020* Report Available at: **advance-he.ac.uk/reports-publications-and-resources/student-academic-experience-survey-saes**

14 QAA (2020) *Building a Taxonomy for Digital Learning*. Available at: **qaa.ac.uk/docs/qaa/guidance/building-a-taxonomy-fordigital-learning.pdf**

15 Office for Students (2020) *'Digital poverty' risks leaving students behind* Available at: **officeforstudents.org.uk/news-blog-and-events/press-and-media/digital-poverty-risks-leaving-students-behind**

16 Barber, M (2020). Digital teaching and learning: the opportunity. Bristol: OfS. Available at: **officeforstudents.org.uk/news-blog-and-events/blog/digital-teaching-and-learning-the-opportunity**

Students who participated in our research recognised the scale of challenge presented to universities by the pandemic. Nevertheless, access to the appropriate conditions for learning, blended or otherwise, remains a significant concern for the entire university community.

We recommend universities, government and funders provide additional funding or means to reduce digital poverty as a barrier to students accessing higher education.

Community building in action

In March 2020, when Coventry University moved to fully online delivery, it was also working on developing its digital approach in a sustained way for the future. It worked with startup Aula (a Step Up member[17]) on a new approach to learning design, fully transforming all of its programmes for online learning – around 3,000 modules – ready for September 2020. The planned switch to Aula from Moodle followed a successful year-long pilot of 1,800 students in which daily student engagement with learning content more than doubled.

"Aula is mobile-first, making it easily accessible for students, especially those who may not have access to laptops at home. It is also simple for our academic staff to use and will help us create an experience for students of being in a learning community and not being alone in their study." – Andrew Turner, associate pro vice-chancellor for teaching and learning, Coventry University

2.3 Developing a strategic framework

> "There has been a huge amount of digital acceleration in universities. But what has been achieved so far has mostly been about adding new tools to old pedagogy rather than general digitally enabled education across the board. The next big challenge is to integrate digital into the core university strategy."
>
> **David Maguire, interim principal and vice-chancellor, University of Dundee**

If universities are to address the seven sector challenges, they will need to adopt a longer-term view on the role of digital technology. A coherent strategic approach to digital can help address many of the major existential risks the sector faces. When the pandemic hit, some universities already had digital embedded throughout and were able to adapt quickly. Others found themselves casting around for ideas, skills and technologies. What recent experience has shown is that developing a long-term strategy for digital is now more essential than ever.

17 Step Up is a collaborative community set up by Jisc and Emerge Education. It brings together edtech founders and education leaders with a common goal of increasing innovation and supporting long-term change in UK education. Startups must pass a Step Up assessment to join. **https://stepup.jisc.ac.uk**

Given the current, significant pace of change, university leadership teams will have to make conscious decisions on the role digital technologies will play in shaping their future. They will have many strategic questions to consider, each tailored to their specific circumstances.

Universities UK, Jisc and Emerge Education, together with technical partner Salesforce, worked with more than 20 vice-chancellors and leaders from across our sector to develop a **long-term digital strategy framework** for university leaders.

The goal of the framework is to help university leaders realise the benefits of a long-term strategic approach to digital technology and develop greater clarity around its role in the delivery of an institutional strategy. The benefits of a long-term strategic approach are far-reaching:

Resilience in the face of uncertainty: with the acceleration of new technologies, changes in demography and the labour market, and a rapidly shifting policy landscape, universities are operating in a 'VUCA world' – volatile, uncertain, changing and ambiguous. Those with a long-term digital strategy in place have found that it helped them better cope with the pandemic, giving them a response roadmap and the option to accelerate processes already underway. In the future, a digital strategy that advances online learning will ensure that staff are prepared to move between modes of delivery as necessary, the business model can adapt to rapid shifts in the market, and the necessary infrastructure and support are there to deliver a high-quality experience for students.

