



Futuristic ICT infrastructure needs futuristic skills

by Moira de Roche, IITPSA

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Agenda

AI driven era overview

Future Skills

Tech Biggies

Learning Skills

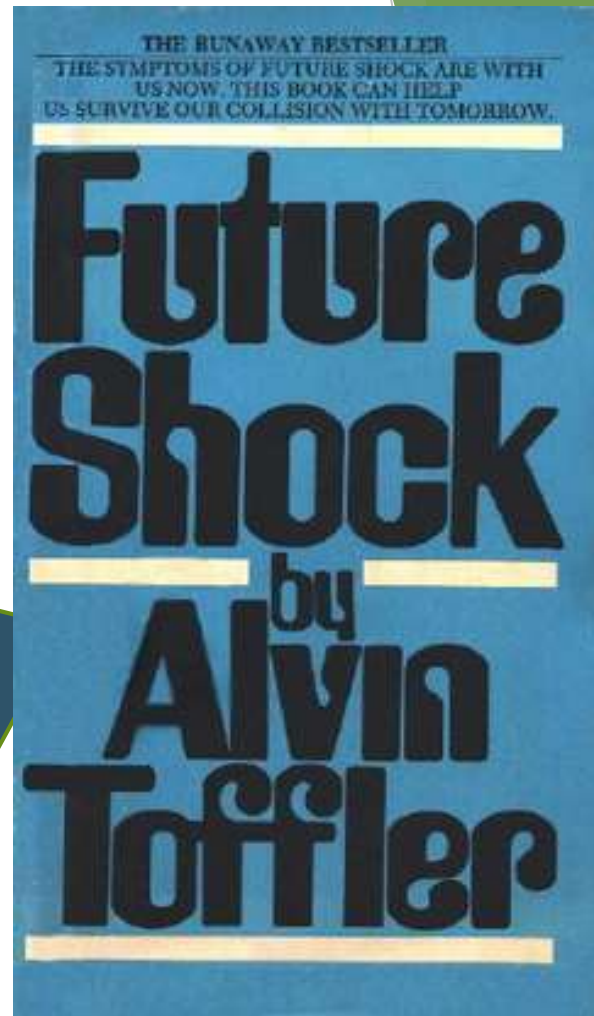
Creative Mindset

Social Intelligence

Business Skills

“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn”.

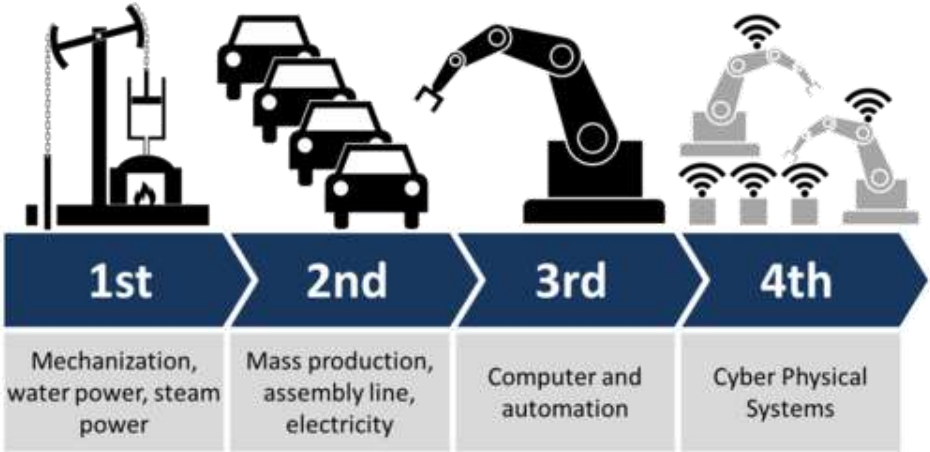
“By instructing students how to learn, unlearn and relearn, a powerful new dimension can be added to education. Tomorrow’s illiterate will not be the man who can’t read; he will be the man who has not learned how to learn.”



