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40,000 students

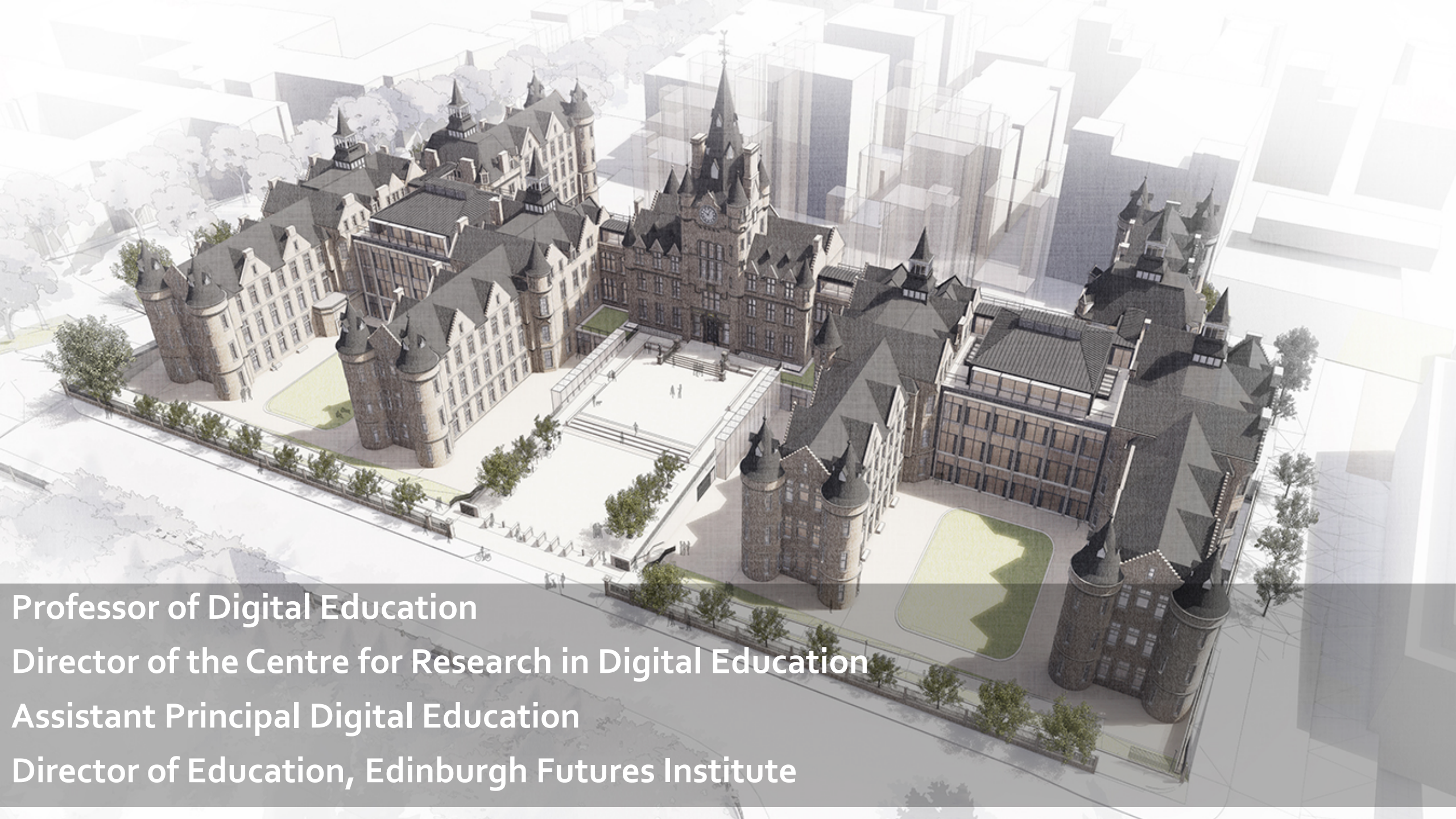
10,000 staff

4,000 online postgraduate students

2m learners in 50 MOOCs

distance learning at scale





Professor of Digital Education

Director of the Centre for Research in Digital Education

Assistant Principal Digital Education

Director of Education, Edinburgh Futures Institute

Perspectives on the future of education

Problematic futures

Co-designing the future

Perspectives on the future of education

Education and its relation to the future

Optimisation:

the future as an unfolding landscape of cost-benefit analysis and choice

Colonisation:

manipulating the future from the standpoint of the present

Protection:

“civilisation is a race between education and catastrophe” (HG Wells)

Speaking of education and technology

Instrumentalism:

“technologies are seen as neutral means employed for ends determined independently by their users.”

Determinism:

“technology drives social practice and change...humans must adapt to technical demands, while technology, like a Newtonian god, watches unaffected as the drama unfolds.”

Problematic futures:

erasure of the teacher, technological determinism and surveillance



In five years, the classroom will learn you.

TODAY, NEARLY 2 IN 3 ADULTS WORLDWIDE HAVEN'T ACHIEVED THE EQUIVALENT OF A HIGH SCHOOL EDUCATION.



