Digital education: current and future challenges

Professor Beverley Oliver, Deputy Vice Chancellor Education

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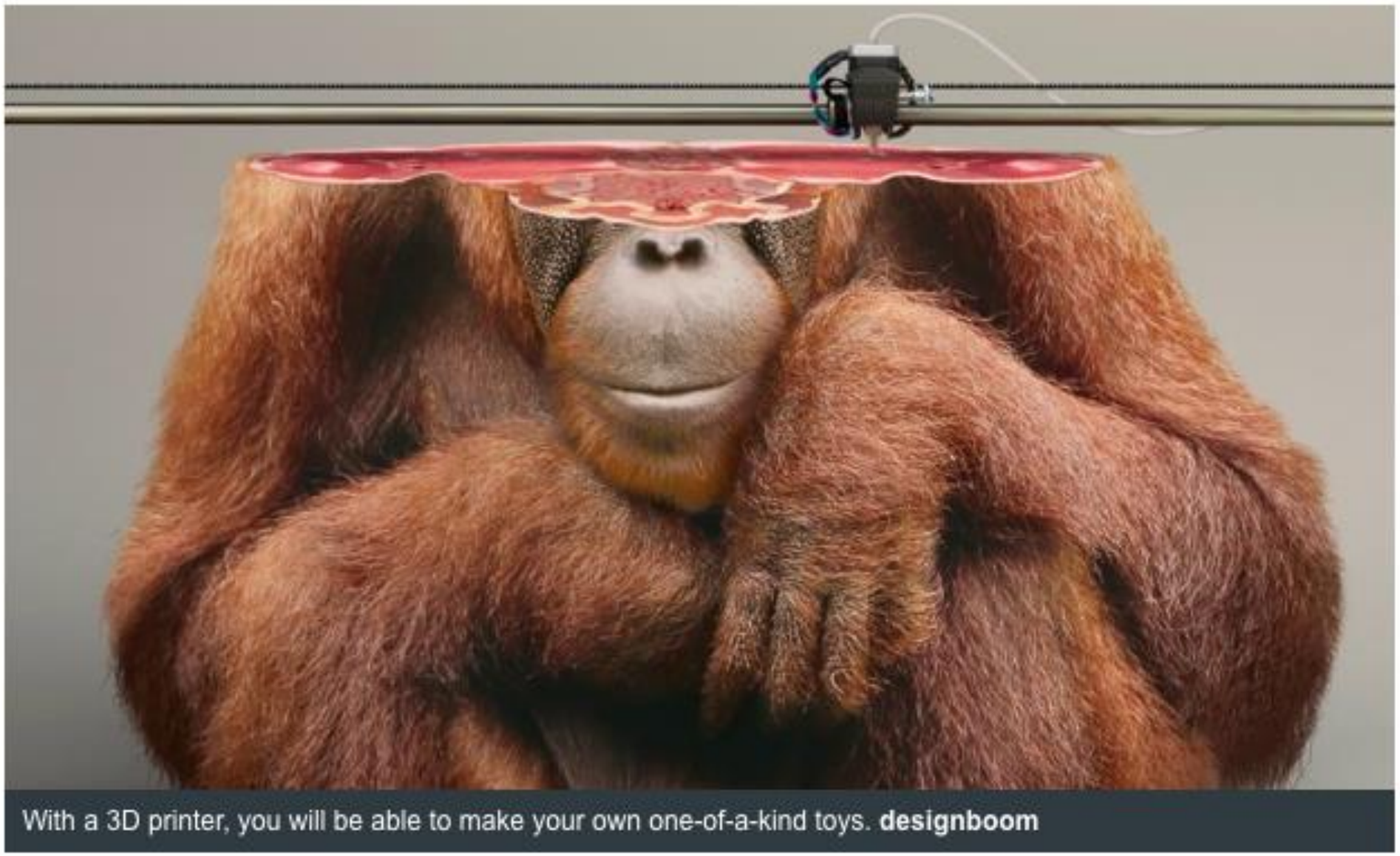
6 new technology rules that will govern our future



With a 3D printer, you will be able to make your own one-of-a-kind toys. **designboom**

…We have already begun to see ways in which computing, sensors, artificial intelligence and genomics are reshaping entire industries, as well as our daily lives. …Technology is creating a new set of rules that will change our very existence.

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Here are six:

1. Anything that can be digitised will be.

2. Your job has a significant chance of being eliminated

3. Life will be so affordable that you won't need a job to survive.
Because of the improvements in the shared cars, a generation is growing up without the need or even the desire to own a car.

4. Your fate will be in your own hands as never before.
Online learning in virtually any field is already free. … With 3-D printers, you can create your own toys. …Yes, you may have a small factory in your garage, and your neighbours may have one, too.

