

A photograph of two young men looking at a tablet. The man on the left is wearing glasses and has headphones around his neck. The man on the right is wearing a plaid shirt. They are both looking intently at the tablet held by the man on the left. The background is a plain, light-colored wall.

Education 4.0

Martin Hamilton, Futurist, Jisc



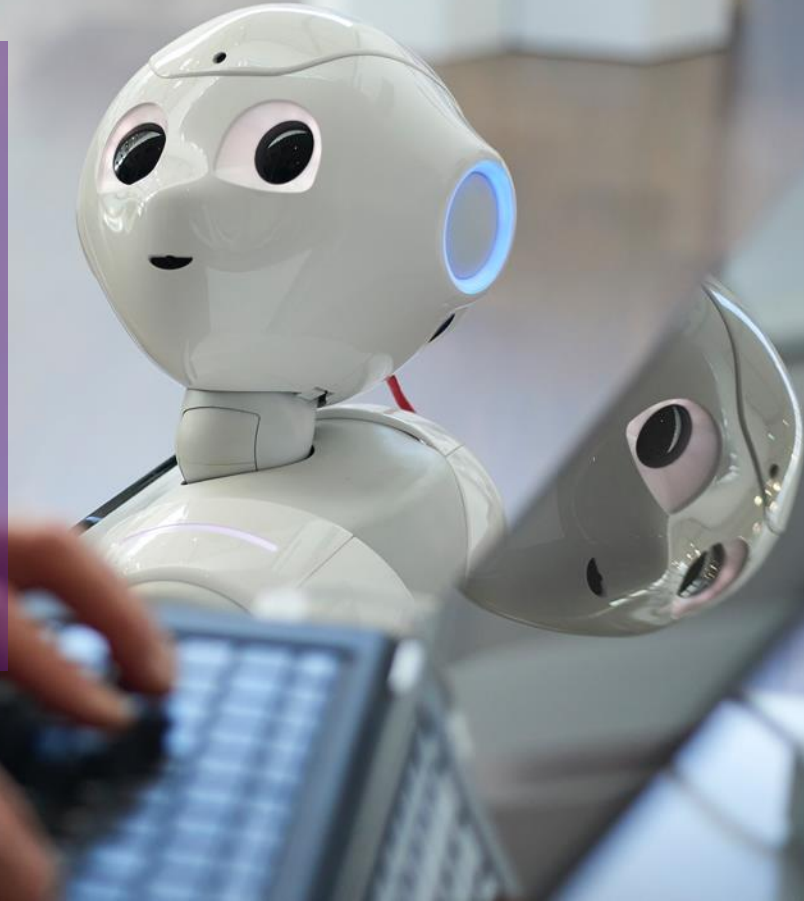
1. Why Education 4.0 ?
2. How will it change learning and institutions ?
3. Kicking off a dialogue
4. Building the infrastructure for Education 4.0

1. Why Education 4.0 ?

A revolution that knows no collars

95% of accounting tasks,
and 94% of paralegal jobs
are predicted to be
impacted by technology -
University of Oxford

“The robots are here to give
us a promotion” - Gartner



So what is “Education 4.0” ?

Institutions are preparing our learners for an Industry 4.0 workplace

Transformation of institutions themselves, embracing Industry 4.0 technologies

Student digital experience – digital insights survey

“Only 41% of students in UK universities and colleges agreed that their course prepares them for the digital workplace.”

