

Higher education change influences

drawn from research interviews in the project '100 jobs of the future'

100jobsofthefuture.com

Social and economic change	
Social Change	Health
<ul style="list-style-type: none"> ○ increased population - global ○ ageing population ○ urbanisation - smart cities, healthy, sustainable ○ displaced persons – transitioning challenges for displaced people ○ young people leaving rural communities ○ economic inequality ○ changing world of work ○ entertainment – integration with other life activities ○ shifting expectations around user experiences in all aspects of life ○ migration ○ global citizenship (cosmopolitanism) ○ peer to peer networks ○ deindustrialisation of developing world ○ local context and equity implications of technology advancements ○ maintaining a focus on people and people's needs ○ political disengagement ○ citizenship – how people live in their communities ○ commerce – technology disruption ○ reorientation of the consumption of materials ie. consuming things ○ sharing economy/new ownership models 	<ul style="list-style-type: none"> ○ constant connectivity ○ backlash to technology ○ culturally diverse work environments ○ ageing population ○ antibiotic resistance ○ obesity ○ diabetes ○ mental health ○ mindfulness becoming mainstream ○ personalised medicine ○ virtual medical practice ○ diagnosis – smart/beyond medical practice (AI, machine learning) ○ ageing health workforce ○ social connections ○ genetic profiling
	Safety and regulation
	<ul style="list-style-type: none"> ○ Intellectual property ○ regulation of technology ○ data privacy ○ cybersecurity ○ increasing surveillance ○ empathy online ○ facts and accuracy ○ management of personal data – brokering ○ regulation of/limits on big data ○ monitoring / surveillance - improving safety/wellbeing vs breaching privacy
Environment and natural resources	
<ul style="list-style-type: none"> ○ sustainable energy/better energy management ○ loss of biodiversity ○ climate change ○ food pressures ○ waste management- circular economy ○ resource depletion ○ water security ○ governing water & other scarce ○ natural resources 	

Technology / research advancements

Big data and networks	Artificial intelligence
<ul style="list-style-type: none"> ○ data analytics ○ social media ○ digital networks ○ blockchain ○ internet of things ○ biometrics ○ data science 	<ul style="list-style-type: none"> ○ machine learning ○ automation ○ bots ○ robotics ○ machine learning ethics ○ computer vision ○ natural language – process and understanding
Experience augmentation	Nanotechnology
<ul style="list-style-type: none"> ○ human computer interaction/integration ○ virtual reality ○ augmented reality ○ Interfaces/engaging ○ interaction/intuitive 	<ul style="list-style-type: none"> ○ nanomedicine ○ nanoelectronics
Advanced manufacturing	Biological science advances
<ul style="list-style-type: none"> ○ advanced materials ○ additive manufacturing ○ 3D printing 	<ul style="list-style-type: none"> ○ gene editing ○ microbiome discoveries ○ bio mimicry
Computer processing power	Agriculture
<ul style="list-style-type: none"> ○ increases in power... singularity? ○ quantum computing 	<ul style="list-style-type: none"> ○ use of drones ○ satellite imagery (for soil sampling etc) ○ synthetic meats
Space travel	
<ul style="list-style-type: none"> ○ energy / propulsion ○ new materials for spacecraft 	

Higher education-specific changes

- contributor to the innovation economy / society – the entrepreneurial university
- the quantified, performative university, quality & league tables
- the uberification (uberisation) of the university (Hall, 2016)
- the changing role of the academic – new technologies, new funding sources, research quality, research impact, new pedagogies, industry engagement, knowledge transfer
- massification, widening participation, diversification
- graduate employability and readiness for work / career
- internationalisation
- multi-campus universities
- campus infrastructure development
- online learning, flexible learning, personalised learning, just-in-time learning, MOOCs, AI assessment
- microcredentials