5. Abundance will become a far bigger problem than poverty.
significant degradation of our attention spans is partly attributable to spreading our attention too thin.

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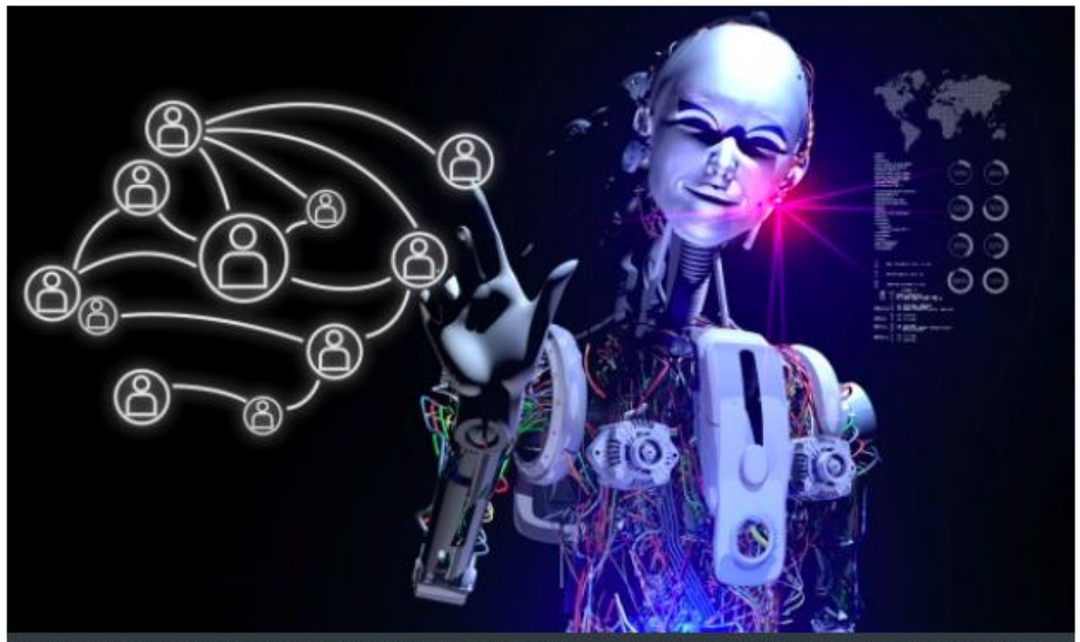
6. Distinction between man and machine will become increasingly unclear.

Georgia Tech's Ashkok Goel says automated 'nano tutors' will take-off in education



Using artificial intelligence to answer students' questions will soon be cheap and widely used in education. **iStock**

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What is online and blended learning?

What is online and blended **living**?

shopping and banking
entertainment - music, television, film, books
communicating with family, friends
travel and holidays - flights and accommodation
professional connections and associations

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tiny.cc/agc

ASSURING GRADUATE CAPABILITIES

ABOUT SPECIFY ENGAGE ASSESS EVIDENCE CREDENTIAL ENHANCE 21C DIGITAL EDUCATION RESEARCH

Curriculum of the future:

Who will be learning?
What will they be learning and **why**, and **how** will we credential their learning?
Where and how will learning occur?

Much of this future is already here….

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What students learn, and why, will be more closely associated with hard and soft skills related to (the unknown future of) work. Providers will be more diverse, and will issue a broader range of micro and macro credentials, and those who earn the latter will be those who can afford them.

Curriculum of the future

Where and how students learn will be increasingly in micro bites on micro devices in online and blended modes - *learning at my place, my (online) spaces and my pace*.

Teaching-related tasks that can be automated will be.

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What students learn, and why, will be more closely associated w 1 hard and soft skills relatedi 2 (the unknown future of) work. Providers will be more diverse, and will issue a broader range 3 micro and macro credentials, and those who earn the latter will be those who can afford them.

Curriculum of the future

Where and how students learn will be increasingly in micro bites on micro devices in online and blended mode 4 *learning at my place, my (online) spaces and my pace*.

5 Teaching-related tasks that can be automated will be.

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What students learn, and why, will be more closely associated with
related
Providers will be more diverse, and will issue a broader range
and those who earn the latter will be those who can afford them.

1 hard and soft skills

2 (the unknown future of) work.

3 micro and macro credentials,

Curriculum of the future

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Employ<u>ability</u> versus employ<u>ment</u>

In disrupted economies,
employability means that students and graduates can **discern, acquire, adapt and continually enhance** skills, understandings and personal attributes that make them more likely to **find and create** meaningful **paid and unpaid work.**

(Oliver 2015 after Yorke 2006)

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What students learn, and why, will be more closely associated with hard and soft skills related to (the unknown future of) work. Providers will be more diverse, and will issue a broader range of micro and macro credentials, and the latter will be those who can [illegible] learn will be [illegible] in [illegible] on micro devices in [illegible] - learning at my place, my pace. [illegible] that can be automated will be.