THE CLASSROOM WILL CREATE A SYLLABUS BASED ON INDIVIDUAL LEARNING STYLE AND PACE, NOT ON AN ARBITRARY TEACHING SCHEDULE.



THE CLASSROOM OF THE FUTURE WILL LEARN ABOUT INDIVIDUAL STUDENTS OVER THE COURSE OF THEIR EDUCATION AND HELP THEM MASTER THE SKILLS CRITICAL TO MEETING THEIR GOALS.



THIS SYSTEM WILL LEVEL THE PLAYING FIELD BY ENSURING THAT BARRIERS TO EDUCATION BECOME LESS OF A FACTOR FOR SUCCESS.



A SYSTEM FUELED BY SOPHISTICATED ANALYTICS OVER THE CLOUD WILL HELP TEACHERS IDENTIFY STUDENTS WHO ARE MOST AT RISK, PREDICT THEIR ROADBLOCKS AND THEN SUGGEST MEASURES TO HELP THEM OVERCOME THEIR CHALLENGES.



“ IN FIVE YEARS, THE CLASSROOM WILL LEARN ABOUT EACH INDIVIDUAL STUDENT, AND PROVIDE A TAILORED CURRICULUM FROM KINDERGARTEN THROUGH HIGH SCHOOL AND TOWARD EMPLOYMENT. ”

DR KATHARINE FRASE
CTO EDUCATION, IBM

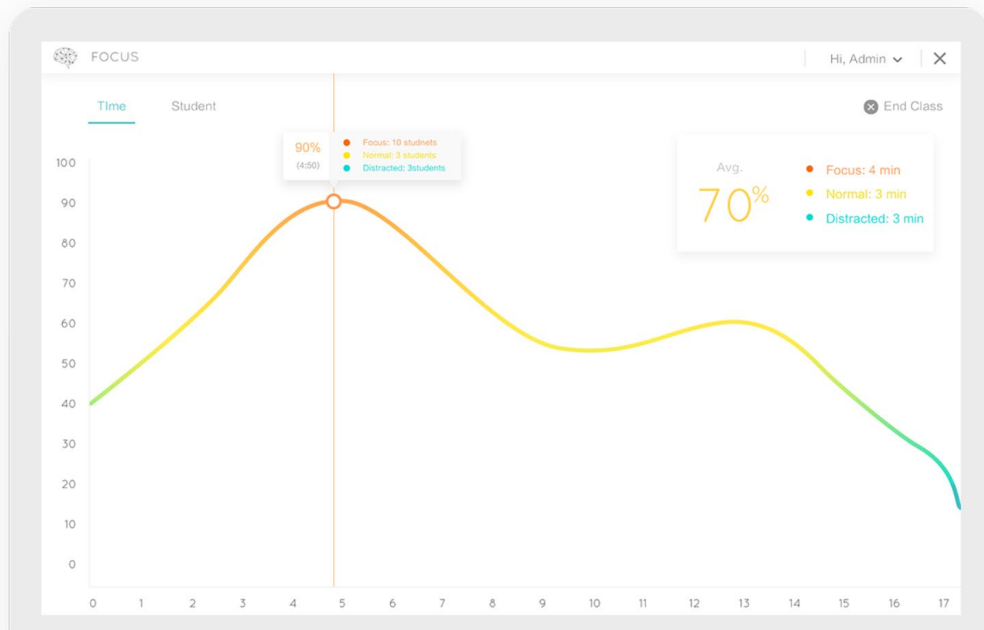




FOCUS EDU

Real-time Feedback

Focus EDU provides a portal for teachers to receive real-time classroom attention feedback. Teachers can easily reflect on their teaching methods and content to achieve further improvements in class performance.



Intelligent campus

So how could it work?

Students enter their lectures as normal and take their seats with no need to sign in, scan ID cards or provide fingerprints. Once settled, a camera records the audience and forwards the image to a face recognition system. Individuals faces are recognised and matched with the student image held on the student records system. All students identified are recorded as present at the lecture. The camera records the audience several times during the session ensuring that the students attend the full lecture. Following the lecture the attendance record is then used to provide reports to the Home Office and the Student Loans Company as required. Also the attendance data is used to help build a picture of the students engagement and wellbeing along with course work submissions, recorded logins to university systems and a range of other data.

