



International  
Labour  
Organization

# International Perspectives on the Future of Work, Skills and Learning

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# World is changing

## Global drivers of change

Which jobs?  
Which tasks?  
Which skills and  
qualifications?



Technological  
change/  
digitalisation



Demographic  
change



Climate change



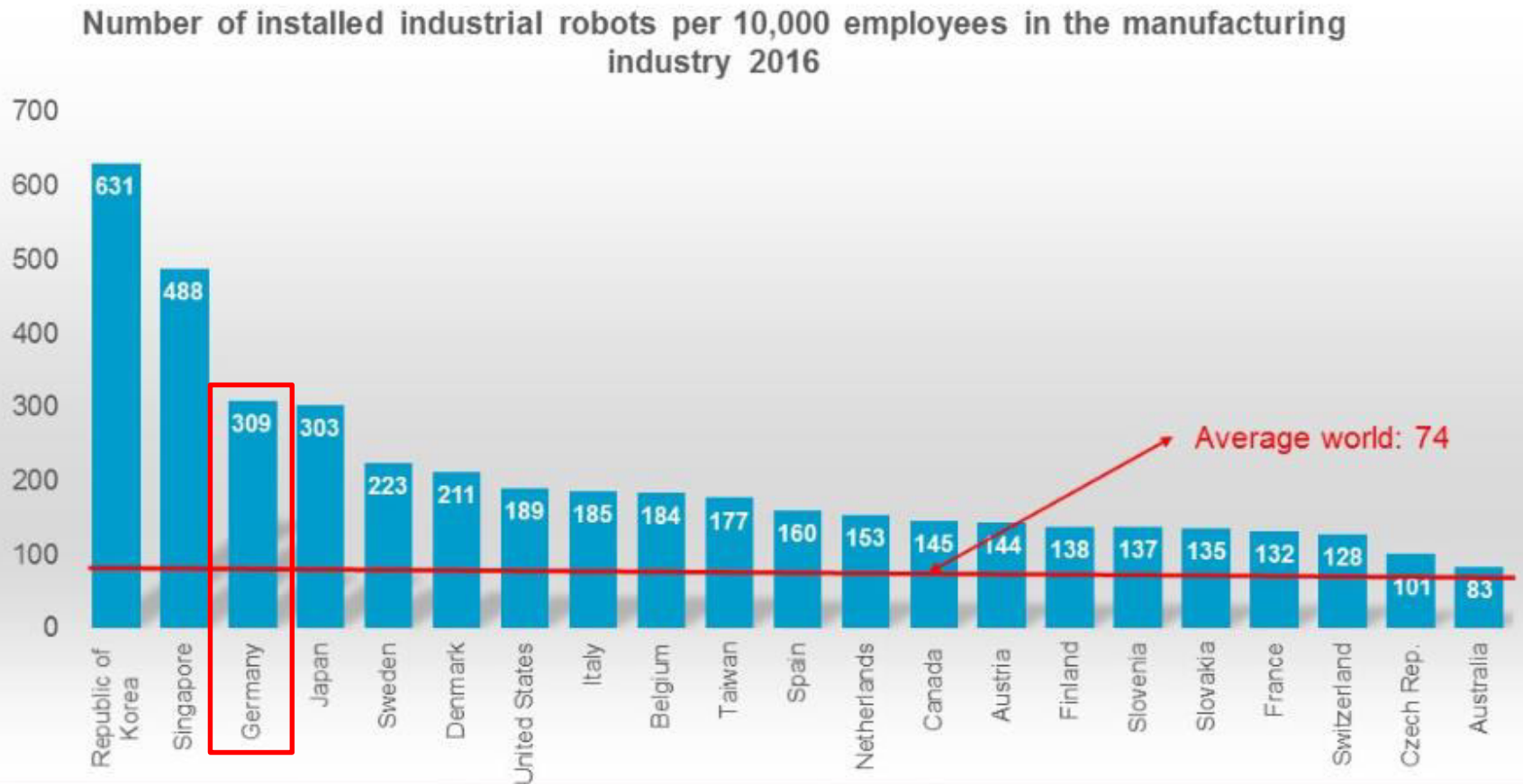
Work  
organization



Globalization



# Technological change and digitalisation:



Source: World Robotics 2017



# Jobs at risk of automation?

- **Replacing** (short-term) : Some 10%-20% of jobs at high risk of automated
- **Augmenting**: most jobs will undergo fundamental change in job tasks and skills required – between one third and over half
- **Creating** (medium- to long-term): many new jobs will be created (indirect, induced – e.g. leisure industry, travel, sports, fashion, restaurants)
- **Re-shoring**: some tech-intensive jobs may «return» to advanced countries
- **Off-shoring**: digital tasks are off-shored on the spot. Talent literally competes globally.
- **Increasing complexity** : decreasing demand for routine tasks; growing – for complex cognitive tasks and inter-personal skills
- **Fragmenting** labour markets and rising **inequality**
- People will go through **multiple transitions**: upskill / reskill /LLL



