# AI and the Labour Market

Technology developments in artificial intelligence, 1990-2016
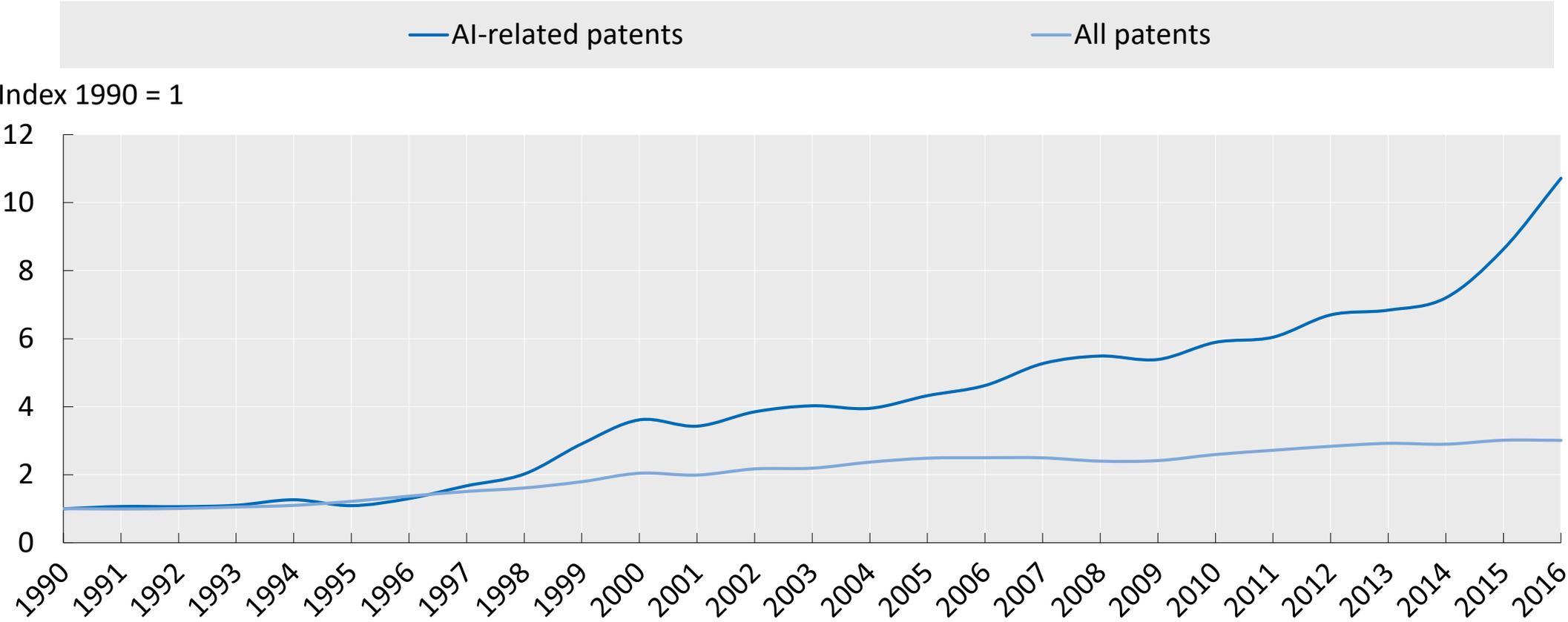
Computers are estimated to be able to do most "level 3" tasks in the OECD survey of adult literacy

Educational Research and Innovation

Computers and the Future of Skill Demand

Stuart W. Elliott

OECD

Adult Literacy Skills in OECD Countries (PIAAC)