Flexibility and international competitiveness: a digital strategy can underpin expansion into new markets for recruitment and for delivery, both internationally and domestically (for example, in lifelong learning), and can create new revenue diversification opportunities that go beyond an online 'lift-and-shift' of existing activity. It will enable universities to build on network aggregation effects of digital platforms to scale collaboration with employers massively in order to meet changing student needs and policy priorities. There is now a genuine opportunity for the UK to become a world leader in the use of technology in higher education, augmenting existing strengths in the sector.

Technology as an integral part of the student and staff experience, not an add-on: thinking strategically about digital technology will allow universities to make the most of their potential to create a step change in the way students and staff interact with each other. Digital needs to be recognised as a strategic asset and as a way to help deliver a university's mission. It must be given the care and resources this implies. All too often, digital solutions within universities are seen just as tools or point systems and are introduced on an ad-hoc basis, with insufficient support, ending up at best a bonus and sometimes a source of frustration. A more strategic approach, that sees digital innovation as a core element of that experience, will lead to greater buy-in, open up new ways of working and learning, and ultimately produce a clearer return on the investment.

Digital at the core: a 2030 strategy framework for university leaders

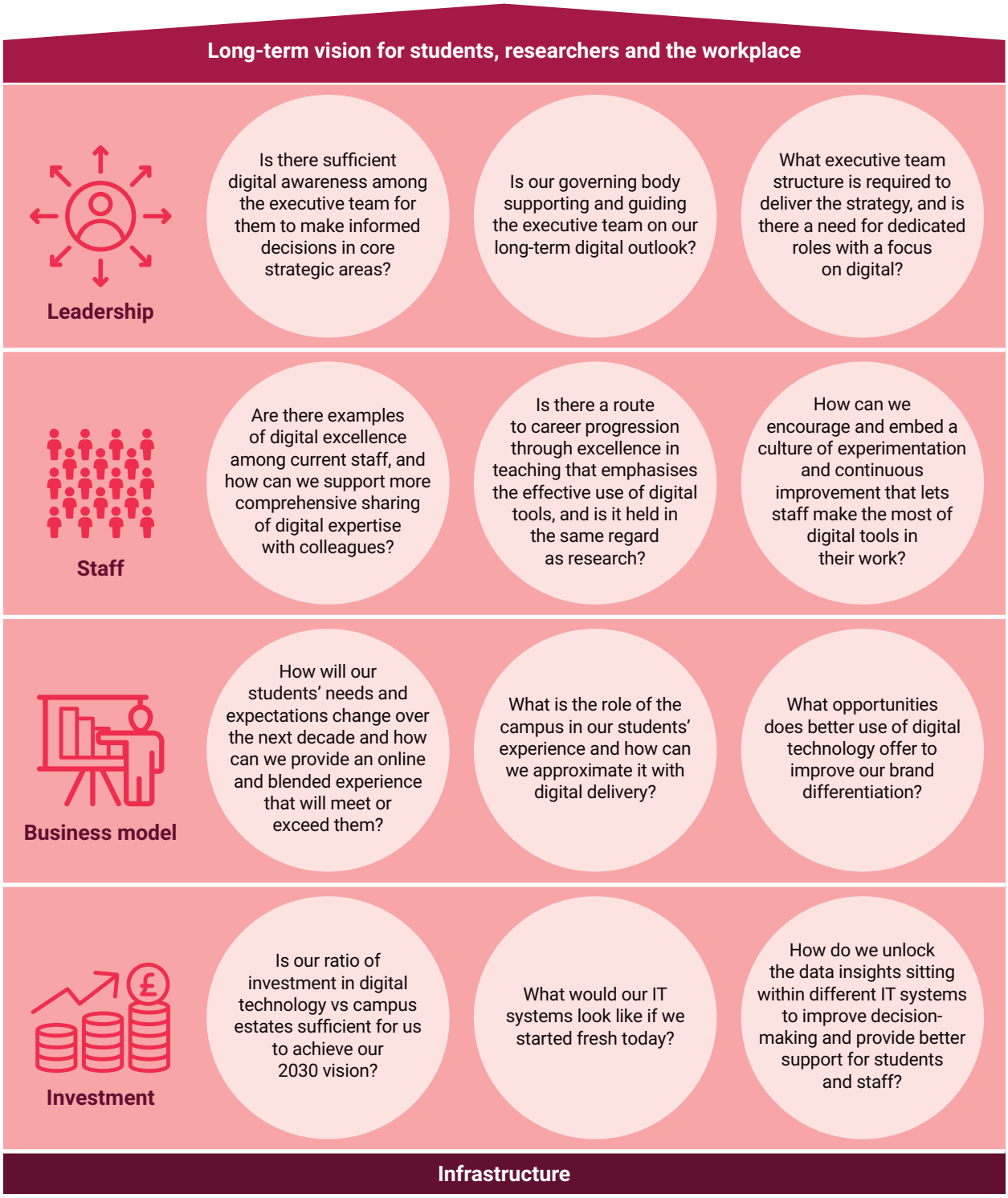
> "In any organisation, you are always going to have 15-20% of pioneers who are already out there at the forefront of practice. Mobilising these individuals, who can and have done it all before, through peer to peer learning is really important. That way you can connect those who are less confident with their peers who can support them to achieve the digital goals and outcomes that we want."
>
> **Nick Petford, vice-chancellor, University of Northampton**