1 hard and soft skills

- 1 Discipline knowledge
- 2 Communication
- 3 Digital literacy
- 4 Critical thinking
- 5 Problem solving
- 6 Self-management
- 7 Teamwork
- 8 Global citizenship

How can we **judge** and measure these?

How can students **evidence** these?

NOT soft skills

NOT co-curricular

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Computers will reshape the labour market:

- up to 40% of jobs in Australia could be replaced by computers within 20 years
- expanding competition and reducing the costs to consumers **and** reducing the income of workers.

Jobs that involve **low levels of social interaction, creativity, mobility and dexterity** are more likely to be replaced by automation.

Australia's future workforce?

June 2015

ceda
committee for economic development of australia

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Airtasker

freelancer

EXPERT 360

Our challenge:

graduate employability

amidst

rdisrupted economies

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3 micro and macro credentials

Better 21C Credentials

Evaluating the promise, perils and disruptive potential of digital credentials

Curriculum of the future

Signals of achievement
Credit (time and money)

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Unit Code	Unit Title	Year/Semester		Result	CP
CSI5113	Principles of Project Management	061	50	PASS SUPPLEMENTARY	20
MIS5131	Project Information Management V	061	66	CREDIT	15
MIS5135	Managing Projects in Organisations V	061	56	PASS	15
Advanced Standing					
MIS4293	Internet IV			EXEMPT	15
MIS4106	Designing Web Usability IV			EXEMPT	15
MIS4205	Enterprise Applications IV			EXEMPT	15
MIS4195	Web Commerce Development IV			EXEMPT	15
MIS5104	IT Evaluation and Benefits Management V			EXEMPT	15
MIS4121				EXEMPT	15
MIS4108				EXEMPT	15
MIS4511				EXEMPT	15
MIS4118				EXEMPT	15
Course Comp				**Credit Points:**	185
				Period WAM:	56.6
				Course WAM:	56.6

- 1 Discipline knowledge
- 2 Communication
- 3 Digital literacy
- 4 Critical thinking
- 5 Problem solving
- 6 Self-management
- 7 Teamwork
- 8 Global citizenship

Course: V02 CRICOS 049615J

Unit Code		Semester		Result	CP
MIS4195		2	80	HIGH DISTINCTION	15
MIS4205		2	76	DISTINCTION	15
MIS4293		2	71	DISTINCTION	15
MIS4108		1	82	HIGH DISTINCTION	15
MIS4121		1	88	HIGH DISTINCTION	15
MIS5104		1	60	CREDIT	15
MIS4106		2	59	PASS	15
MIS4118		2	65	CREDIT	15
MIS4511	Management Information Systems	052	75	DISTINCTION	15
Course Completed:	14 December 2005			**Credit Points:**	135

Digital credentials warranting outstanding achievement

Deakin Hallmarks

- whole of degree, undergraduate and postgraduate
- on application, awarded by industry-academic panel
- in addition to and unrelated to marks and grades
- for outstanding achievement
- the credential links to the evidence

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Digital credentials warranting learning achieved through life and work experience

Professional Practice Credentials

Professional Practice Masters

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Massive open online courses

- free, or for certificates and credit
- Coursera, edX, Udacity and FutureLearn
- increasingly, university courses on global platforms
- low completion rates - so what?

Nanodegree, Nanodegree Plus, and now Nanodegree Lite?

Udacity's Nanodgree Lite costs $79/month, but it does not include 1:1 support or the 50% money back guarantee

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Coursera Pilots Mentor-Guided Courses

For $248 per course, you can work with a professional who will keep you accountable

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Arizona State University and edX

unit	unit	unit	unit	unit	unit	unit	unit	$20K

on campus, pay up front, credit based on marks

mooc	mooc	mooc	mooc	mooc	mooc	mooc	mooc	$5K

online, buy credit if marks achieved

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Massachusetts Institute of Technology · Columbia University in the City of New York · University of Michigan · R·I·T · IIMB तेजस्वि नावधीतमस्तु · Australian National University

MicroMasters Credentials are a Pathway to Today's Top Jobs

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micro bites
micro devices
start anytime
assessments when ready

can afford them.