Near-term computer capabilities

- Level 4-5
- Level 3
- Level 2
- Level 1 and Below

Proficiency
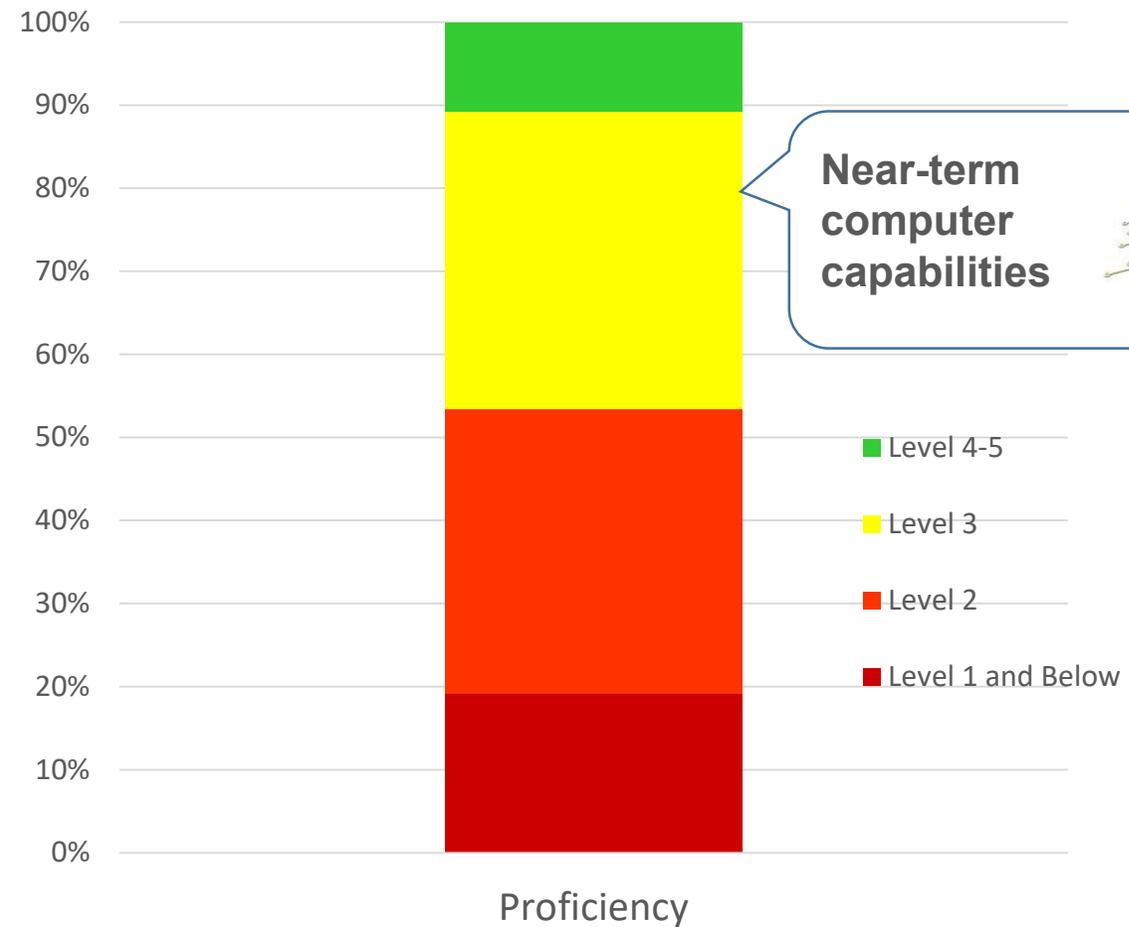
Some jobs risk being automated, many others will change...