Led to this in the ministerial foreword:



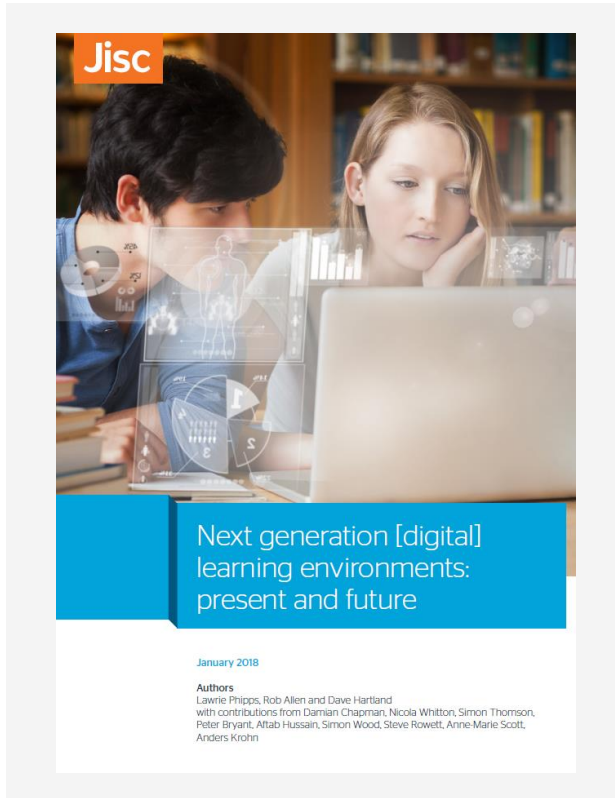
“Most importantly, students continue to express concerns that their courses do not fully prepare them for a digital workplace. This issue must be addressed as a matter of urgency if universities and colleges are to deliver for students, employers and the country as a whole.”

Sam Gyimah Joint Minister for Higher Education at the Department for Business, Energy and Industrial Strategy and the Department for Education

https://repository.jisc.ac.uk/6967/1/Digital_experience_insights_survey_2018.pdf

2. How will it change learning and institutions ?

Beyond the human?



<https://www.jisc.ac.uk/rd/projects/next-generation-digital-learning>



Scenario 1: The unbundled institution?

In one future, our universities and colleges are little more than learning hotels and concierges

Scenario 2: The immersive institution?

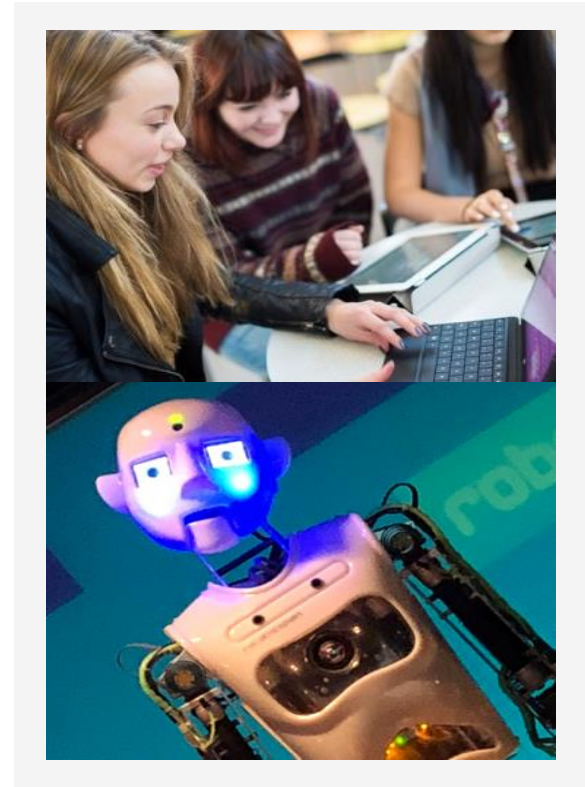
Learning is immersive and interactive and most importantly responsive to your students' needs



3. Kicking off a dialogue

Big ideas transforming teaching and learning

- **Teaching transformed** – from sage on the stage to guide on the side, the end of lecturing's 1000 year reign?
- **Personalised adaptive learning** – an individualised approach taking learner diversity, performance & behaviour into account
- **Quantified mastery** – from high stakes summative tests to AI assessed micro-credentials, enabling truly life-long learning
- **Cybernetic symbiosis** – AI automating the routine tasks and activities, freeing people to add the human soul/spark
- **Fluid campus** – intelligent, flexible campuses, responsive to student interactions
- **Pioneers and settlers** – cultivating the “settlers” who can help institutional pioneers embed new working practices/ technologies
- **Civic responsibility 4.0** - universities and colleges playing a key role in shaping the new society