Co-designing the future



Co-designing a values-based future for digital education

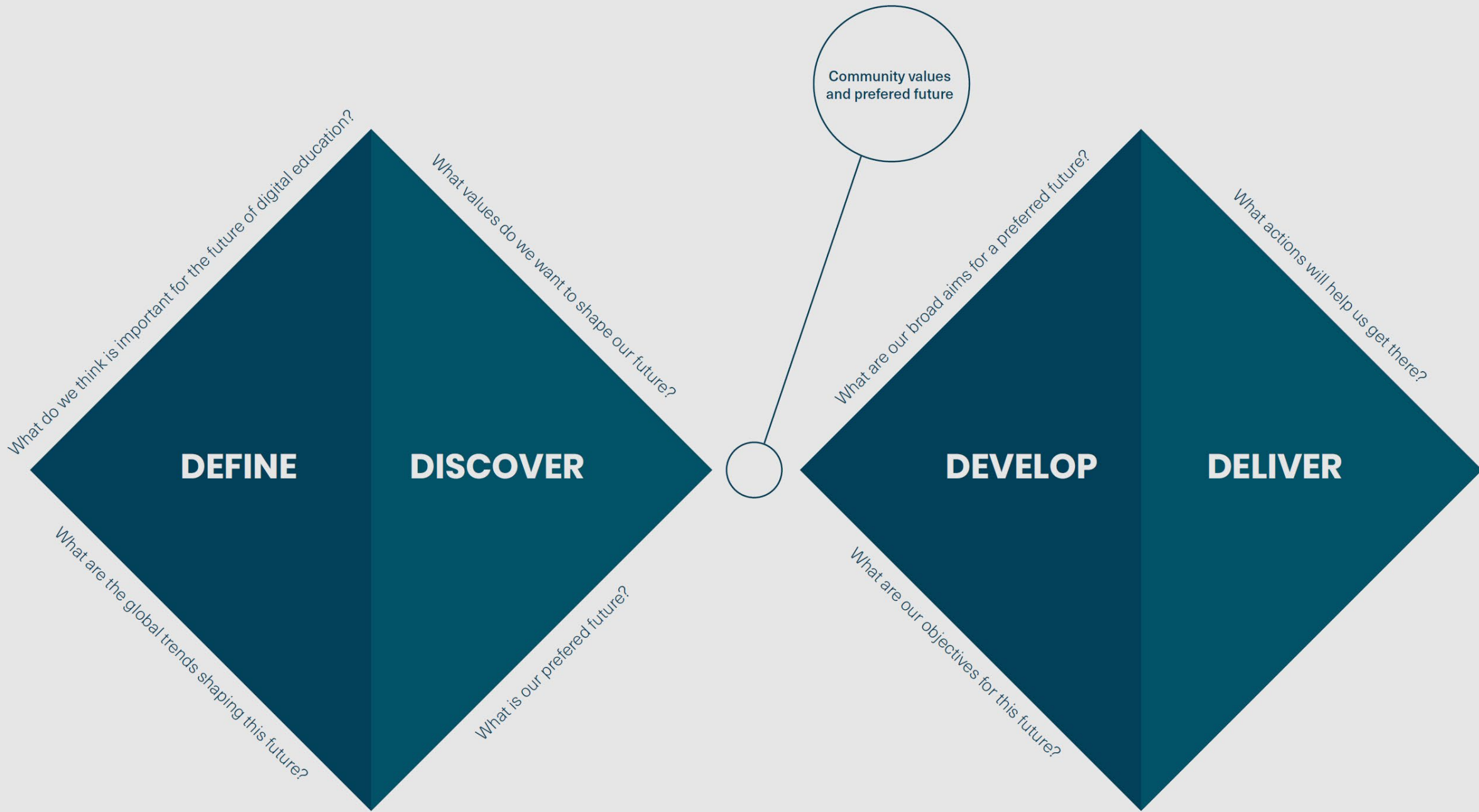
Futures studies is the systematic study of possible, probable and preferable futures including the worldviews and myths that underlie each future.

In the last fifty or so years, the study of the future has moved from predicting the future to mapping alternative futures to shaping desired futures.

Inayatullah, Sohail (2013) Futures Studies: Theories and Methods. Online.



Aim: not to predict, but to co-design a values-based future for digital education at Edinburgh



1 Scoping:

- Taking the community pulse
- Reviews and projections

2 Scenario development:

- Scoping plausible future worlds

Defining values

Defining a preferred future

Drafting aims and actions

3 Testing aims and actions:

- Student panel

- Academic expert panel

- Children's panel

4 Finalising aims, insights and recommendations

Scoping: taking the community pulse via events



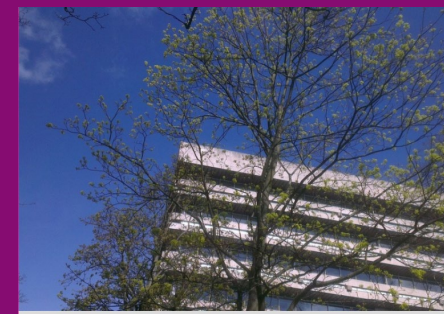
Near Future Teaching Collider



Digital and material design, the uCreate Studio, and Near Future Teaching



Blockchain: designing the future of value and credit



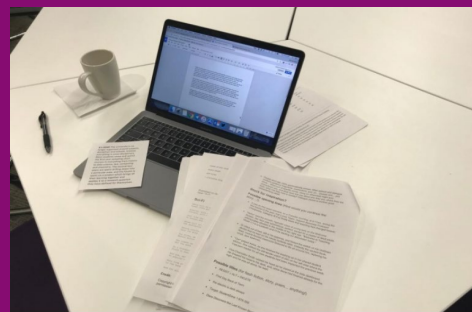
What the future of teaching should look like: discussions with the BME Liberation Group at Edinburgh University