4th Industrial Revolution



The Fourth Industrial Revolution
by Prof Klaus Schwab World Economic Forum 2016



EXTREME automation, connectivity



Cyber-physical systems driven by AI and robots



AI Driven Unprecedented Era

Hyper time compression

new disruptive innovations

**Extreme
convergence**
of multiple domains



Exponential accelerating automation

– smart sensors and the 26 billion IoT devices by 2020
(11 trillion USD by 2025)

**Universal connectivity linked
by a digital AI mesh**



Education Focus

- ▶ Creative endeavours
 - ▶ Scientific discovery
 - ▶ Creative writing
 - ▶ Entrepreneurship
- ▶ Social Interaction
 - ▶ Robots don't have emotional intelligence
- ▶ Physical dexterity and mobility



65% of children entering primary school will have jobs that don't exist

More than ever before, teachers are being challenged to move-away from one-size-fits-all approach

In order to educate for the fourth and future industrial revolutions, there is a need to embrace the technologies associated with them

5th Machine Age: Future of Jobs

WEF 2018-22

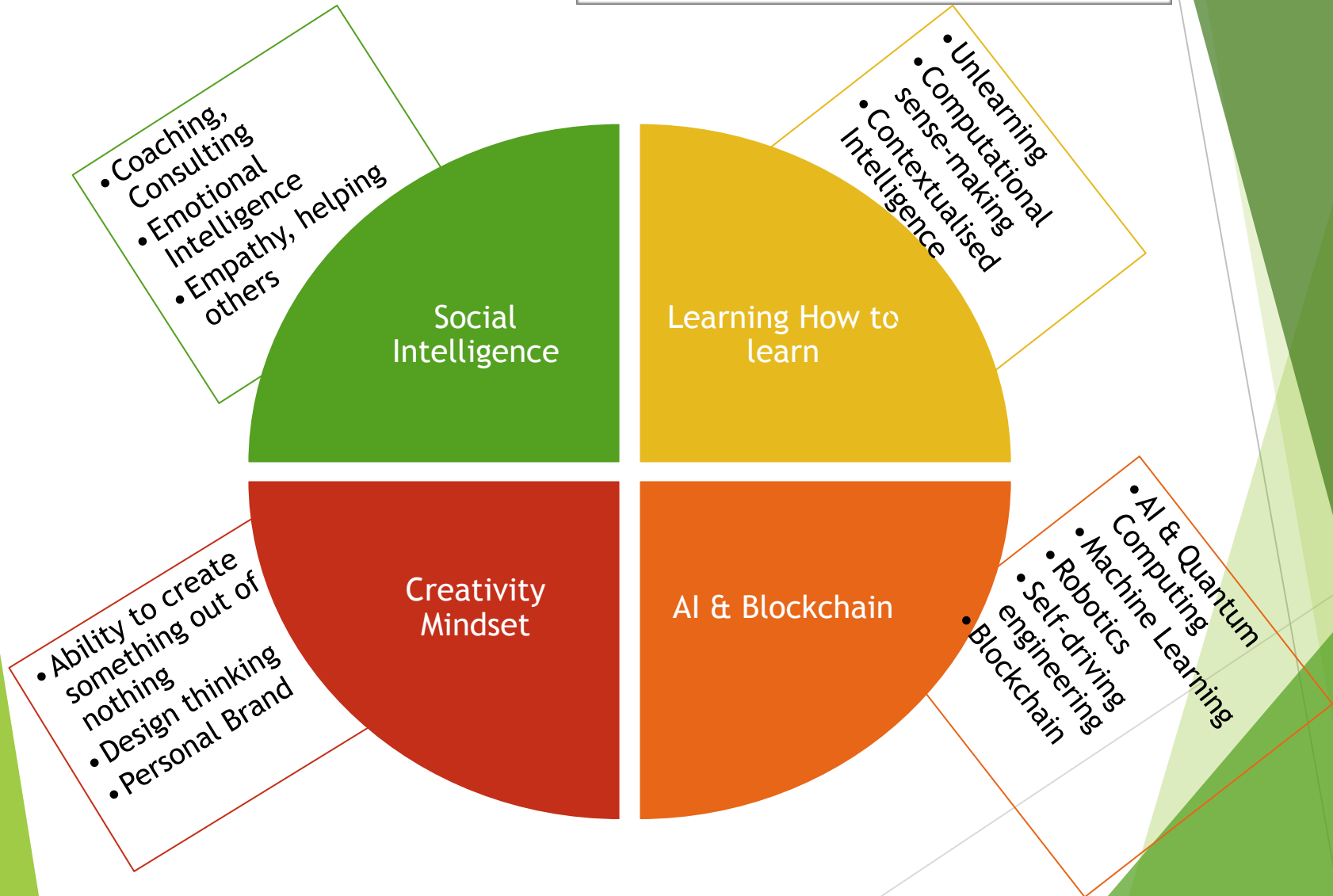
Table 4: Comparing skills demand, 2018 vs. 2022, top ten