Jobs at risk of automation and significant change

☐ High risk of automation ☐ Significant risk of change
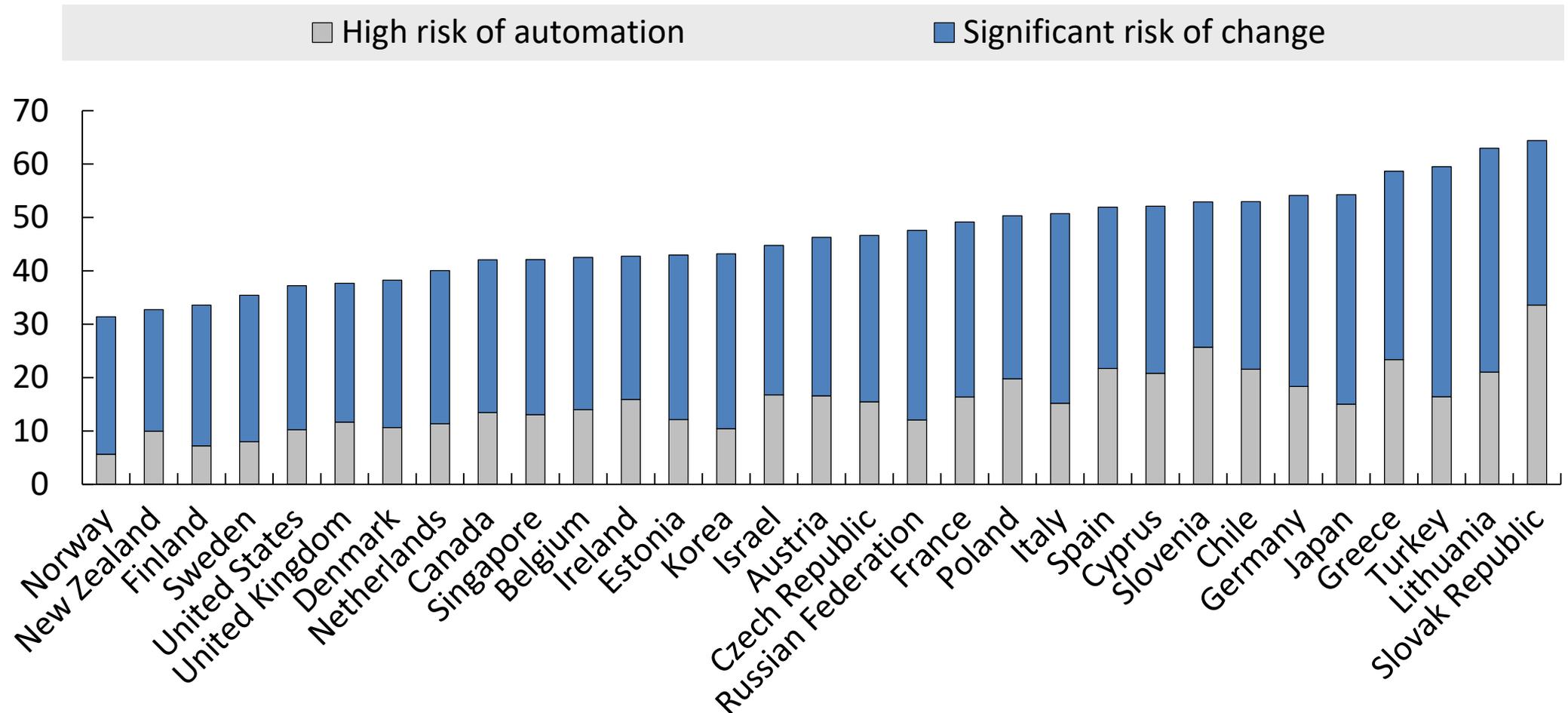
Most countries have seen increases in employment rates

