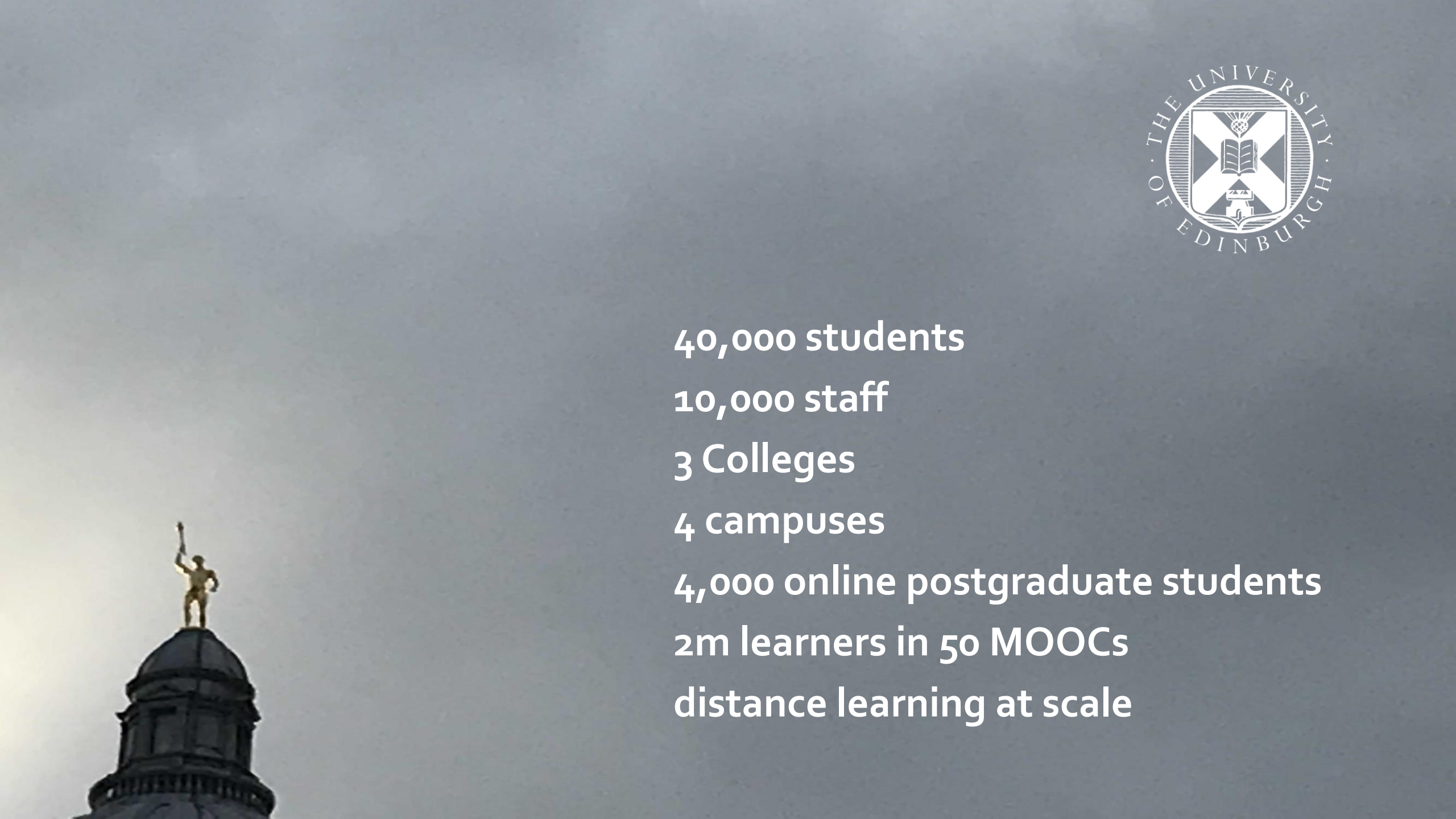
Siân Bayne
University of Edinburgh
@sbayne