This strategic framework is structured across four themes of **leadership**, **staff**, **business model** and **investment**. The **web version** of the framework includes 'recipes' with relevant tools and tactics that help answer each question, plus links to additional resources, and university case studies.

For each theme, we identify some of the questions that leaders need to ask themselves and their teams if they are to identify the strategic opportunities and gaps in their thinking about digital technology and its role in achieving the university's long-term strategic goals.

For each question we take a deep dive into its implications and offer resources, tools and techniques that can be used by each team to find their own answers.

> "There is a growing business imperative driven by the rapid changes in expectations of students and governments. There is a need to think differently about how we most efficiently and effectively educate our students, providing an exceptional student experience that meets their needs, within ever more constrained budgets. Thinking about how the business model for HE will develop, the key question for all of us is whether digitally supported education is here to stay or just a transient phase that we can ignore.
>
> For me, it is inevitable that even 'traditional' establishments will need to move towards using blended learning and fully digital models. Those that do not plan for this will ultimately lose out. If UK HE does not embrace this reality, then I fear that our international reputation as the best in the world could well be compromised."
>
> **Graham Galbraith, vice-chancellor, University of Portsmouth**



Alongside the strategic framework, new resources are available on the *learning and teaching reimagined* platform[18], a website that supports the adoption of our recommendations to prepare for 2021/2022.

18 See Appendix 2: The *Learning and teaching reimagined* platform and **jisc.ac.uk/learning-and-teaching-reimagined**

Part three: Being inspired by 2030

Key messages

> 2020 has shown us glimpses of the coming years

> Our vision of 2030 is designed to inspire and to provoke thought about the possibilities that lie ahead

> The principles are shaped to guide the path of digital transformation from 2020 to 2030

3.1 Vision 2030

The experience of 2020 has demonstrated the potential for a complete digital transformation of higher education learning and teaching. Our vision of 2030 is designed to inspire and promote further debate about how universities might change.

In 2030 UK higher education learning and teaching is regarded as world class because it is attractive to all students, seamlessly spans the physical and virtual worlds and is of the highest academic quality.

Students of all ages and in any location can participate by learning flexibly around work and family commitments and across time zones. The highly engaging and interactive learning experiences on offer set UK higher education apart. UK universities have grown their student communities, expanding smoothly beyond their physical bases into the virtual world.

Students move fluidly across physical, digital and social experiences. The integration of mixed reality technologies strengthens the strong sense of university identity and community, no matter how students choose to participate and learn.

Students benefit from a personalised learning experience. The widespread adoption of artificial intelligence (AI) provides a learning experience that effortlessly melds the preferences and needs of the individual learner.

Student success is at an all-time high. Digitally fluent leaders foster a culture of learning and teaching excellence, raise academic standards through innovations in pedagogy and bring learning to life in the most effective and compelling way.