Curriculum of the future

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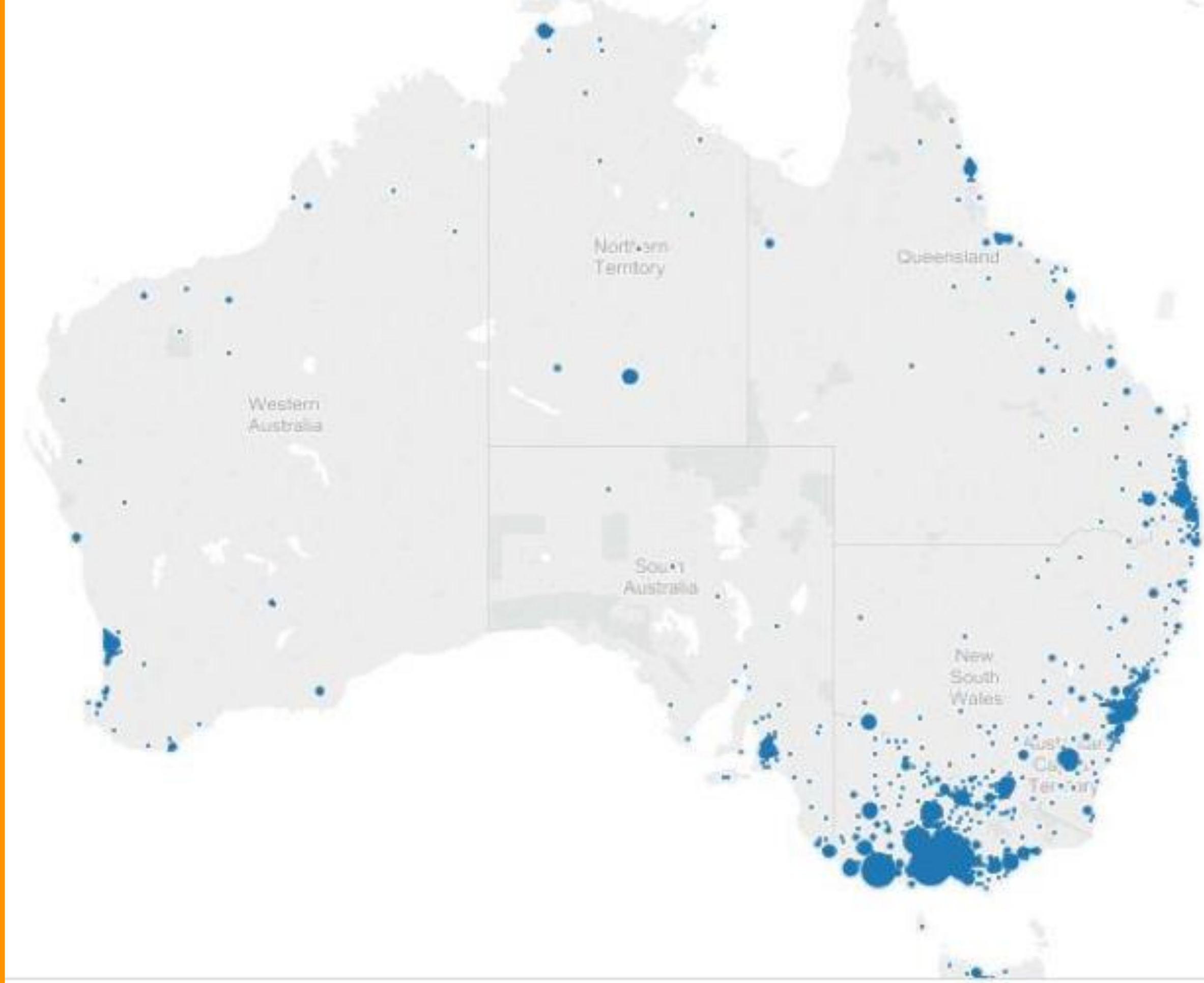
Northern
Territory
Queensland
Western
Australia
South
Australia
New
South
Wales

Where can digitally-enabled education go…beyond where it is now?

- Wrap the university around the student 24/7/365
- Start Anytime - submit your assessment when you're ready
- Flex the learning chunks, find new business models
- Invest in learning design and resources upfront - then manage student engagement, assessment and feedback
- Focus on assessment not teaching
- Redesign the campus learning experience