40,000 students

10,000 staff

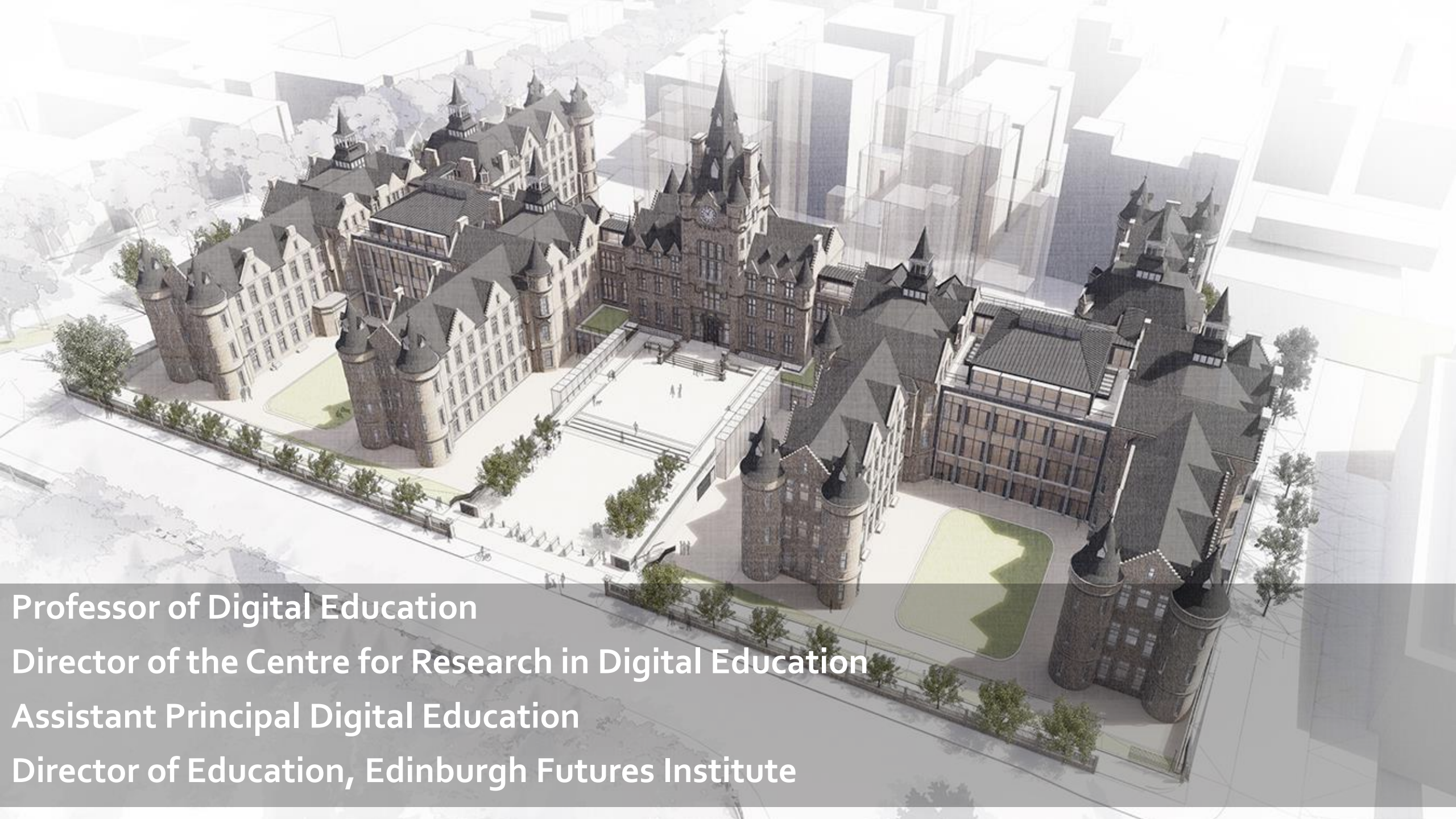
3 Colleges

4 campuses

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)

Facer, Keri (2016) Using the Future in Education: Creating Space for Openness, Hope and Novelty in H. E. Lees, N. Noddings (Eds.), *The Palgrave International Handbook of Alternative Education*

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."

Hamilton, Edward C. and Norm Friesen (2013) Online Education: A Science and Technology Studies Perspective. *Canadian Journal of Learning and Technology*. 39 (2).

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.

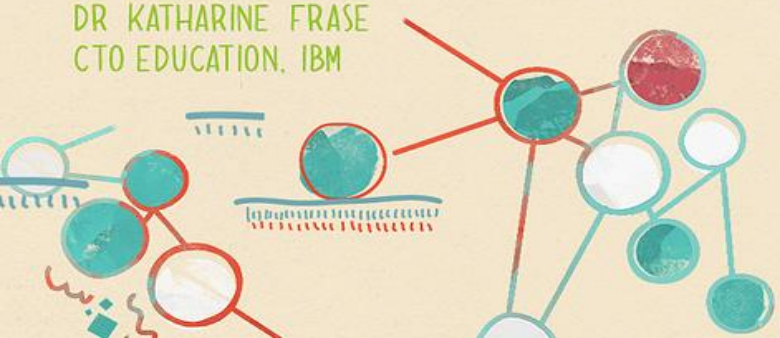
THE CLASSROOM OF THE FUTURE WILL LEARN ABOUT INDIVIDUAL STUDENTS OVER THE COURSE OF THEIR EDUCATION AND HELP THEM MASTER THE SKILLS CRITICAL TO MEETING THEIR GOALS.