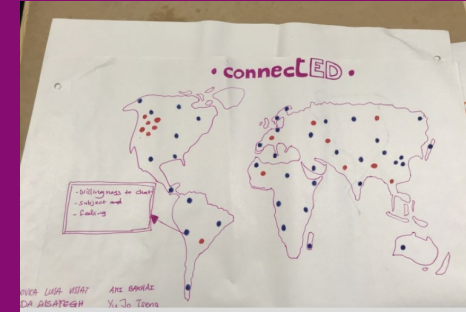
Virtual Reality event at the uCreate Studio: the role of VR in reducing risk and building empathy



Near Future Library Competition



Future Fictions Texts: Works Emerging from a Recent Workshop Imagining the Future of the University



Internet of (Campus) Things: summary of a recent Festival of Creative Learning event



Learning Analytics: What has data ever done for me?



Near Future Teaching Focus Group: Medical Students



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Edinburgh Futures Institute

OPEN TO ~~ALL~~ RICA

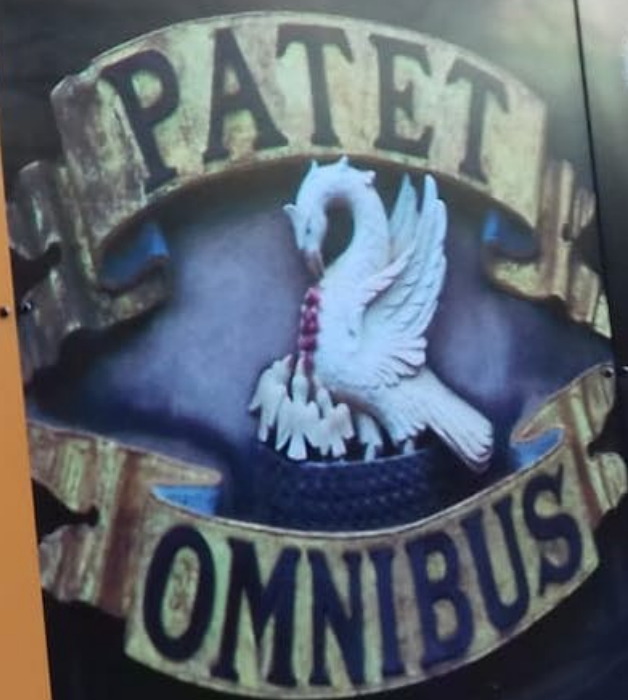
Innovation and inclusivity are etched into this building's bricks and mortar.

Before it stood on this site, the original Royal Infirmary was funded by public appeal. Its four beds tended the city's sick and poor. The hospital witnessed many medical breakthroughs, including the first ever operations to use chloroform. After moving here in 1879, it was home to the UK's first living kidney transplant and the world's first coronary care unit.

These world-changing advances - accessible to everyone - involved staff, students and graduates of the University of Edinburgh. The Edinburgh Futures Institute will continue this spirit. As it makes its home here, the building's motto will guide all that happens within.

On the exterior, written in stone, is the Latin inscription: **Patet Omnibus**. It means 'Open to All'.

www.efi.ed.ac.uk
ing futures



FORGING UNEXPECTED
COLLABORATIONS

EDINBURGH FUTURES INSTITUTE

www.efi.ed.ac.uk

#reinventingfutures

Scoping: taking the community pulse via interviews



DISTANCE

https://media.ed.ac.uk/media/Distance/1_aor20gye

Defining values





Scoping: reviews and projections



Future Teaching trends:

EDUCATION & SOCIETY

Michael Gallagher and Siân Bayne

Centre for Research in Digital Education
Moray House School of Education
The University of Edinburgh

Introduction

*This review partners with **Future Teaching trends: science and technology**, providing a short overview of the global societal shifts likely to impact on education over the coming few decades, in order to inform the Near Future Teaching project. It is not a comprehensive review: rather it highlights a few key areas we feel are of particular relevance.*



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of EDINBURGH

Future Teaching trends:

SCIENCE & TECHNOLOGY

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Introduction

*This review partners with **Future Teaching trends: education and society**, highlighting the technological trends likely to have significant implications for the future of higher education over the medium term, and those we should attend to in thinking about near future teaching. This is not a comprehensive review of technological shifts, but rather a brief overview of a few areas chosen for their potential high impact.*