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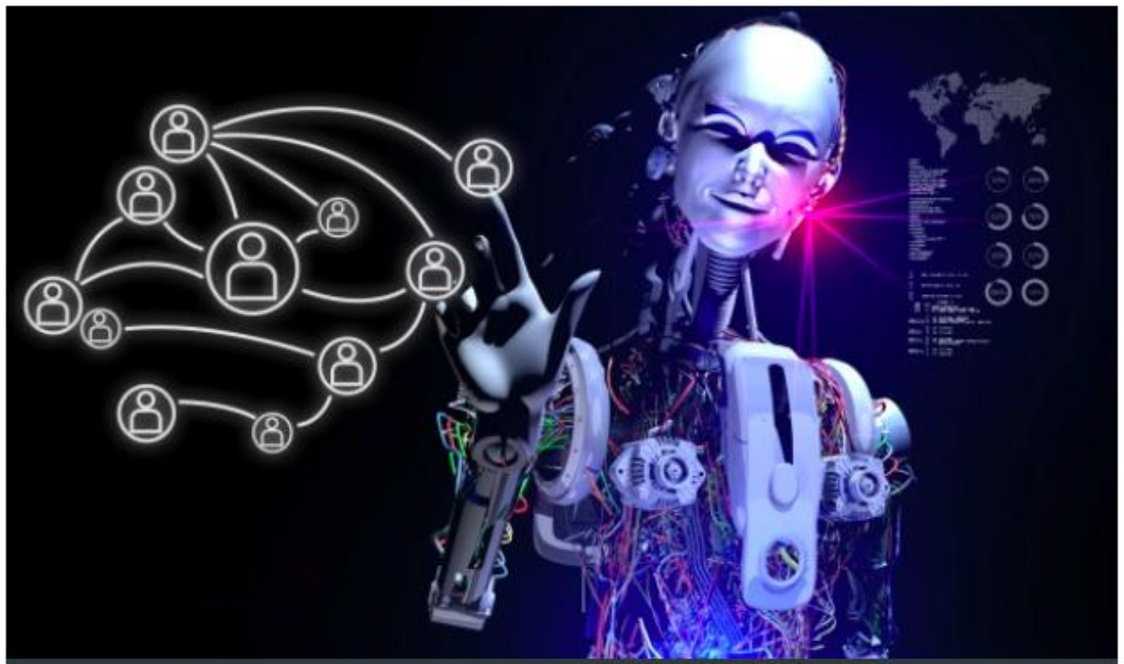
Georgia Tech's Ashkok Goel says automated 'nano tutors' will take-off in education



Using artificial intelligence to answer students' questions will soon be cheap and widely used in education. **iStock**

hands on simulations
augmented and virtual reality
machine learning and analytics
cognitive computing

Curriculum of the future

5

Teaching-related tasks that can be automated

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Digitally-enabled 21C learning can be:

f2f on screen
interactive
engaging
hands on
augmented
enhanced
+artificial intelligence

MOST importantly:
human connected learning across borders and timezones

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Who engages in digitally-enabled learning and why?

Everyone:

- blended: enhancement of campus (for every degree)
- fully online (some degrees)

Why?

- students: access, convenience, personalisation
- providers can achieve reach and scale

Think: postgraduate versus undergraduate learners

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Who and where - and why in higher education?

Blended at onsite campus:
- school leavers (Australian and international)
- career commencers
- postgraduate international
- in degrees (or parts) that require physical presence

our place and pace

Fully online:
- mature age, postgraduate
- work/life experienced; career advancers or switchers
- doing degrees (or parts) that can be done online
- with MOOCs and on global platforms

their place and pace

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Professional development?

Learn (first) how to engage and **connect** with students …

1 Discipline knowledge

2 Communication

3 Digital literacy

4 Critical thinking

5 Problem solving

6 Self-management

7 Teamwork

8 Global citizenship

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Provide new information, enthuse and motivate

Engage and connect

Authentic and authenticated assessment: interactive simulations, role-plays, virtual reality video conference classes and interviews; oral assessments, invigilated exams