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

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

"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



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.

IBM

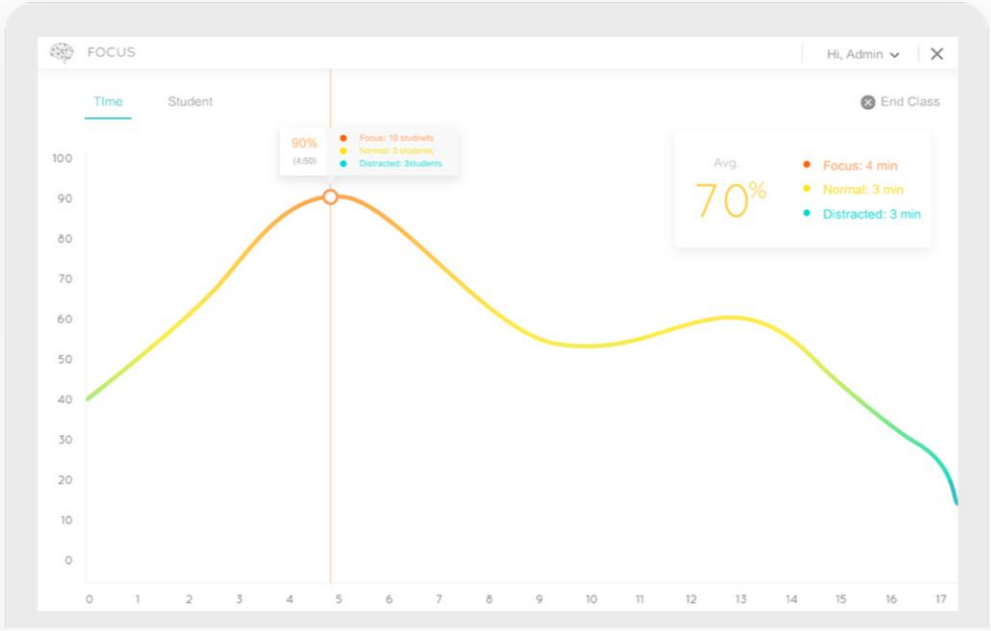
BrainCo
YOUR BRAIN CONTROLS EVERYTHING

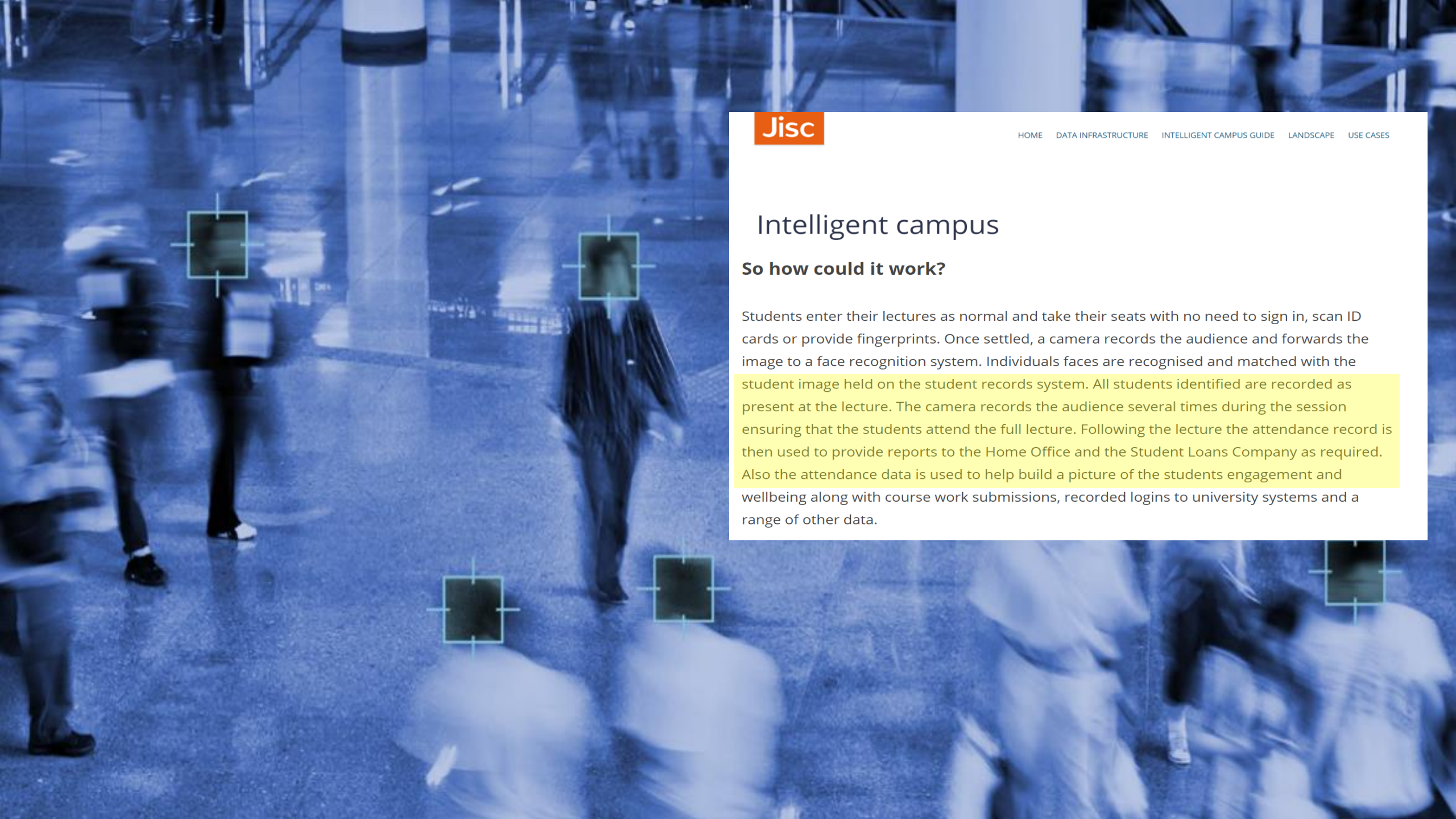
HOME PRODUCTS ABO

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.





Jisc