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Social futures

Global and local demographic shifts

Ageing population and lifelong learning

Automation of work

'Unbundling' of HE

Urbanisation

Inclusion

Trust in public institutions

Technological futures

Datafication of society

Surveillance

AI

Educational neurotechnology

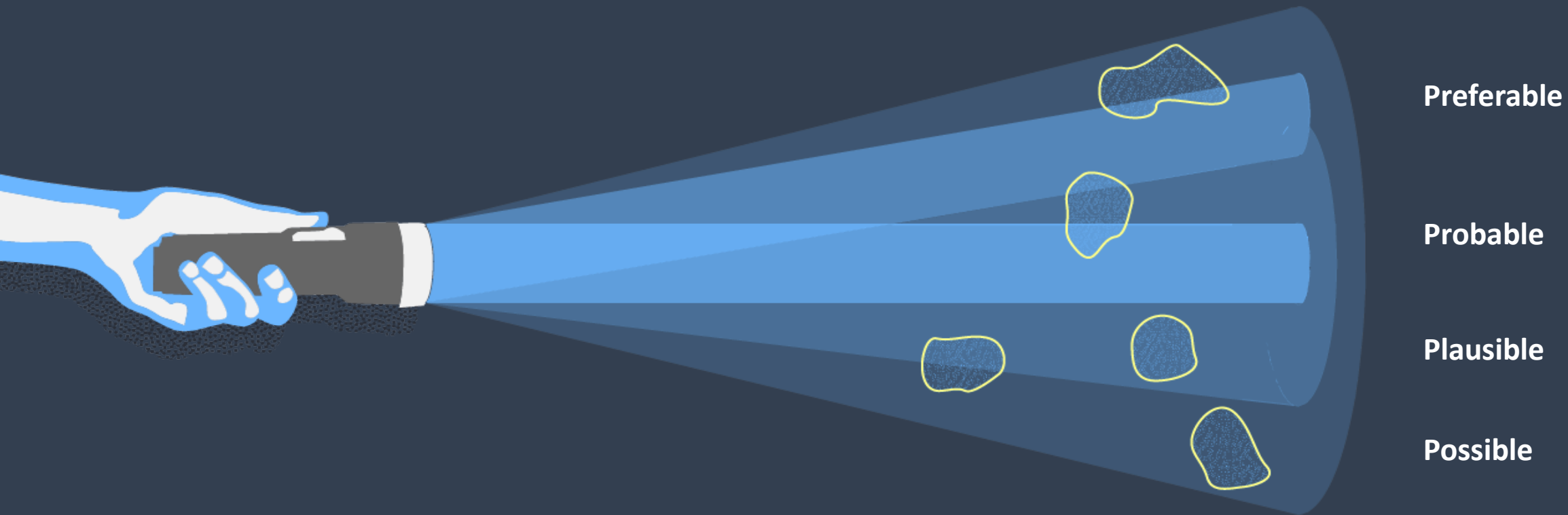
Cognitive enhancement

Virtual realities

New forms of value



Defining a preferred future





Data, data, everywhere

Datafication

Marketisation

Tight borders

Increased competition

Value 1: experience over assessment

Analytics replace much assessment activity opening up more time for experiential and project-based learning.

Value 2: diversity and inclusion

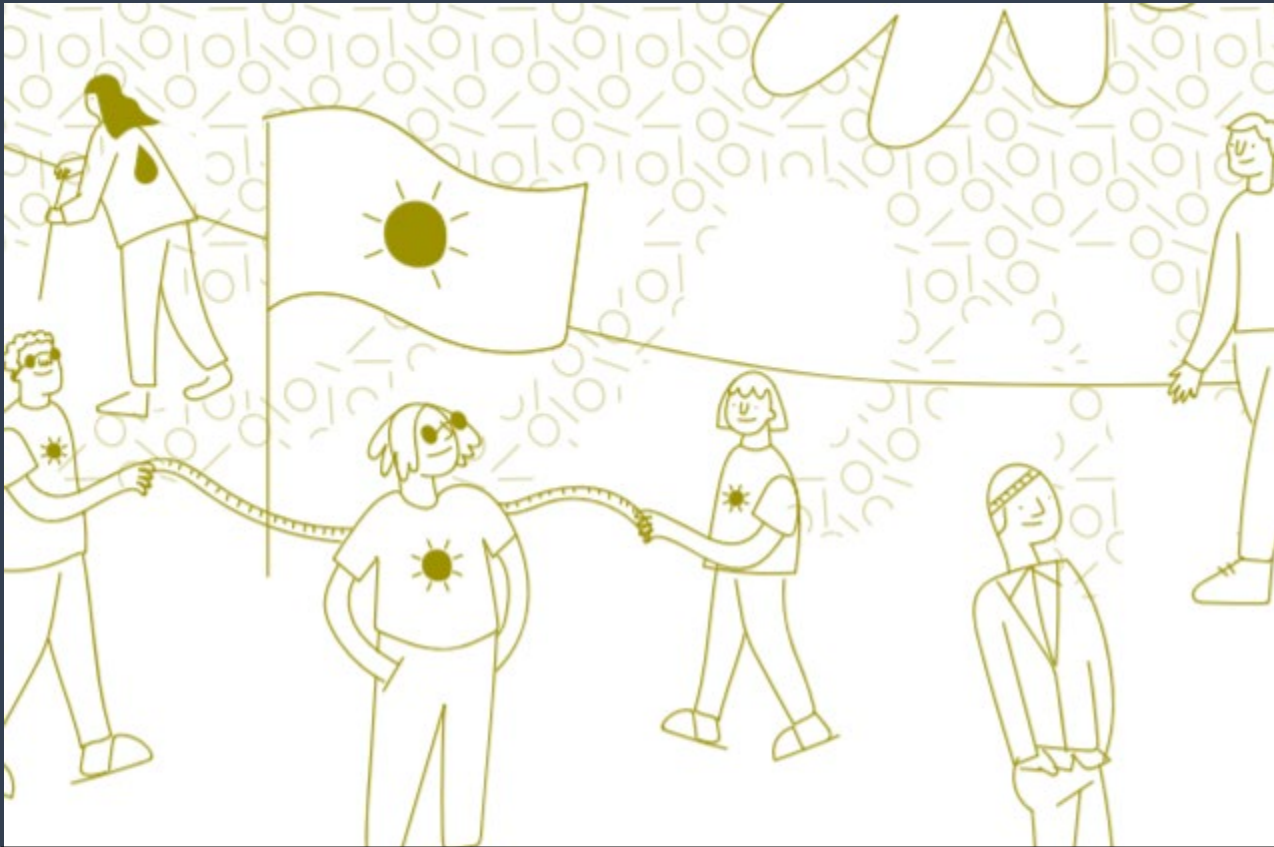
The university has built technologies which curate highly diverse peer groups based on student profiles.