Today, 2018	Trending, 2022 NEW '22	Declining, 2022
Analytical thinking and innovation	Analytical thinking and innovation	Manual dexterity, endurance and precision
Complex problem-solving	Active learning and learning strategies	Memory, verbal, auditory and spatial abilities
Critical thinking and analysis	Creativity, originality and initiative	Management of financial, material resources
Active learning and learning strategies	Technology design and programming NEW '22	Technology installation and maintenance
Creativity, originality and initiative	Critical thinking and analysis	Reading, writing, math and active listening
Attention to detail, trustworthiness	Complex problem-solving	Management of personnel
Emotional intelligence	Leadership and social influence	Quality control and safety awareness
Reasoning, problem-solving and ideation	Emotional intelligence	Coordination and time management
Leadership and social influence	Reasoning, problem-solving and ideation	Visual, auditory and speech abilities
Coordination and time management	Systems analysis and evaluation NEW '22	Technology use, monitoring and control

Source: Future of Jobs Survey 2018, World Economic Forum.

Future Skills

Source: *Artificial Intelligence: 101 Things You Must Know Today About Our Future*, Lasse Rouhiainen



Tech Biggies

- ▶ Cloud Computing Platforms
- ▶ Artificial Intelligence
 - ▶ Rapid growth = rapid change
 - ▶ Machine Learning Experts
 - ▶ Teachers
- ▶ Data Scientists
 - ▶ Testers
- ▶ Blockchain
- ▶ Robotics
- ▶ Self-drive Engineering
- ▶ Making a comeback
 - ▶ Tech Design & Programming
 - ▶ Systems Analysis & Evaluation
- ▶ Tech knowledge for everyone



Learning

- ▶ Unlearning
 - ▶ Adaptability
 - ▶ Ability to simulate situations “what if?”
 - ▶ Go back to zero
 - ▶ Exploration (not exploitation)
- ▶ Computational Thinking
- ▶ Contextualised Intelligence
- ▶ Complex Problem Solving
 - ▶ Mental Elasticity
 - ▶ Judgement
- ▶ Growth Mindset



Creative Mindset



- ▶ Create something out of nothing
- ▶ Curiosity
- ▶ Design thinking
- ▶ Agile and adaptable
- ▶ Cognitive flexibility



Social Intelligence

- ▶ Coaching & Consulting
- ▶ Empathy
- ▶ Emotional Intelligence
- ▶ Networking
 - ▶ Collaboration
 - ▶ Leading by Influence
- ▶ Communication Skills
 - ▶ Negotiation
- ▶ Service Orientation
- ▶ Embracing Change
- ▶ Ethics

Business

- ▶ Culture & Diversity
- ▶ Leadership
- ▶ Entrepreneurship
 - ▶ Internal & External
 - ▶ Solopreneur
- ▶ Working in projects
- ▶ Working remotely
- ▶ Resilience



*The skills you
need are the
things I can't
do!*

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Thanks for
your
attention!



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