

Artificial Intelligence (AI): Preparing today's students to be creators of tomorrow

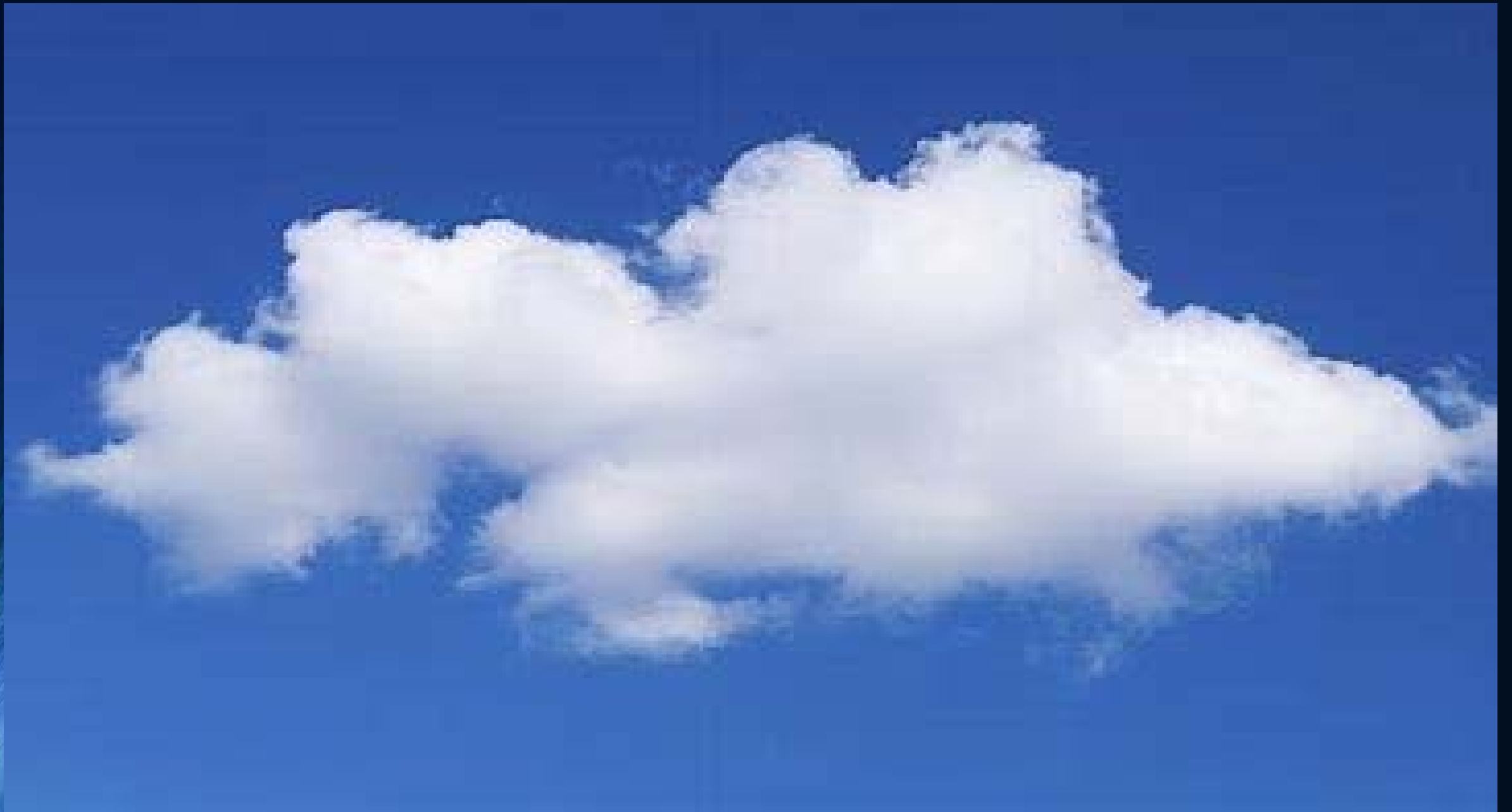
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McKinsey (2013) – 12 'truly disruptive' technologies

- Mobile internet
- Automation of knowledge work
- The internet of things, for example low cost sensors and actuators for data collection, monitoring, decision making and process optimisation
- Cloud technology
- Advanced robotics
- Autonomous and near autonomous vehicles

- Next generation genomics
- Energy storage
- 3D printing
- Advanced materials
- Advanced oil and gas exploration and recovery
- Renewable energy

- Digital Muggie (no skill required);
- Digital Citizen (can use technology to communicate and find information);
- Digital Worker (Configure and use systems);
and
- Digital maker (Build digital technology)

- 90% of Australian workers –
at least a Digital Citizen within 2-3 years
- 60% of Australian workers will need to be a
Digital Worker or Digital maker

- The Care Givers (youth workers, social workers, child care and aged care workers, fitness instructors and related fields);
- The Technocrats (medical laboratory scientist, engineering manager, and engineers in a range of technology related fields);
- The Specialist Professionals (GPs, teachers and psychologists);
- The Doers (the broad range of trades jobs); and
- The Creatives (dance teachers, photographers, dietitians, beauty therapists, pet groomers, life coaches, social media engineers).

“Human plus machine isn't the future,
it's the present.”





- **Australian Curriculum:** Literacy, Numeracy, ICT Capability, Critical and Creative Thinking, Personal and Social Capability, Intercultural Understanding, and Ethical Understanding.
- **Productivity Commission (2017)** : active learning, critical thinking and complex problem solving, developing curiosity, creativity, and collaboration.

- *The Foundation for Young Australians (2017)*- series of reports on the New Work Order. They identify “the new work smarts” - “Smart Learning, Smart Thinking and Smart Doing”.
- *Deloitte Access Economics (2017)* termed “soft skills” for business success - self-management, communication, teamwork, problem solving, digital literacy, critical thinking, innovation, emotional judgement, global citizenship, professional ethics, and enterprise skills.

Higher Cognitive Skills:

- Advanced literacy and writing,
- Quantitative and statistical skills,
- Critical thinking and decision making,
- Project management,
- Complex information processing and interpretation, and
- Creativity;

Social and Emotional Skills:

- Advanced communication and negotiation skills,
- Interpersonal skills and empathy,
- Leadership and managing others,
- Entrepreneurship and initiative taking,
- Adaptability and continuous learning, and
- Teaching and training others;

Technological Skills:

- Basic digital skills,
- Advanced IT skills and programming, Advanced data analysis and mathematical skills,
- Technology design,
- Engineering and maintenance,
- Scientific research and development.

“Teach kids creativity. Ultimately, machines will be better at coding”

“Our education system should emphasise the use of human imagination to spark original ideas and create new meaning. It’s the one thing machines won’t be able to do”



“It is not necessary for every teacher to be a digital native at ease in a world dominated by integrated technologies –

but they do need to be a digital immigrant who can venture into post-millennial territory and survive within it”.