Value 3: relationships over instruction

Artificial agents help students with routine enquiries, creating more time for meaningful interaction between academics and students.

Value 4: participation, transparency

A focused programme of work on explainable AI, data ethics and student data literacy has helped create a culture of algorithmic accountability.



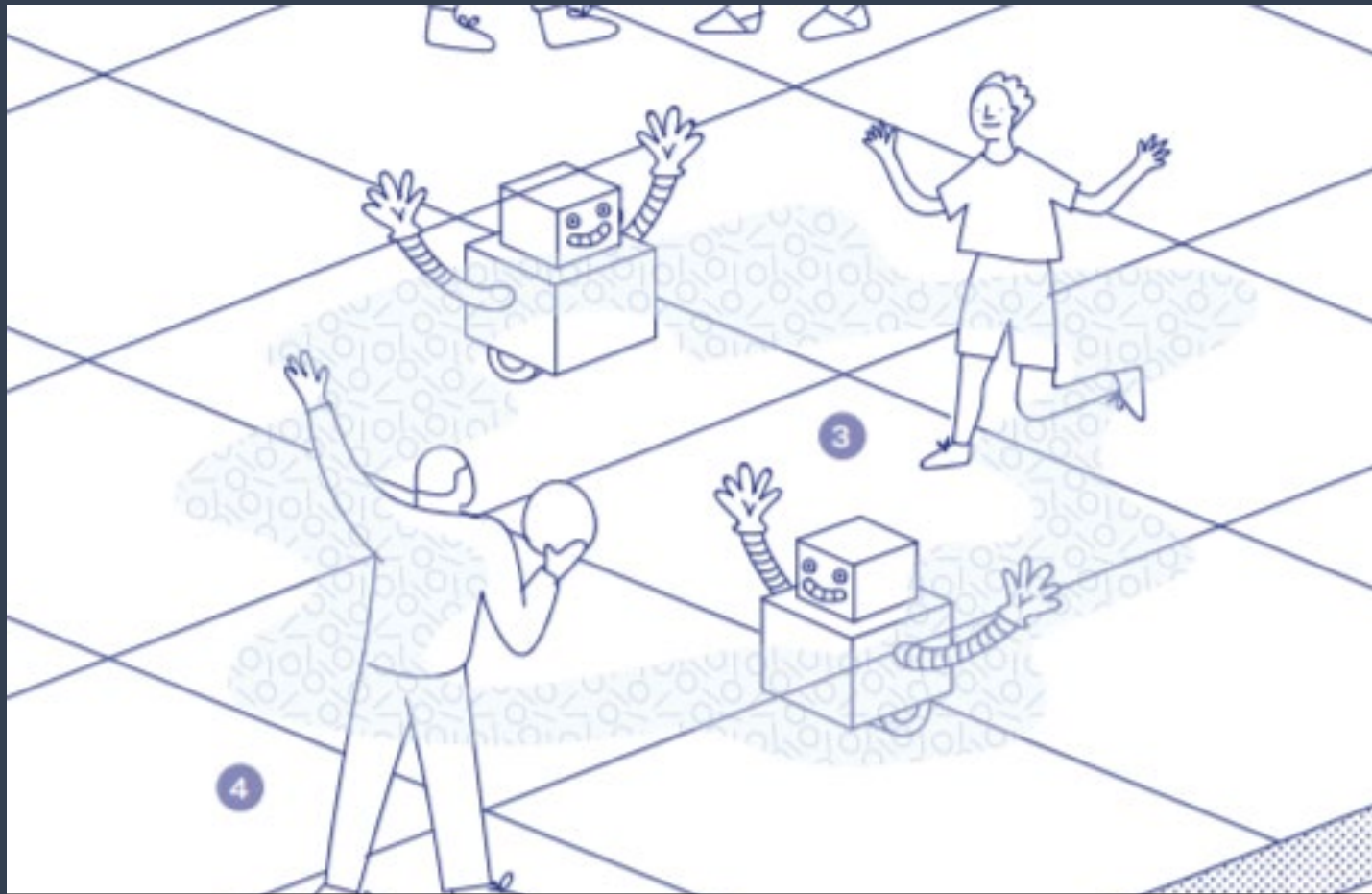
A new ecology

Climate change

Data-driven decision making

Compulsory renewability

Compassion and global justice



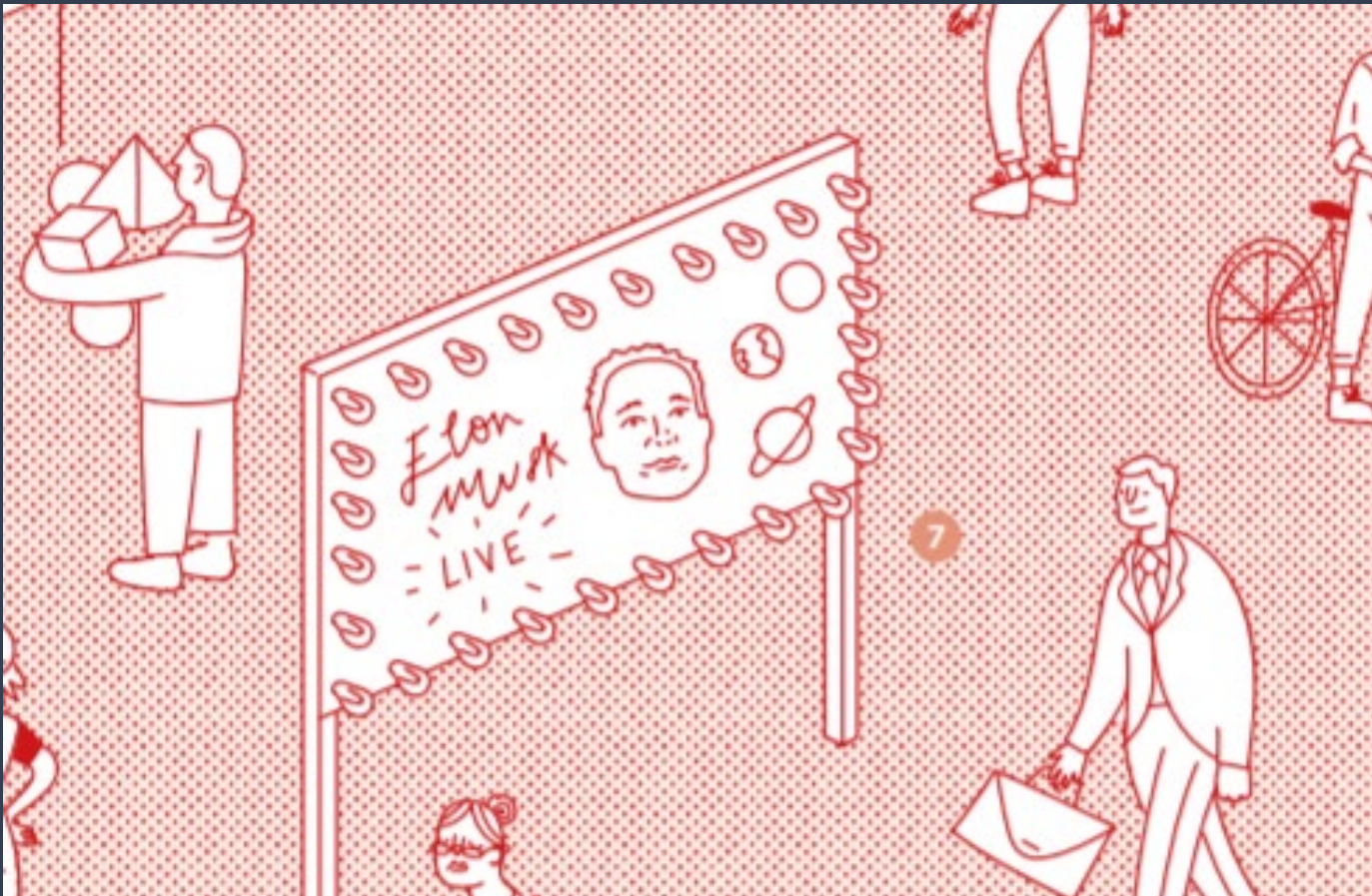
Human-machine interdependence

Automation

Human-machine hybridity

Personal missions

Leisure



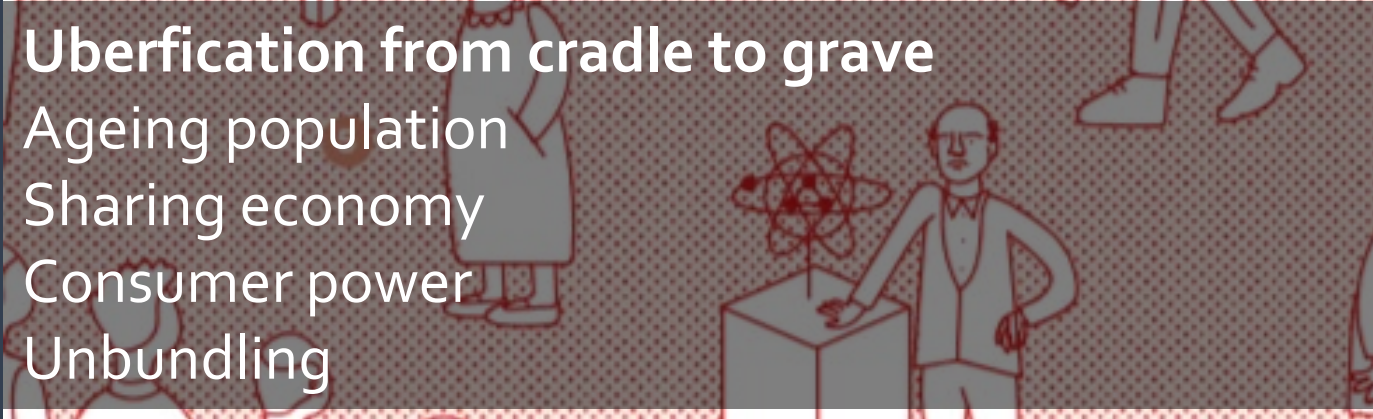
Uberfication from cradle to grave

Ageing population

Sharing economy

Consumer power

Unbundling



A preferred future for digital education which is:

Community focused



Aim: digital education with the University community at its heart.

Post digital



Aim: education which recognises that technology is fully embedded in daily life.

Data fluent