HOME DATA INFRASTRUCTURE INTELLIGENT CAMPUS GUIDE LANDSCAPE USE CASES

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.

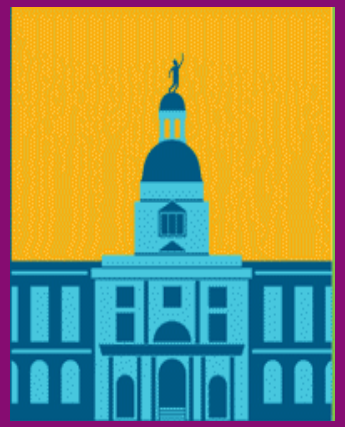
Co-designing the future

Co-designing a values-based future for digital education

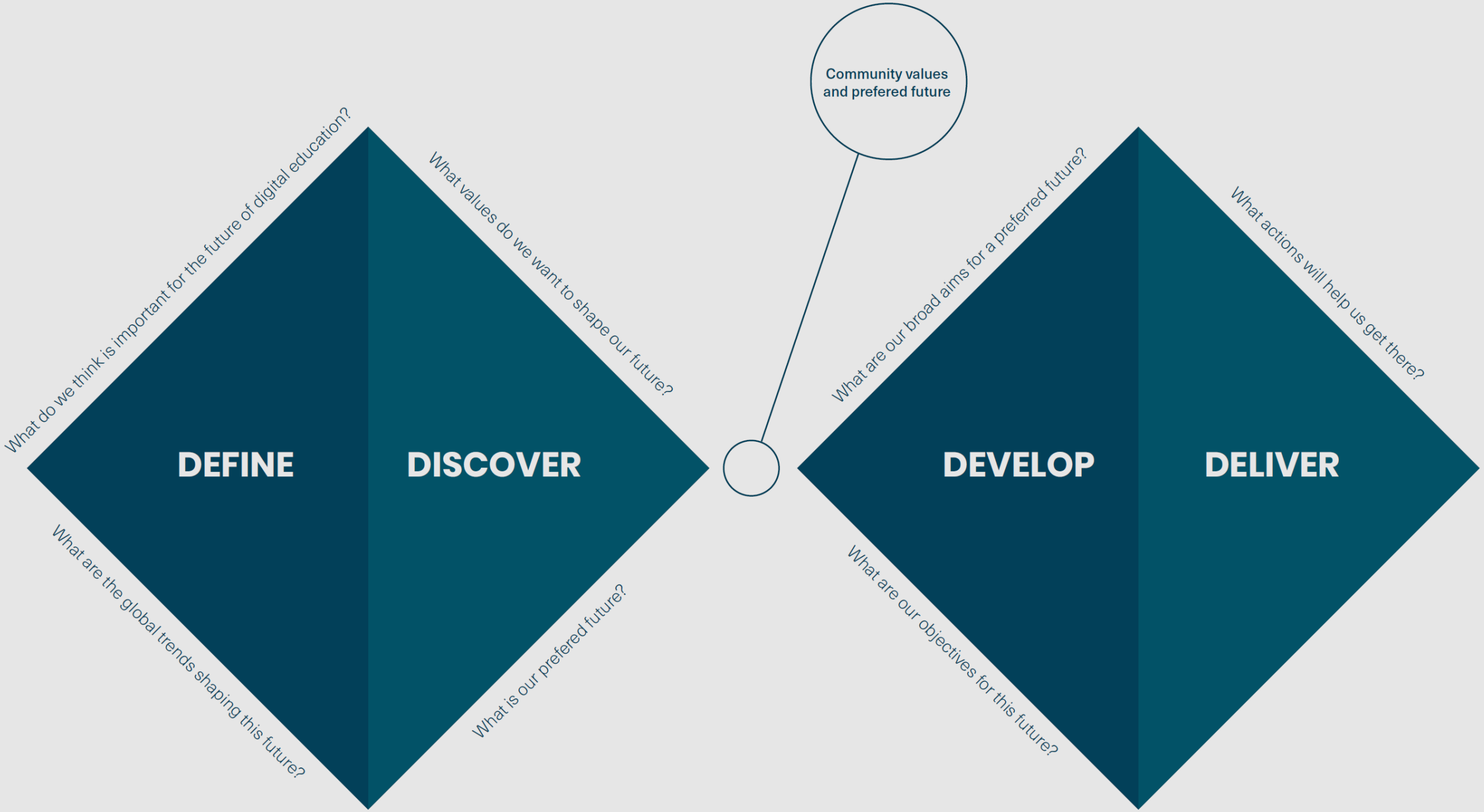
Futures studies is the systematic study of possible, probable and preferable futures including the worldviews and myths that underlie each future.

