## HE learning and teaching: vision

### 2020

**Student progression**

- Students have a wider range of options for customising their course: the content; how, when and where they study; how they are assessed and which activities they carry out face to face and online. To help students navigate the many choices they could make, they are supported by virtual assistants. These assistants track activity and performance and provide suggestions to help students maximise their time at university, informing every day choices as well as the big decisions about their educational path. Students generate a lot of activity data during their education, which can be used in increasingly sophisticated ways to help them get the most from their education. Students can control how data is used by the university.

**Data**

- Virtual assistants consume and act upon real time information about all aspects of university life. Staff and students use the assistants to make the most of time spent on physical and virtual campuses and to locate the right people and spaces for academic and social activities.

- Learning analytics are vital for improving student performance. Ethical concerns are paramount and students have control over how their data is used. The students that use the service value the ability to monitor their performance and to compare it with peers and predecessors.

**Estate**

- Estate managers rely upon real time information to maximise efficiency and environmental sustainability, informing timetabling and integrated planning of the physical and virtual estate.

**Expertise**

- Staff have high levels of digital capability and have access to tools, resources and networks to support further development. Students and staff partner on digital initiatives.

- Learners can access resources and modules from other universities and employers.

- A mixture of smart classroom tools and learning analytics gives teaching staff a rich picture of how students are developing through their studies. This helps them refine their teaching.

### 2030

**Student progression**

- Learners have full control over how and where they study and how long for. Universities are valued for building communities of learners, teachers and diverse experts, whether face to face or online. Artificial Intelligence is used extensively to aid teaching and assessment and manage the physical and virtual estate. Every learner manages their learning analytics profile throughout their education and into employment.

**Data**

- Learning analytics can be combined with other data to deliver learning systems that react to students’ performance and goals to provide personalised learning activities and pathways. They also challenge students to try new approaches that may work for them.

**Estate**

- Many estate decisions are made by the campus AI. The estates themselves are porous: students can access quality physical facilities wherever they go and benefit from constant connection to the virtual estate. Students can interact with the AI to get answers to common questions.

**Expertise**

- Each student curates their learning analytics profile. This is used throughout their education to provide personalised learning activities and pathways. The profile is becoming increasingly important in applying for jobs. The national dataset of these profiles is used extensively in teaching, government and research and underpins an increasing number of educational software applications. The ubiquity of this data has significant ethical implications that are carefully monitored.

- Students move between universities, often using them to accredit on the job or informal learning. Students nurture networks of expertise to help them throughout their learning journey.

- Competition between universities for staff and students is much more fierce. Universities have had to explore more flexible options for securing expertise and have to demonstrate strong performance to attract students.
## HE learning and teaching: what could Jisc contribute?

This vision explores issues that will pose significant challenges to the HE sector. If we are ambitious and move fast then all these challenges can be met using technology. At Jisc, we aim to utilise the power of our network to deliver that technology by working with providers and organisations from all sectors. Some of our existing projects have started to address the vision. Some areas of the vision will require new development work. In all our work we will follow these principles:

- Wherever possible, we will seek to work with existing technology and experts rather than starting from scratch
- We will work closely with universities to scope and develop solutions
- We will use a variety of approaches to acquire funding for development work
- We will move fast by focusing on a small number of the most pressing challenges

This page of the vision will continue to change and develop as new ideas emerge or existing ones develop.

### Jisc R&D

**2016**

**Learning analytics service and student app**

Jisc is working with relevant partners to develop a national learning analytics service and app that will help staff and students ensure they meet retention and attainment goals.

**Adaptive learning system**

Can Jisc work with relevant partners to develop a new type of learning management system that adapts to student needs based on learning analytics and other data?

### 2020

**The intelligent campus**

Can relevant information about all aspects of university life be consumed and acted on by the virtual assistants that already exist on mobile devices?

**Window on the world**

Could Jisc help provide a service that enables students to access learning opportunities from other universities and potential projects from employers?

### 2030

**Expertise**

The intelligent campus

Can relevant information about all aspects of university life be consumed and acted on by the virtual assistants that already exist on mobile devices?

**A virtual teaching assistant**

Is there a useful way to use learning analytics to produce a virtual assistant for teachers to help them continually refine their practice for maximum impact?
HE learning and teaching: vignettes

1. Prepare for university

2020

Shaz’s university opened up their learning and library systems to her before she started, and her virtual assistant helped her identify a few key readings and activities, including some which developed her digital capabilities for study.

2030

Based on her learning analytics profile, Shaz’s virtual assistant highlights some key areas she needs to develop before she starts her chosen course, and suggests some online options she can study while continuing to work. She enjoys this mode of study so much she completes her first year in this way.

2. Study in her own way

2020

Now she sets her own weekly activity goals, and compares progress with her friends. The campus is busy, but she can use her phone to find a quiet spot to study, book a slot in the gym, or see where her friends are. The wifi is fast and even available in the town centre so she can study wherever she is.

3. Plan her career

2020

Shaz is firming up her career plans, and her virtual assistant helps her choose her third year options. She notices that the most relevant module is offered by another university, so signs up to study it online.