Lola, student, 2030

My studies fit around my life – they need to as I've got my hands full with a job and a small child. Luckily, my university offers really flexible, modular degrees so I never feel I'm missing out. I watch the chunked-up lectures on my phone on my commute and send questions to the tutor through chat in between our online check-ins. Thankfully, my degree exams are much less stressful than the exams I had at school – and more useful to my learning. My AI coach logs how I'm doing on the essays, polls and quizzes and where I need more practice. I get frequent alerts about my progress and problem areas, and when I've earned another credit towards my degree. The collaborative learning sessions are what I really love. I'm in a group online with students from all over the world plus a local group with course mates – we mostly meet up in one of the learning spaces on campus – where we tackle real-world problems. We also do field trips, using virtual reality and 3-D walkthroughs, to places I'd never be able to go otherwise.

Sam, lecturer, 2030

I come onto campus most days – I like the buzz of being around other people – and I tend to use one of the 'blended' classrooms. It's set up with screens and cameras so I can interact easily with all my students, whether they are there in person or showing up from elsewhere as their holographic projections. (I also have a smaller studio-in-a-suitcase setup at home for when I need it.) Of course, it's all recorded so students can catch up later or review the class. It's an exhilarating way to teach and much more interactive than when I started out as a tutor in the early 2020s. I'm there to guide, support and challenge them after the AI has taken them through a mix of short, personalised activities with immediate, empathic feedback. I can also focus more on motivation and developing a strong sense of a learning community in my teaching groups. That's crucial – education is still very much a social process as far as I am concerned.

Anita, leader, 2030

Digital transformation of our university has allowed us not just to survive, but to thrive. We have established a high-quality brand both within our locality and out in the virtual world. Higher education leadership has always been about juggling many different priorities and that's not changed. I feel we have a good balance now of digital and physical, whether that's in the top team (the PVC-digital is my right-hand woman), or reorienting investment between the physical and digital spheres. We work very closely with our students as partners and, as a result, were able to move more quickly than we might have otherwise done into offering fully flexible, truly multi-modal, modular degrees. Our students can now choose their own pathway towards their final qualification and progress at their own pace. As a result of the great support we provide, online engagement and retention rates are up and learning outcomes and employability are at all-time highs. And, most importantly, we're still changing lives.

With thanks to everyone who contributed a 2030 vision to *Learning and teaching reimagined*. Read visions at **jisc.ac.uk/learning-and-teaching-reimagined/visions**

3.2 Guiding principles

To achieve our higher education vision in 2030 there will need to be a digital transformation in learning and teaching. As other sectors have experienced, digital transformation involves a radical rethink of the use of technology, people and process. Throughout our research we have identified some challenges, explored possible areas of impact and noted features of learning and teaching with particularly strong appeal.

Drawing on this insight, we have shaped ten principles to guide the digital transformation of learning and teaching in universities.

1. Digital fluency

Digital literacy is important but we should aspire to achieve a level of 'digital fluency', as a fuller appreciation of the potential of digital to transform learning and teaching. We believe digital pedagogy should be accepted as a core feature of the higher education teaching profession. Digitally fluent leaders, governors and staff will enable universities to grasp new opportunities to develop and use key education technologies.

2. Digital innovation

The global challenges we face require us to adapt to continued change but we believe creativity is equally important if we are to make progress in advancing learning and teaching through digital means.

With care and determination, our experience and recovery from COVID-19 can strengthen us, helping shape a resilient and innovative university workforce that can continue to accelerate the adoption of proven technologies to evolve and enhance the learning experience.

Universities excel at identifying opportunities for innovation and progression. We believe we need to harness that expertise and creativity and make it our way of doing business.

3. Integrated working

COVID-19 has brought much disruption and challenge but the widespread uptake of online collaborative tools and technologies has enhanced our ability to solve problems and cocreate solutions across institutional silos. This has surfaced a different pace and approach to decision-making, communicating and working.

We believe there is an opportunity to enhance the case for inclusive and collaborative university working environments, that can enable the transformation of learning experiences in a way that further connects universities to employers and the wider community.