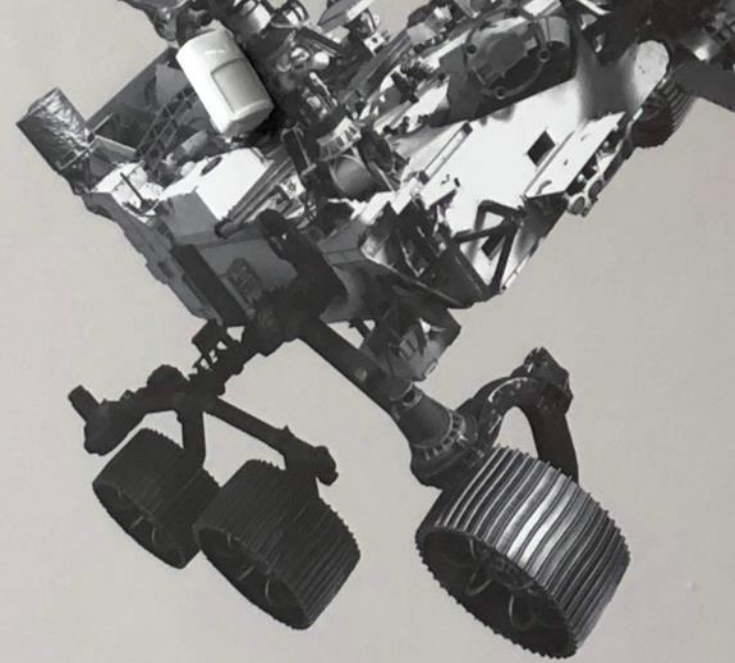


1. Teaching transformed

From sage on the stage to guide on the side,
the end of lecturing's 1000 year reign?

Taking back control of learning

Putting learners in the driving seat, taking responsibility and ownership of their learning strategy