Employment-to-population ratios, age 15-64

☐ 1990 ☐ 1995 ☐ 2000 ☐ 2005 ■ 2010 ■ 2015 (↗)
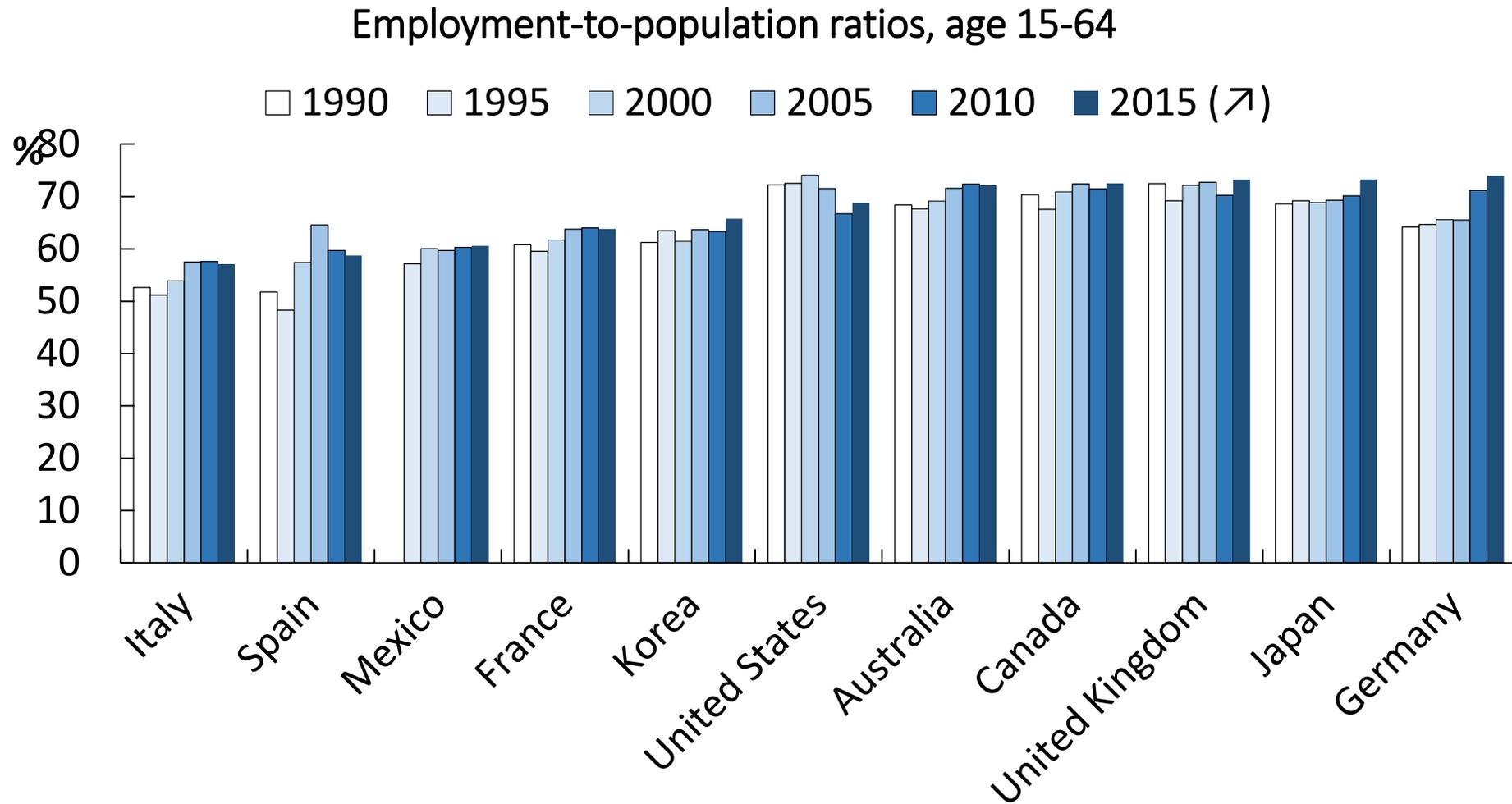
What policy response?

Skills

Social protection

Social dialogue
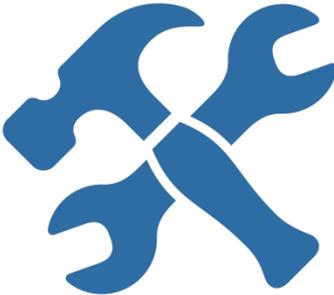
Activation

Survey of CEOs: Top 10 Skills Demand: 2018 vs. 2022

Today, 2018	Trending, 2022
Analytical thinking and innovation	Analytical thinking and innovation
Complex problem-solving	Active learning and learning strategies
Critical thinking and analysis	Creativity, originality and initiative
Active learning and learning strategies	Technology design and programming
Creativity, originality and initiative	Critical thinking and analysis
Attention to detail, trustworthiness	Complex problem-solving
Emotional intelligence	Leadership and social influence
Reasoning, problem-solving and ideation	Emotional intelligence
Leadership and social influence	Reasoning, problem-solving and ideation
Coordination and time management	Systems analysis and evaluation

Accenture: New skillsets becoming more important

The skillsets that are increasingly important across every role are acquired through practice and experience, not in classrooms.

Importance: ○ High ○ Medium ○ Low

	Complex Reasoning		Creativity		Socio-emotional Intelligence		Sensory Perception	
	Importance in 2017	Change since 2004	Importance in 2017	Change since 2004	Importance in 2017	Change since 2004	Importance in 2017	Change since 2004
MANAGEMENT & LEADERSHIP	High	▲	High	▲	High	▲	Low	▲
EMPATHY & SUPPORT	Medium	▲	Medium	▲	High	▲	Low	▲
SCIENCE & ENGINEERING	High	▲	High	▲	Medium	▲	Low	▲
ANALYTICAL SUBJECT-MATTER EXPERTISE	High	▲	High	▲	Medium	▼	Low	▲
RELATIONAL SUBJECT-MATTER EXPERTISE	Medium	▲	Medium	▲	Medium	▲	Low	▲
PROCESS & ANALYSIS	Medium	▲	Medium	▲	Medium	▲	Low	▲
PHYSICAL SERVICES	Low	▲	Low	▲	Medium	▲	Low	▲
TECHNICAL EQUIPMENT MAINTENANCE	Medium	▲	Medium	▲	Low	▲	High	▲
MACHINE OPERATION & MANOEUVRING	Medium	▲	Low	▲	Low	▲	High	▲
PHYSICAL MANUAL LABOR	Low	▲	Low	▲	Low	▲	Medium	▲