Aim: digital education that understands data, data skills and the data society.

Playful and experimental



Aim: enabling creative, academic and student-led R&D for digital education.

Assessment orientated



Aim: digital education with a focus on assessment and feedback.

Boundary challenging



Aim: digital education that is lifelong, open and transdisciplinary.



1. Community-focused: digital education with the university community at its heart

Put the student and staff experience at the centre of all educational technology development, decision-making and procurement.



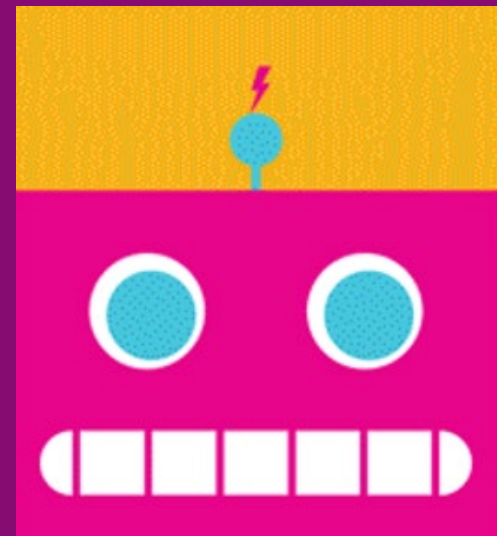
2. **Post-digital:** education which recognises that technology is fully part of daily life

Define and embed a re-worked understanding of 'contact time' into workload models and course descriptors, which takes account of student mobility, distance education and flexible patterns of study.



3. **Data fluent:** digital education that understands data, data skills and the data society