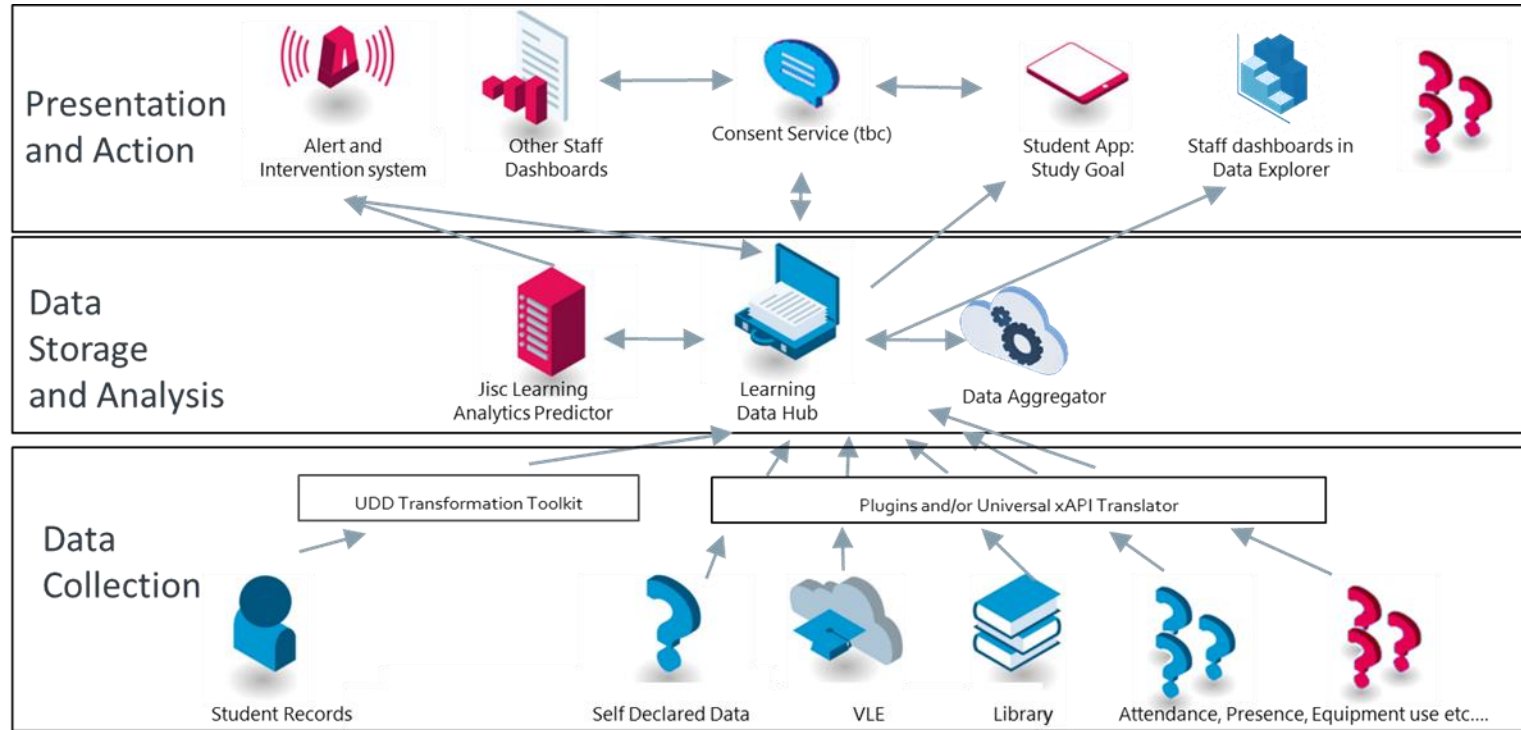


Personalised adaptive learning underpinned by transformed teaching

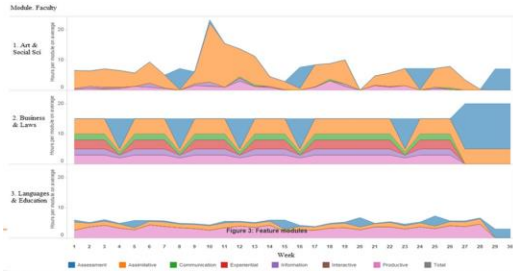
4. Building the infrastructure for Education 4.0

Jisc Learning Data Hub

Data infrastructure underpinning Education 4.0



Beyond learning analytics



Nguyen, Q., Rienties, B., Teetzel, L. (Submitted: 17-10-2016). Unravelling the dynamics of instructional practice: A longitudinal study on learning design and VLE activities. Paper submitted to LANC2017.

Curriculum analytics

DETERMINANT & RISK PROFILE/CORRELATION

(Inspired by "Suicide After Unsettled: A Guide" and based on Ben's story)

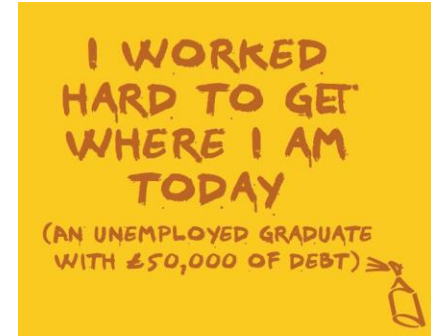
NAME	Ben
SEX	Male
YEAR	1st
TRANSITION YEAR?	<input checked="" type="checkbox"/>
PRE-EXISTING HEALTH ISSUES?	<input checked="" type="checkbox"/>
CLEARING (NOT FIRM/INSURANCE CHOICE)	<input checked="" type="checkbox"/>
STRUGGLING ACADEMICALLY?	<input checked="" type="checkbox"/>
HEALTH CONCERN REPORTED?	<input checked="" type="checkbox"/>