Note:
- Complex Reasoning includes critical thinking, deductive reasoning, active learning and a set of higher-order cognitive capabilities.
- Socio-emotional Intelligence involves active listening, social perceptiveness, persuasion, negotiation and service orientation.
- Sensory Perception incorporates a wide range of sensory capabilities that have been stimulated through our increasingly intimate relationship with digital technologies.

OECD project on Fostering Students' Creativity and Critical Thinking

- Creativity and critical thinking can be learnt and assessed in all subjects but we need to be clear about what we try to achieve: rubrics help clarify

- Teachers need support: professional learning opportunities and scaffolding (resources, examples, peer learning, etc.)

- Action research in primary and secondary education in 11 countries in the past 5 years (800 teachers, 20k students, 320 schools)

- Ongoing work in higher education: network of 26 higher eduation institutions in 15 countries

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Fostering Students' Creativity and Critical Thinking
WHAT IT MEANS IN SCHOOL

Text programme Text programme Text programme Text programme

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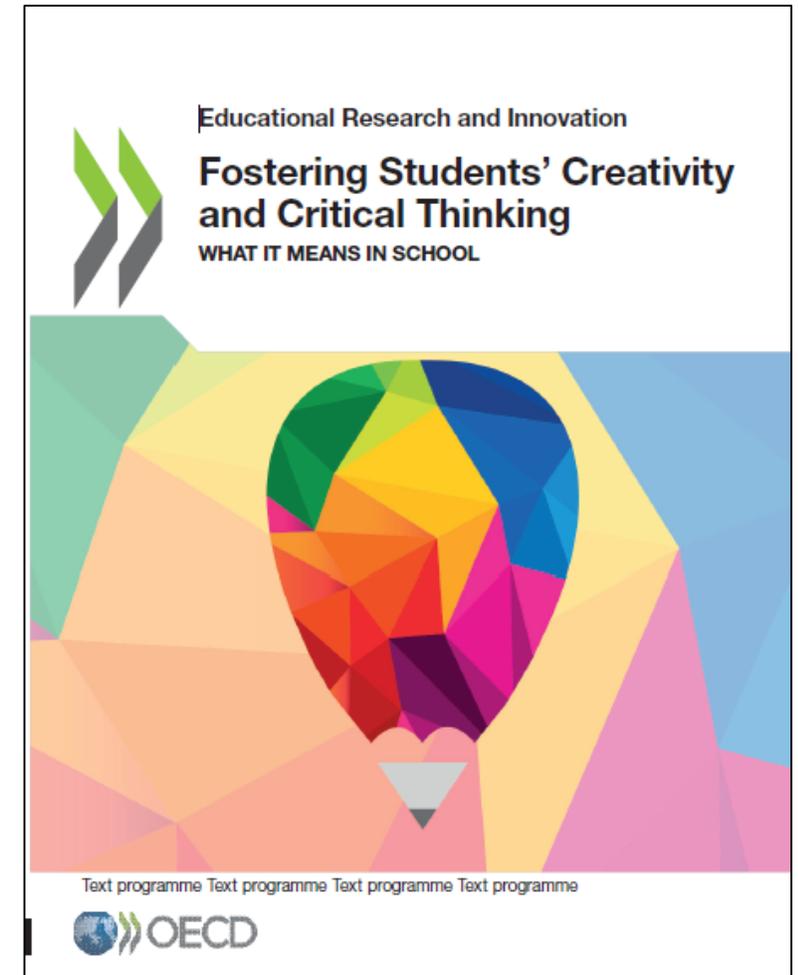
OPEN EDUCATION MAINLY USED BY THOSE IN FORMAL EDUCATION CLOSE TO THE LABOUR MARKET