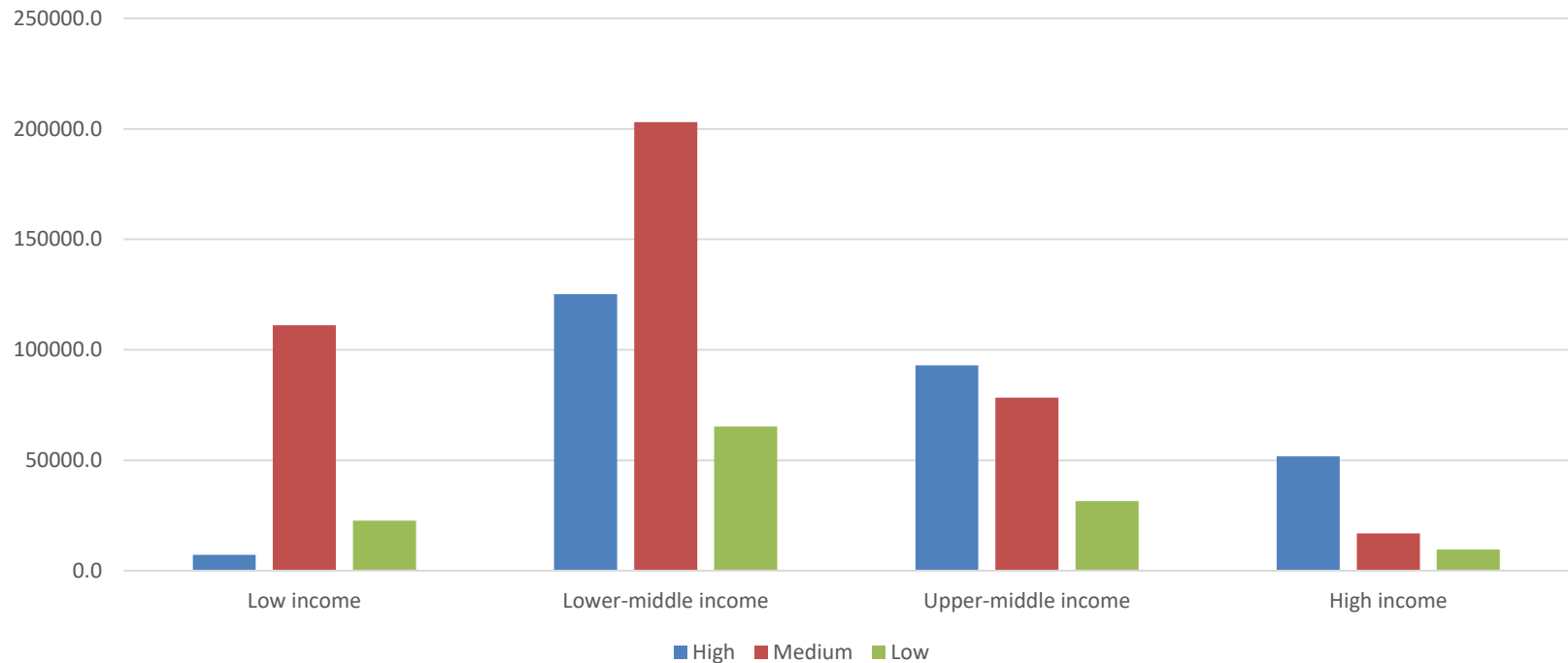
# Impact of digitalisation on skills – ILO ongoing research

- Across economic activities but varies across countries
- Jobs lost (automated or not created) in the absence of qualified human capital or in the absence of interest to take mundane jobs
- Rationalisation of business processes /work organisation
- Positive impact on cost and time saving
- Positive impact on working conditions
- Positive impact on getting women in non-traditional jobs
- Positive but slow impact on the labour productivity
- Slowly translates in digital skills demand
- A greater standardization of tasks
- Other non-digital skills required as the result of digitalisation (social sciences, social skills, problem solving, collaborative work, quick decision making, multidisciplinary)
- New occupations emerge (e-tailer, smart travel system designer)
- Platformisation and erosion of traditional employment relations (NSE over 60%)
- Deskilling of platform economy workers