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


Community values and prefered future
What do we think is important for the future of digital education?
What values do we want to shape our future?
DEFINE
DISCOVER
What are the global trends shaping this future?
What is our prefered future?
What are our broad aims for a preferred future?
What actions will help us get there?
DEVELOP
DELIVER
What are our objectives for this future?

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

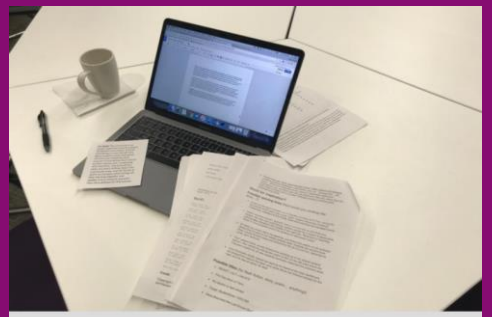
Digital and material design, the uCreate Studio, and Near Future Teaching

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


THE UNIVERSITY of EDINBURGH
Edinburgh Futures Institute
OPEN TO RICH
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
CCTV
PATET
OMNIBUS
FORGING UNEXPECTED
COLLABORATIONS
www.efi.ed.ac.uk

Scoping: taking the community pulse via interviews

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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Future Teaching trends:

SCIENCE & TECHNOLOGY

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: 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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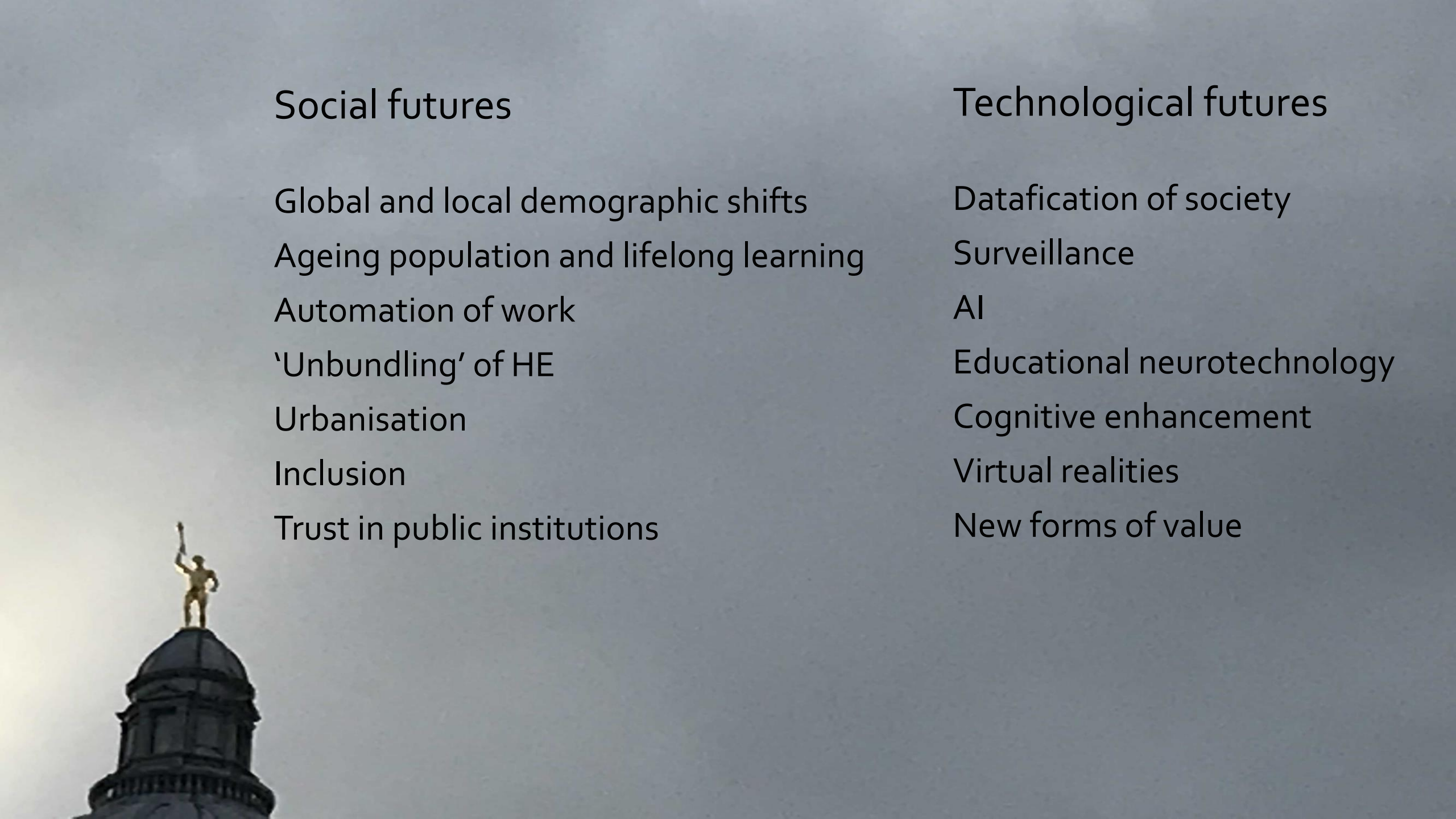


Social futures

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

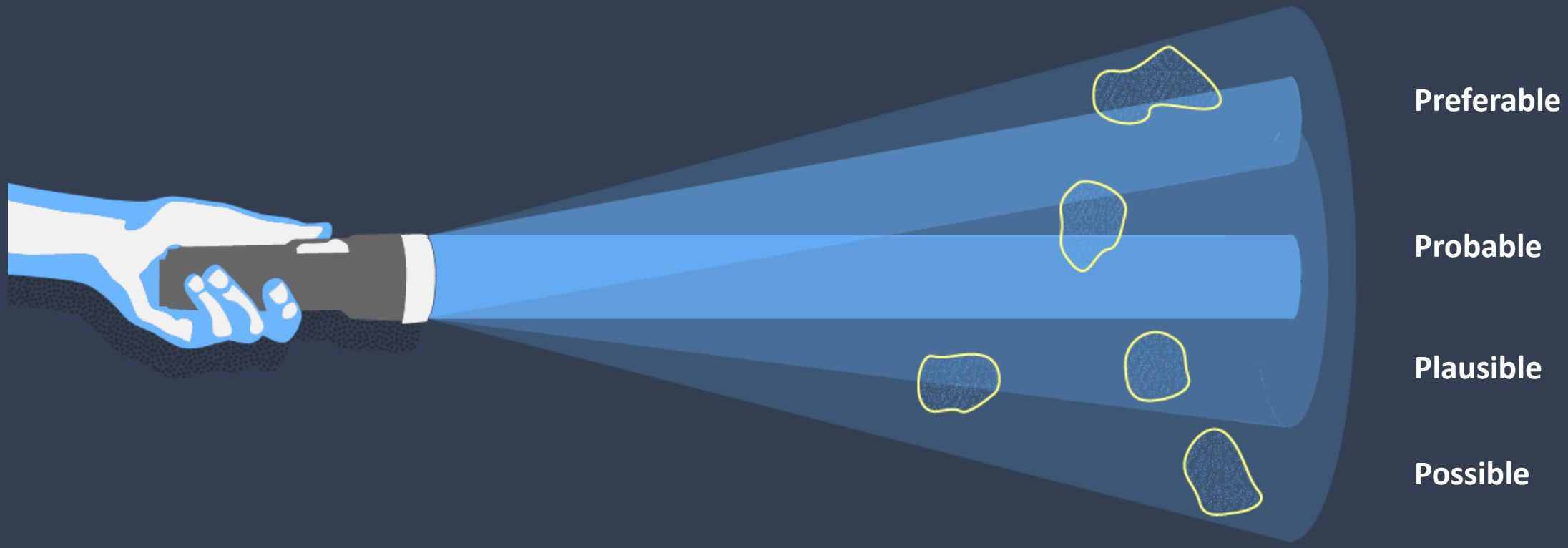
Educational neurotechnology

Cognitive enhancement

Virtual realities

New forms of value

Defining a preferred future



Data, data, everywhere
Datafication
Marketisation
Tight borders
Increased competition