4. Engaging learning

Our students expect a highly engaging learning experience.

In the short term there are several constraints on providing greater levels of engagement including the need to adhere to physical distancing restrictions, affordability concerns and limitations of some online learning platforms. By using technology simply for lecture transmission, there may be less interactivity online and so small groups of students might be brought together for supplementary social connections and collaborative sessions.

In time, we believe there is real opportunity to rethink interactivity across physical and digital learning spaces as we adopt blended learning.

5. Personalised learning

As the sector seeks to appeal to a more diverse range of learners with a broader set of preferences, a shift to more personalised[19] learning experience becomes increasingly desirable, with benefits including increased interest and motivation for learners, greater pace of learning, more frequent and immediate feedback and more efficient use of time by both students and lecturers.

Adaptive[20] learning offers the potential to harness technology in the learning process to provide a customised response by selecting resources and activities that address the unique needs of the learner.

6. Transformed learning spaces

Physical spaces are important and, since March 2020, we have learnt much about where students identify value in their university experience. Learning spaces, whether digital or physical, should feel coherent and connected, and part of a compelling overall experience.

We believe it is now important to put as much thought and investment into digital learning spaces as physical learning spaces. It is important to enable fluid movement between physical and digital spaces.

7. Always inclusive

Developing equitable learning opportunities for those with additional needs is fundamental.

We believe digital learning must become accessible for everyone by design so that it can respond to the needs and preferences of the diverse student population.

8. Building learning communities

COVID-19 has reinforced how social engagement is a vital element of the learning experience. It is important to focus on both emotional and academic intelligence in the learning context.

---

19 'Personalisation' is an evolving term. It is increasingly understood to mean "*tailoring learning experiences to individual students' needs and interests*". See eg Fitzgerald, E et al (2018) A literature synthesis of personalised technology-enhanced learning: what works and why. Research in Learning Technology Vol. 26.

20 'Adaptive' learning is often used interchangeably with personalised learning. Here we are using it in the context of digital, particularly AI tools, where the learning system is modified automatically and dynamically in response to the learner's strengths and weaknesses.

It has never been more important to offer safe spaces for students, build trust and foster a sense of community and belonging so that learning can thrive.

We believe learners will need help and support to navigate our increasingly complex digital world, just as we all need to adapt to continuous change.

9. Learning infrastructure

Education technologies are rapidly maturing. Accelerating the uptake of new technologies requires a technological environment that can accommodate the best integrated solutions.

We believe it is important to reconsider our approach to institutional learning infrastructures. Universities should aim to develop an integrated and secure education technology ecosystem that is capable of supporting the ambitious use of technology.

10. Innovative learning

There is deep expertise in technology-enhanced learning in higher education but there remains much to learn about blended learning at a large scale.

We believe there is a need for continuous experimentation, learning and investment. This may require us to adjust our approach as we understand more fully the impacts of implementing large-scale blended learning.

3.3 Learning and teaching reimagined

In 2020, everything changed as the world faced a global pandemic. In higher education, the importance of leadership through change and transformation shone through as never before when the sector rose to meet the challenge of a profound digital shift. In 2021 we can expect more change as the impact of the pandemic continues to be felt. We look forward to a process of recovery and renewal for our sector, our society and our economy.

Universities will play a leading part in this revival. The changes to learning and teaching forced by COVID-19 have already brought benefits. A move to blended learning at scale will further open up higher education by offering more flexible, inclusive and progressive routes to reskilling and upskilling opportunities. These in turn will broaden the reach and further heighten the appeal of higher education.

The year 2030 will be here soon. The next decade offers many opportunities and there is much to learn from each other. Our vision and guiding principles paint a picture of an expanded and higher-quality education system. Key to realising this ambition is continued sector collaboration. This includes development of new and emerging technologies, such as AI, mixed reality and robotics. We also expect to see shared course resources created by sector consortia, UK-wide data standards for the interchange of learning data, the wider use of micro-credentials, new forms of assessment and the development of wellbeing analytics. Together these can enable advances in pedagogy, reduce delivery costs and spread knowledge more widely. In this way we can continue to serve the needs of students and staff well into the future.