2030

On the basis of one of her projects, an employer is ready to offer Shaz a job before her degree is finished. She can complete her degree with an employer-provided module and accredited on the job case study.

Shaz is looking forward to university and wants to make the most of the opportunity, but she has no firm career plans, and is concerned about the level of debt she will incur.

Based on her learning analytics profile, Shaz’s virtual assistant highlights some key areas she needs to develop before she starts her chosen course, and suggests some online options she can study while continuing to work. She enjoys this mode of study so much she completes her first year in this way.

After doing the first year of her course online, Shaz was excited to start her second year on campus, and loves the buzz of having lots of other students around. Her virtual assistant helps her choose the assessments she’d find most interesting, including some great projects with employers.
Chen
Graduate job applicant

Wants to get some early career experience in Europe, then move back to China.

1. Identify the right path for him

2020

After his first year in a new Chinese university, Chen transferred to one of its global partners to complete his studies: a leading UK higher education institution.

2. Maximise learning and build a strong CV

2020

On arriving, Chen volunteered to take part in a new digital career pathway scheme. It incorporates his prior learning achievements from China, and gives him suggestions for building the extra-curricular part of his CV, e.g. voluntary work.

3. Apply for jobs

2030

Chen arrives in the UK with a clear idea of what he wants to achieve. He uses an online career modelling tool to get ideas on possible third year modules and extracurricular work, as well as the grade point average he will need. He starts applying for summer internships right away.

His virtual assistant alerts him where his performance in areas of the course is starting to drift away from the high standard required. It triggers an early meeting with his personal tutor, and additional personalised online activities to really focus on the learning objectives in question.

Chen applies to several companies. As part of applying he submits his learning analytics profile, which demonstrates his working style in a more powerful and transparent way than any attitude based questionnaire. In the end, Chen has the choice between a number of job offers.

With this extra experience, Chen uses an online CV builder tool to good effect. He feels his applications are every bit on a par with home students. His hard work paid off with a trainee accountant job offer at a leading UK firm.
HE learning and teaching: vignettes

Charlotte uses her online dashboard to see the data from her whole cohort. She uses this to fit her weekly pre-workshop screencasts to student needs, and explores and contextualises the most challenging concepts in the face to face workshops. She gets detailed learning analytics information on the progress of her students, and rapid alerts if any of that group seem to fall off the pace - in which case she makes time for a chat ASAP. Sometimes it is a false alarm, but when there are issues, it is amazing how quickly many can be resolved person to person if tackled early.

Charlotte teaches students from all round the world who choose her classes based on her reputation for her specialism, largely derived through her online collaborative work. Some of her students attend through her host institution, others through brokered arrangements from other universities, but there are many students worldwide who attend independently or through their employers.

The virtual teaching assistant helps Charlotte act on her observations and the outputs of learning analytics to manage student learning effectively, structure group tasks, and provide relevant input to each student based on their current understanding and interests. Routine queries are also handled by the virtual teaching assistant, though Charlotte always keeps an eye on the conversations to make sure they’re on track.

At the end of each teaching block, Charlotte uses the data from smart classroom tools, learning analytics and her teaching records to review which teaching strategies have worked best across the cohort, and use this information to refine her plans.

Charlotte uses the data patterns from the virtual teaching assistant to review how each learning activity functioned for the different elements of her cohort, and replans accordingly. She reviews public interest in a couple of her proposed courses, often in research areas which have emerged through collaborative work with her students, and starts planning how to deliver the most popular one.

1. Teach her students effectively
2. Ensure her students succeed
3. Reflect and plan

Charlotte is very time-pressured, and wants to make sure that she’s focussing her teaching effort on the activities which make the biggest difference to her students.

Charlotte is a Lecturer.

2020

2030
HE learning and teaching: vignettes

1. Deliver an excellent student experience

2020
Mark is really pleased at the way his university has been able to use learning analytics and a student learning pathways tool to improve the retention, attainment and career destinations of particularly his non-traditional students.

2030
The university has a distinctive blended learning system, which evolves by incorporating the best-performing innovations of its teaching staff. The emphasis on personalised digital technology and 1:1 tuition has led to impressive student experience statistics.

3. Access the data required to make good business decisions

His team have used insights from a range of data sets to improve teaching and review the academic portfolio, contributing to strong TEF results. His estates team have used data on space utilisation to review the estate, leading to significant carbon and financial savings.

4. Ensure his university is competitive

Mark’s made good use of available training and support – a digital leadership programme gave a great introduction, an online course has really helped with the implementation of campus safety duties, and learner engagement data makes him confident that his international students are really here to study.

The university has seen an increase in numbers of graduates entering what would have once been seen as more ‘exclusive’ professions. This is due in part to the embedding of a personal employability dashboard. This has led to an increase in recruitment of high performing students and has helped the university move up the league tables.

Budgets, benchmarking, cyber security, employability, fees and fee caps, league tables, Prevent, recruitment, retention, satisfaction, teaching excellence framework, visas, ... the list goes on and on!