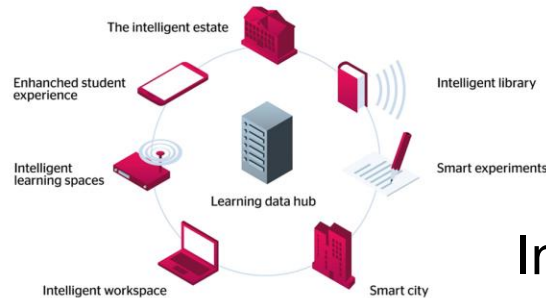
SUPPORT/WELLBEING & HEALTHCARE	ACADEMIC
Referred to Wellbeing?	Stole and student not met
Missing healthcare appointments	Exam/assessments missed
PARENTS/SCHOOL REFERENCE	Coursework deadlines missed
Learning difficulty concerns	Quality of work poor/ineffective
Recent bereavement/losses	Went to lecture in study groups
Health concerns	Missed academic events
HALLS OF RESIDENCE	FACULTY/ADMIN & IT
Hall struggles/fail to make contact	Not registered/data registration
Behaviour/operation changes	Did not study/withdrawal process
Involvement in hall incidents	Multi/late fees unpaid
Missed campus events (if catered)	Others submit work in early hours
Official paper must uncollected	1st-Card stage concerns
Missed social events	Email access concerns
STUDENTS UNION/STUDENTS	YOUR IDEAS TO DO THE VULNERABLE:
Non-attendance at events	
Concern over behaviour/incident	
Non-engagement in clubs/Soc's	

Known to the university Seen in college/university Not noticed / not known to apply

Wellbeing analytics



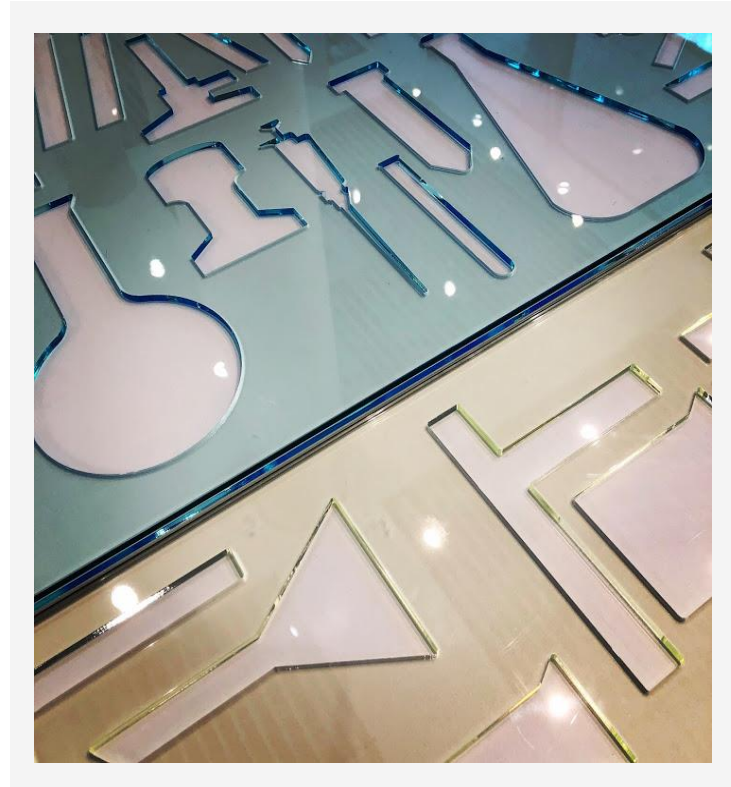
Employability analytics



Intelligent campus

Exploring Research 4.0

- How does research change when Open Access and pre-prints are the norm ?
- What will the long term impact be of Plan S on scholarly communications ?
- How will we use AI as a 'digital research assistant' ?
- What will the impact be on research of near future technologies like DNA based data storage and brain computer interfaces and quantum computing?
- How long will it be before an AI is awarded a Chair ?



Gracias!

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