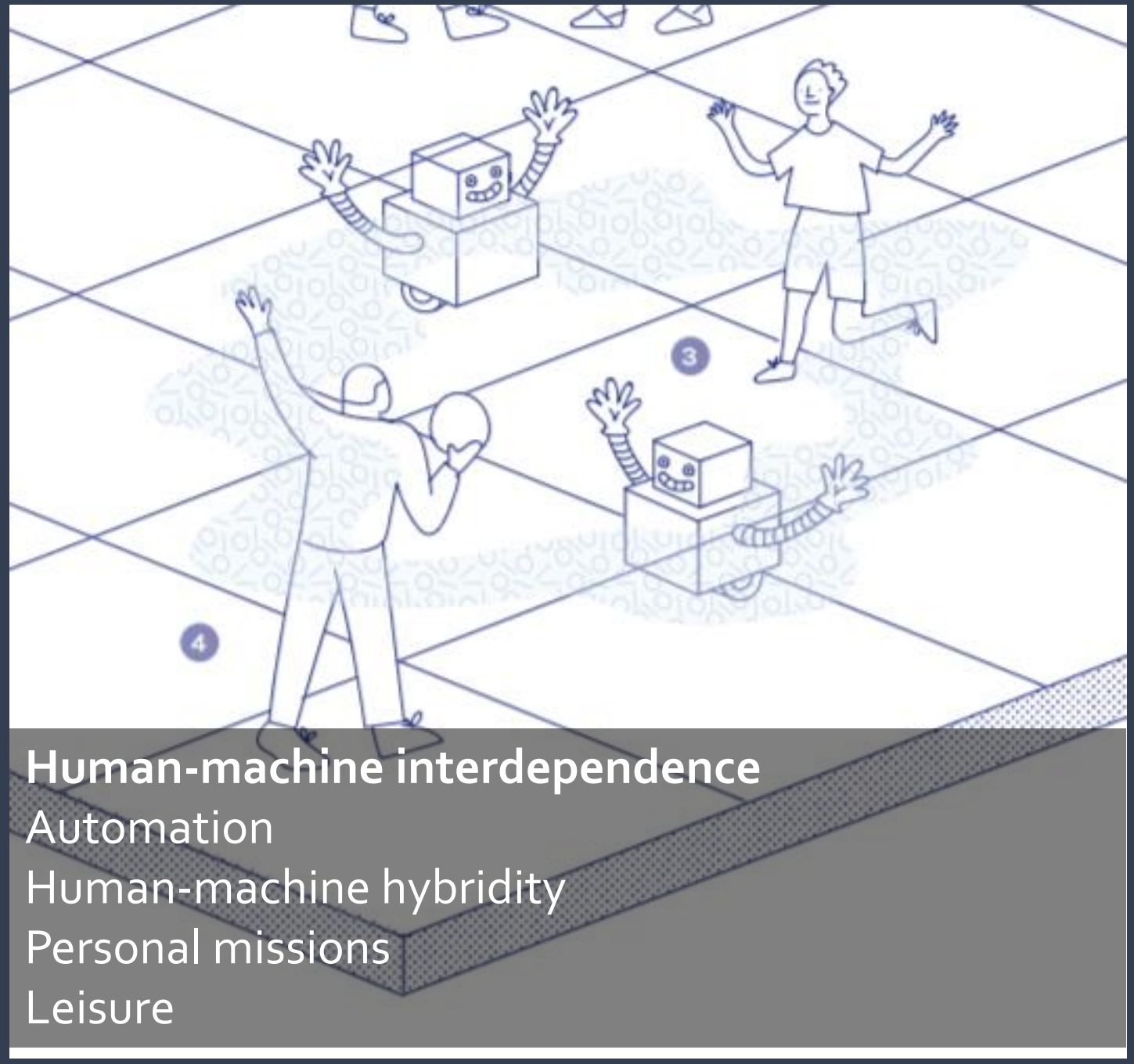
Value 1: experience over assessment
Analytics replace much assessment activity opening up more time for experiential and project-based learning.