Identity management

Productivity in a 24/7/365 enterprise

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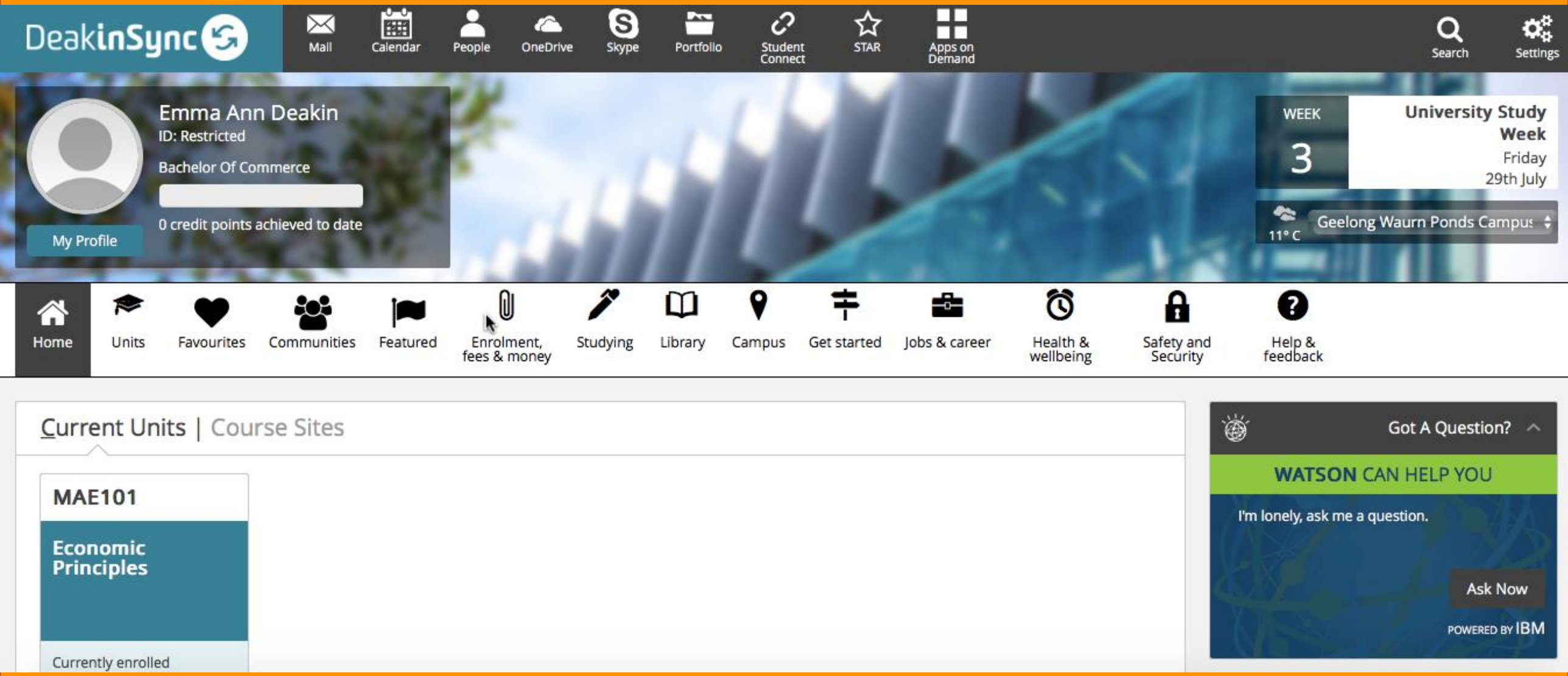
What does good digitally-enabled learning look like at D



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Graduate Learning Outcomes and employability are hard-wired into DeakinSync

DeakinSync | Mail | Calendar | People | OneDrive | Skype | Portfolio | Student Connect | STAR | Apps on Demand | Search | Settings

Public profile

Terms of Use | Your Public Profile | https://sync.deakin.edu.au/profiles/student/tedeaki | Your profile is public ? Yes

tedeaki | Check availability | Do you want to use your private email ? No

About me

Up to 1000 characters about you, your capabilities, achievements, interests and goals for the future.

I am currently studying a Bachelor of Civil Engineering (Honours) at Deakin University. I have a passion for the built environment, including major infrastructure projects. I have developed strong Teamwork and Communication skills working on numerous group projects and assignments within my coursework.

Last year I was given the opportunity to experience work placement at Lend Lease, a multinational property and infrastructure company. At Lend

Me in a Minute

Upload your "Me in a Minute" video showcasing two or three of the Deakin Graduate Learning Outcomes