SHARE OF STUDENTS HAVING PARTICIPATED IN OPEN/DISTANCE EDUCATION IN LAST 12 MONTHS PRIOR TO SURVEY, BY EMPLOYMENT STATUS

IN EDUCATION – EMPLOYED   IN EDUCATION – UNEMPLOYED   IN EDUCATION – OUT OF THE LABOUR FORCE

Source: Skills Outlook 2019

Source: Survey of Adult Skills (2012, 2015)
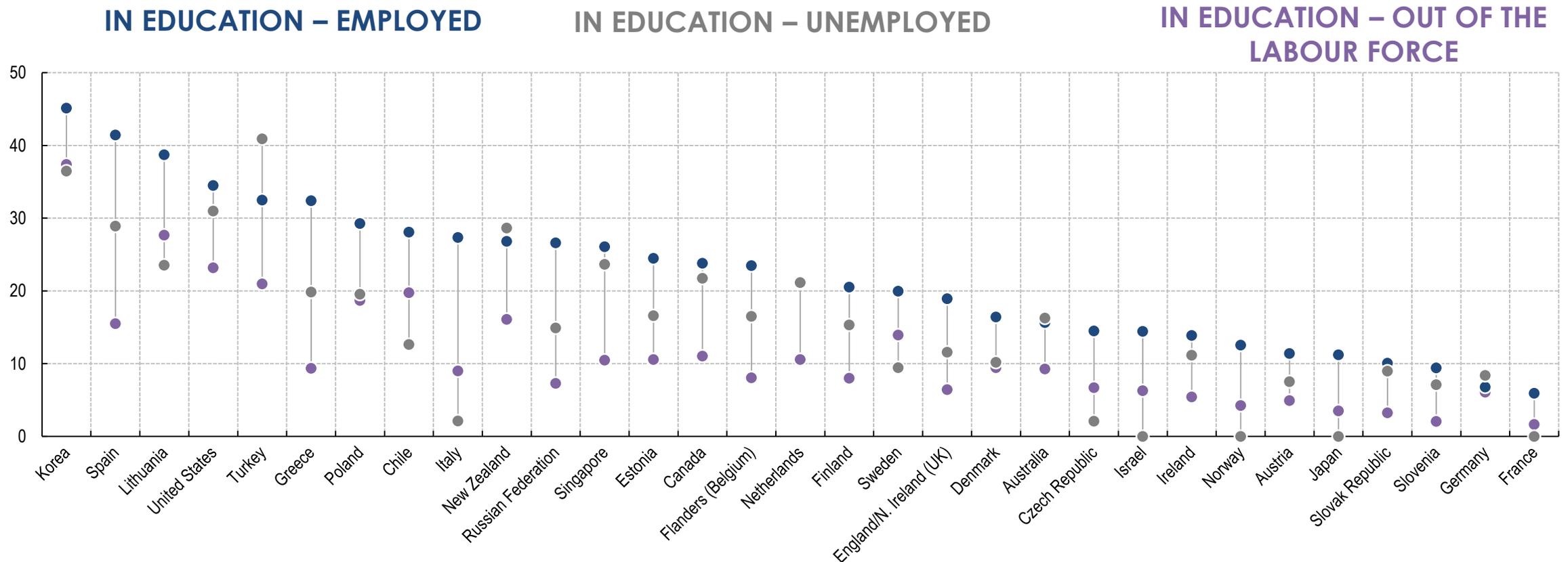
Can AI contribute to the reskilling and education problems?

- New models of qualifications and adult training are appearing using AI
  - Personalise the training content
  - Make the training more predictive of interest and performance
  - Provide training tasks that are more « authentic » and helping to train people to become experts in a domain

- New models of assessment of competences
  - Western Governors' University (US): no classes, just assessments and guidance
  - New ways of thinking about assessment departing from paper-pencil exams

Questions about AI and the labour market

- What determines AI adoption (including the role of social partners)?
- A better understanding of AI capabilities and the specific impact of AI on jobs, job quality, and skills use
  - Substitution or augmentation?
  - AI could make work more interesting, BUT it could also make work dead-boring
  - AI could make workplaces more reliable, safe and productive, BUT what about privacy, transparency, etc?
- The impact on efficiency, productivity, concentration and competition

Thank you

Stephan.VINCENT-LANCRIN@oecd.org

Stijn.BROECKE@oecd.org