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



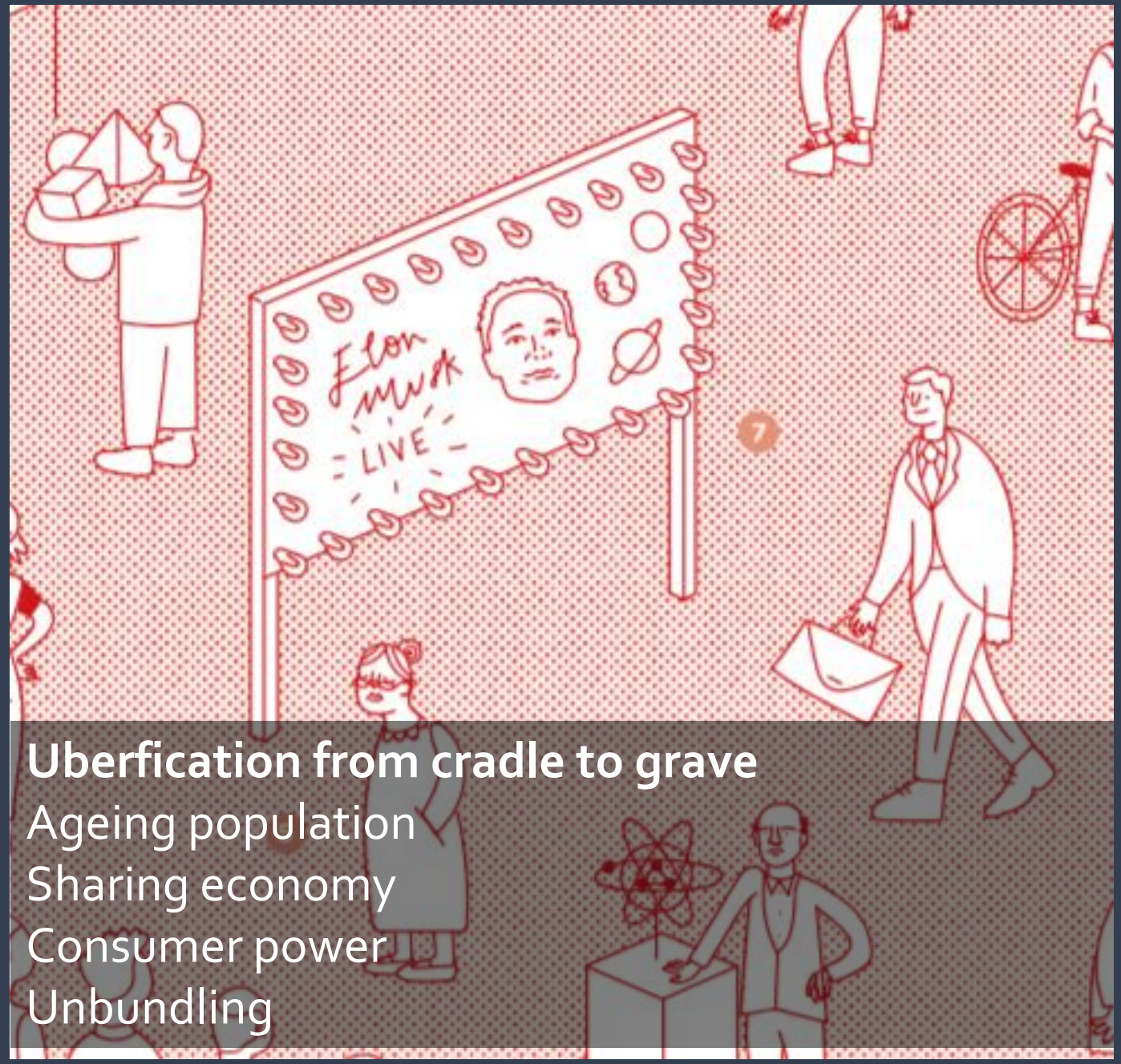
Human-machine interdependence

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

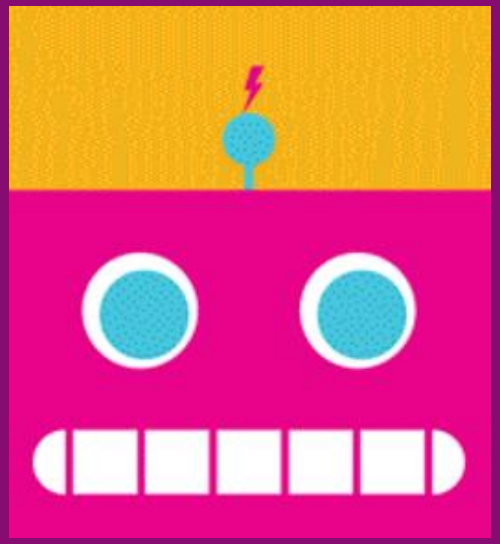
    Put the student and staff experience at the centre of all educational technology development, decision-making and procurement.

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/