Appendices

Appendix one: The *Learning and teaching reimagined* platform

The *learning and teaching reimagined* platform aims to provide leaders in universities with insight on how the future may unfold for learning and teaching, and how they can plan their own path to that future. It includes resources that answer three questions:

1. **What is the future of learning and teaching for higher education?**
   Digital transformation in learning and teaching offers greater choice for leaders. As leaders consider the long-term future, we showcase some radical and provocative visions to inspire them, and scenarios for learning and teaching in 2021/2022.

2. **What do I need to know now?**
   A new series of 'primers' to explain the technology-enhanced learning essentials, alongside advice and guidance for those taking a deeper dive.

3. **What will help me shape this future?**
   A strategic framework, posing the fundamental questions to answer, supported by tools and techniques for strategic planning by distributed teams.

Appendix two: Methodology

Advisory board

In June 2020 we established an advisory board to provide advice and guidance, and support the research undertaken by *learning and teaching reimagined*.

We held four advisory board meetings between June and October, 2020. The advisory board members are listed on page 2.

Sector organisations
We invited representatives from a wide range of sector organisations to provide advice and guidance, and support the research undertaken by *learning and teaching reimagined*.

We held nine sector organisations meetings between June and October 2020.

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

Sector engagement
We held a range of virtual sessions, working with partners and sector organisations, to reach the widest possible range of contributors within higher education, in summary:

> Three open invite webinars
> Four leadership roundtables
> Nine focus groups on learning and teaching in 2021

This engagement through June–Oct 2020 brought together representatives from 199 organisations, including 133 UK universities, 22 further education or skills providers, 10 UK alternative HE providers and 10 international organisations.

370 participants attended in total. 160 participants classified their responsibility as being education or learning, 93 as being leadership and management.

319 participants were representatives from UK HE or FE providers, of which 86 participants classified their role as leadership, 79 as senior managers, 46 as managers and 58 as academic staff.

We conducted a large number of interviews with sector leaders and learning and teaching experts.

Online surveys were conducted to explore, anonymously, experiences of online learning and teaching of three separate groups: leaders, lecturers and students.

40 executive leaders responded, of which there were 28 PVCs for learning and teaching or equivalent, seven directors or heads of learning and teaching, two deputy vice-chancellors, one provost, one vice-chancellor and one deputy pro vice-chancellor.

323 lecturers participated, comprised of 44% from learning and teaching-focused universities, 41% research intensive universities and 12% either in a specialist university, FE teaching HE, or working for multiple institutions. 49% teaching at institutions with <20,000 students, 42% >20,000 and 9% didn't know. 60% lecturing in art, humanities and social sciences (AHSS), 36% science, technology, engineering and maths (STEM) and 4% both. 18% working in roles up to five years, 20% six to 10 years and 61% more than 10 years. 252 responses obtained via YouGov panel (of whom 47% female and 53% male), remainder via Jisc research panel and other networks.

439 learners participated in our survey. 338 were in the HE market (current, prospective or recently graduated learners). 359 had at least some experience of online learning. 279 were both in the HE market and had experience of online learning. 220 were currently studying or about to start an educational course (including UG, PG, deferrals, apprenticeships and professional qualifications). Of these 220 learners, 77 (35%) were studying STEM subjects and 143 (65%) were studying non-STEM subjects (arts, humanities and social sciences).

To supplement the learners survey, 31 learners were engaged across five focus groups, comprised of: school leavers (11), school leavers – limited IT access (2), second year students (12), adult learners (4), adult learners – limited IT access (2). Of these, 21 were white British and 10 BAME.