Balance development of data skills with other human capacities for wellbeing and employability in a future of automated work, by building cross-university courses to develop student creativity, criticality, problem-solving and collaboration.



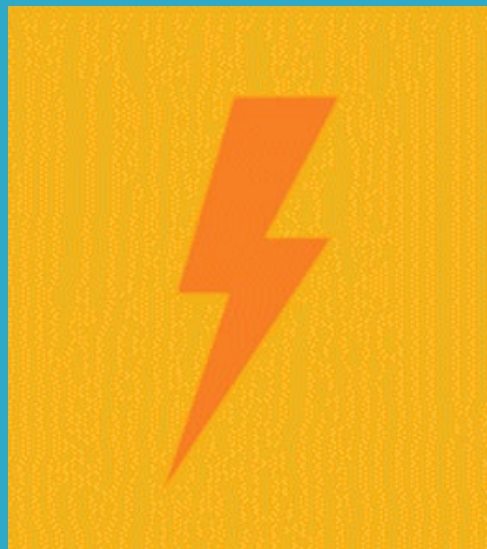
4. **Playful and experimental:** enabling creative academic and student-led R&D

Invest to give academics more time to be creative and risk-taking in their use of digital education.



5. Assessment-oriented: digital education with a focus on assessment and feedback

Launch a cross-university, discipline-sensitive programme of work to increase diversity in forms of assessment, including multimodal (video, audio, image, making) and experiential forms (projects, blogs, reflections, reports).



6. **Boundary-challenging:** digital education that is lifelong, open and transdisciplinary

Open all course content to all enrolled students and continue to develop and support existing work in open education.



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<http://www.nearfutureteaching.ed.ac.uk/>