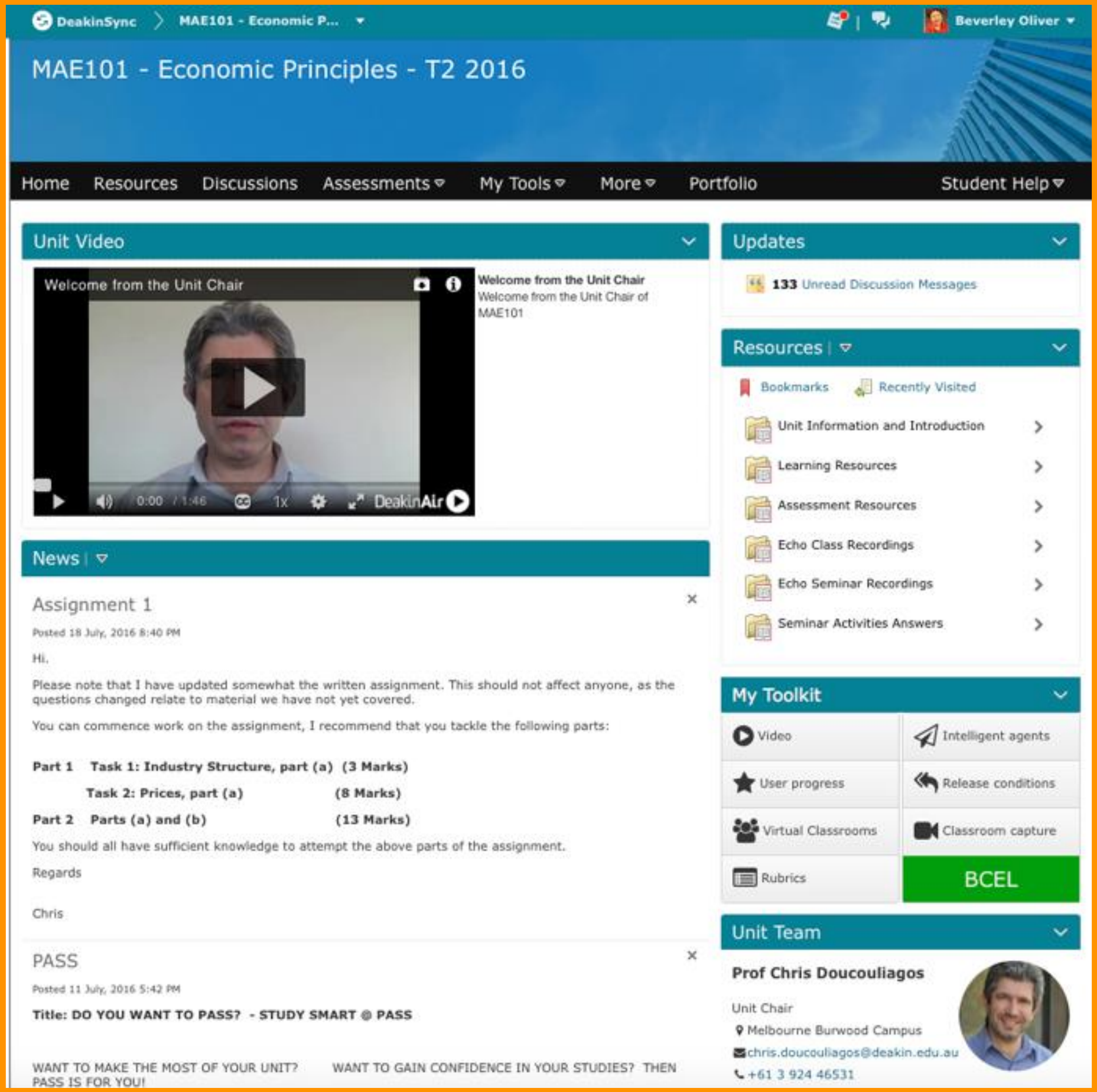
Showcases

Share your work that meets or exceeds any of the Course Learning Outcomes and Standards for your course

Communication

Critical thinking

But there are challenges:



Last generation online learning systems

(LMS)