Finally, we established a member audience panel:

Sector	Role level	Area
HE: 162	Exec leader: 9 Leader: 31 Manager: 49 Practitioner: 73	Teaching & learning: 120 IT:11 Library: 11 Other: 20
FE: 18	Leader: 1 Manager: 8 Practitioner: 9	Teaching & learning: 15 IT: 1 Library: 2
Other: 55		

Thank you to all the UK and international universities, further education colleges, skills providers and alternative HE providers that have contributed to this work:

@Home Childcare Training Ltd
Aberystwyth University
AECC University College
Al Maktoum College of Higher Education
Anglia Ruskin University (ARU)
Arts University Bournemouth
Association for European Life Science Universities
Aston University
Bangor University
Basingstoke College of Technology
Bath College
Bath Spa University
BIMM Institute
Birkbeck, University of London
Birmingham City University
BMet
Bishop Grosseteste University
Blackpool and The Fylde College
Borders College
Brunel University London
Buckinghamshire New University
Canterbury Christ Church University
Cardiff University
City, University of London
Coventry University
Cranfield University
De Montfort University
Delft University of Technology, the Netherlands
DGHE
Durham University
Eden Careers
Edge Hill University
Edinburgh Napier University
Falmouth University
Gower College Swansea
Grimsby Institute
Grŵp Llandrillo Menai
Guildhall School of Music and Drama
Harper Adams University
Hartpury University and Hartpury College
Heriot-Watt University
Hugh Baird College
ICMP – The Institute of Contemporary Music Performance
Imperial College London
Innovative Quality Solutions
Istituto Marangoni
JS Group
Kaplan
Keele University
King's College London
Kingston University
Lakes College West Cumbria
Lancaster University
Leeds Arts University
Leeds Beckett University
Leeds City College
Leeds Trinity University
Lincoln College
Liverpool Hope University
London School of Hygiene and Tropical Medicine
London South Bank University
Loughborough University
Macclesfield College
Matrix Training and Development Ltd
Metfilm School
Middlesex University London
MJB Consulting
Morley College London
Newcastle University
Norland
Northumberland College
Northumbria University
Norwich University of the Arts
Nottingham Trent University
Oxford Brookes University
Pen Green Centre
Plymouth Marjon University
QA
Queen Mary University of London
Queen's University Belfast
Ravensbourne University London
Remit Group
Richmond, the American International University in London
RMIT University, Australia
Robert Gordon University
Rose Bruford College
Royal Academy of Music
Royal College of Music
Royal Holloway, University of London
SAE Education Ltd
Schumacher College
Sheffield Hallam University
Solent University
Southern New Hampshire University (SNHU), USA
South Essex College
St George's, University of London

St Mary's University
Staffordshire University
Teesside University
The City of Liverpool College
The London School of Economics and Political Science (LSE)
The College of Haringey, Enfield and North East London
The Manchester College
The Open University
The Quality Assurance Agency for Higher Education (QAA)
The University of Edinburgh
The University of Manchester
The University of Sheffield
University Academy 92 (UA92)
University Campus Oldham
University College London (UCL)
University College of Estate Management (UCEM)
University of Aberdeen
University of Bath
University of Bedfordshire
University of Birmingham
University of Bradford
University of Brighton
University of Bristol
University of Cambridge
University of Central Lancashire (UCLan)
University of Chester
University of Derby
University of Dundee
University of East Anglia
University of East London
University of Essex
University of Exeter
University of Glasgow
University of Gloucestershire
University of Greenwich
University of Helsinki, Finland
University of Hertfordshire
University of Hull
University of Kent
University of Leeds
University of Lincoln
University of Liverpool
University of London
University of Northampton
University of Oxford
University of Plymouth
University of Portsmouth
University of Reading
University of Salford
University of South Wales
University of Southampton
University of St Andrews
University of Stirling
University of Strathclyde
University of Suffolk
University of Sunderland
University of Surrey
University of the West of England (UWE Bristol)
University of the West of Scotland (UWS)
University of Wales Trinity Saint David
University of Warwick
University of Westminster
University of Winchester
University of Wolverhampton
University of Worcester
University of York
Utrecht University, the Netherlands
West Highland College UHI
Wrexham Glyndwr University
Yeovil College
York St John University

Jisc
4 Portwall Lane
Bristol
BS1 6NB
0300 300 2212
help@jisc.ac.uk
jisc.ac.uk