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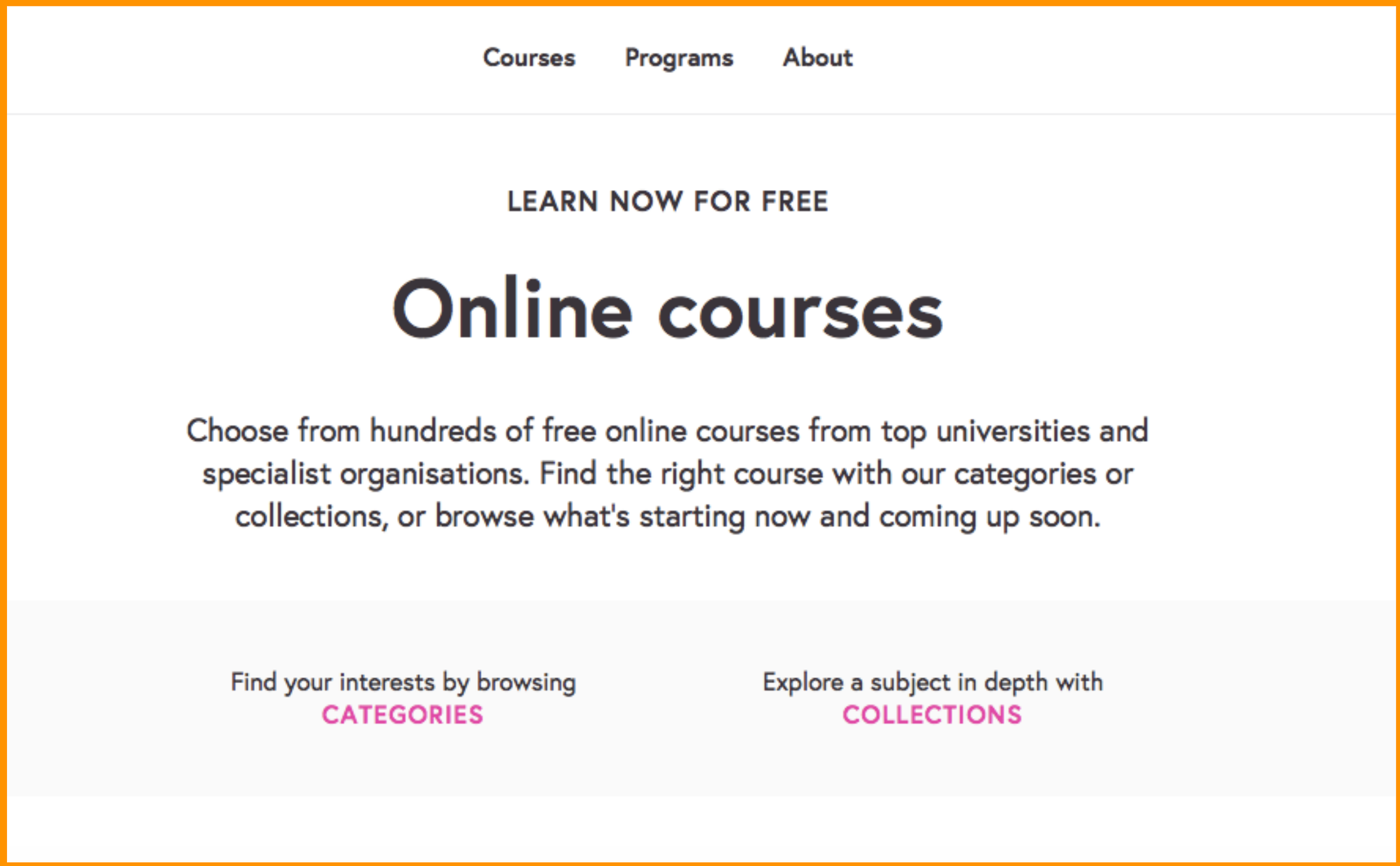
Next generation digital learning systems: FutureLearn



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Economic Principles

To do | Activity | Study group | Progress

WEEK 1 | WEEK 2 | WEEK 3 | WEEK 4 | WEEK 5 | WEEK 6

18 Jul | 25 Jul | 1 Aug | 8 Aug | 15 Aug | 22 Aug

WEEK 1: ANALYSING DOCUMENTS

current week

Welcome to the course

An introduction to the course, who we are and what you'll be learning about.

1.1 WELCOME TO THE COURSE ARTICLE

1.2 TAHITIA MCCABE (LEAD EDUCATOR) ARTICLE

1.3 GRAHAM HOLTON (EDUCATOR) ARTICLE

1.4 INTRODUCE YOURSELF DISCUSSION

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To do | Activity | Study group | Progress

19%

OF STEPS COMPLETED

Buy a personalised, digital and printed certificate and transcript

You can buy a Certificate of Achievement

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Summing up: ‘Cloud first’

connection		content
image		text
assessment	BEFORE	teaching
feedback		marks
interactivity		passivity
cloud		campus

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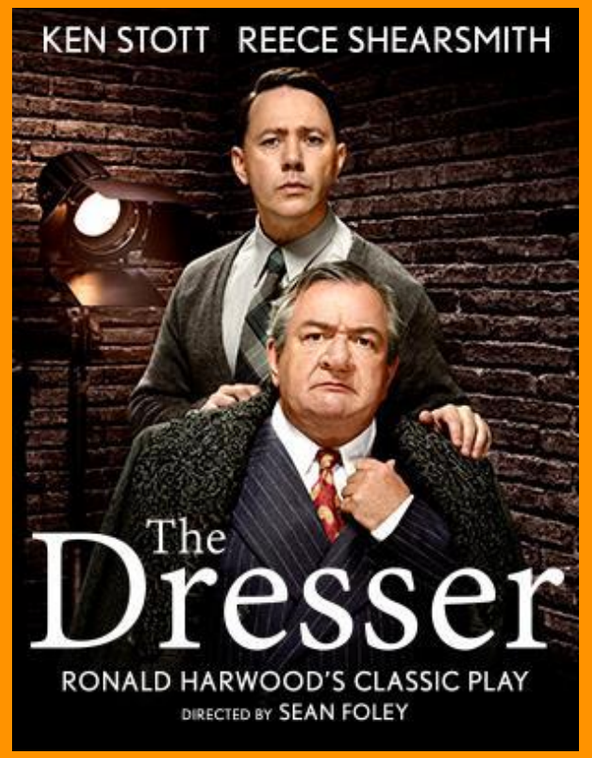

It’s quality digitally-enabled learning if it delivers the right learning outcomes in the right way…for the right students’ futures.

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