# Demand for higher level skills is growing

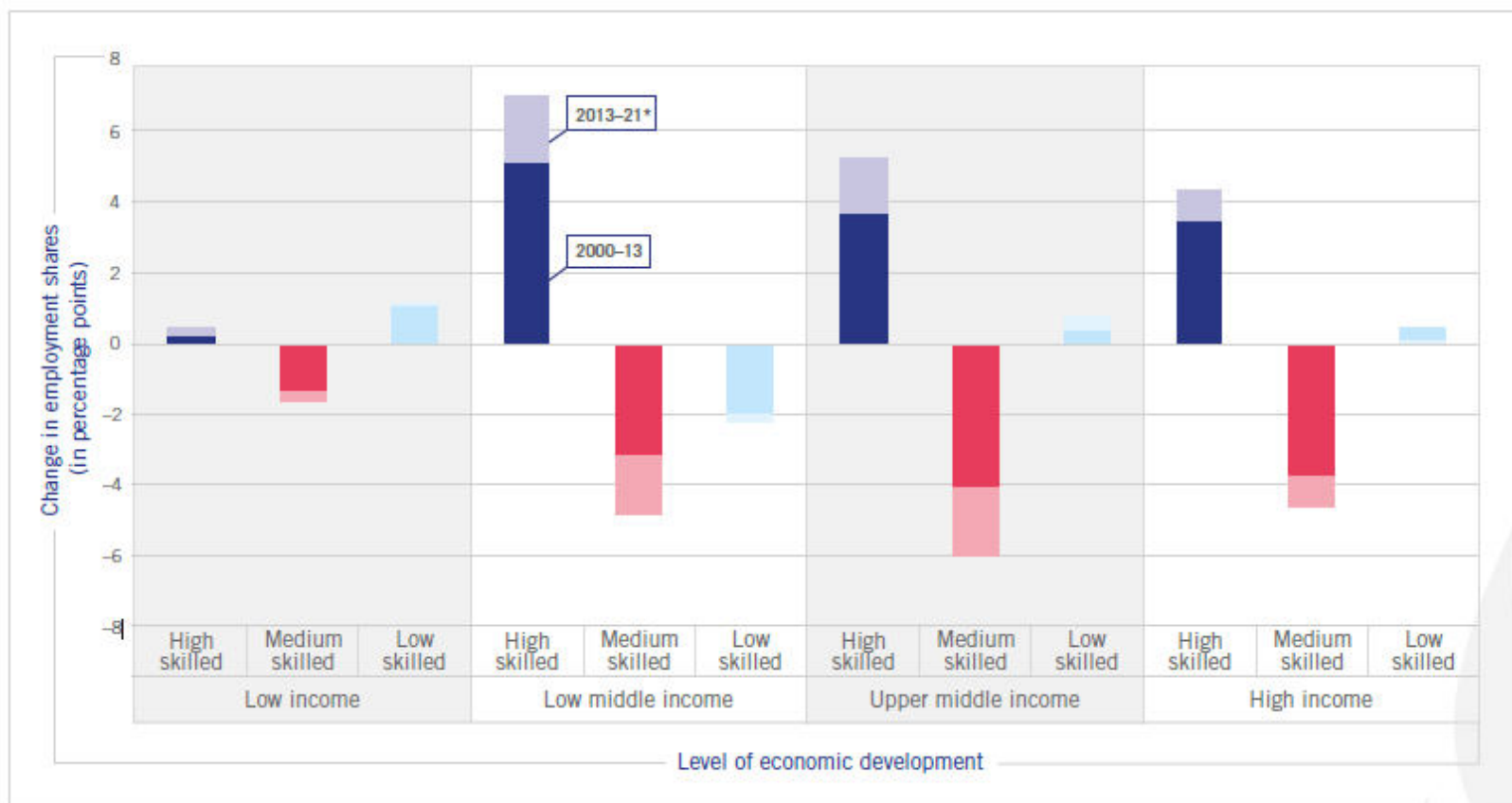
Employment growth by skill-level of occupations  
2000-2021



Source: ILO modelled estimates



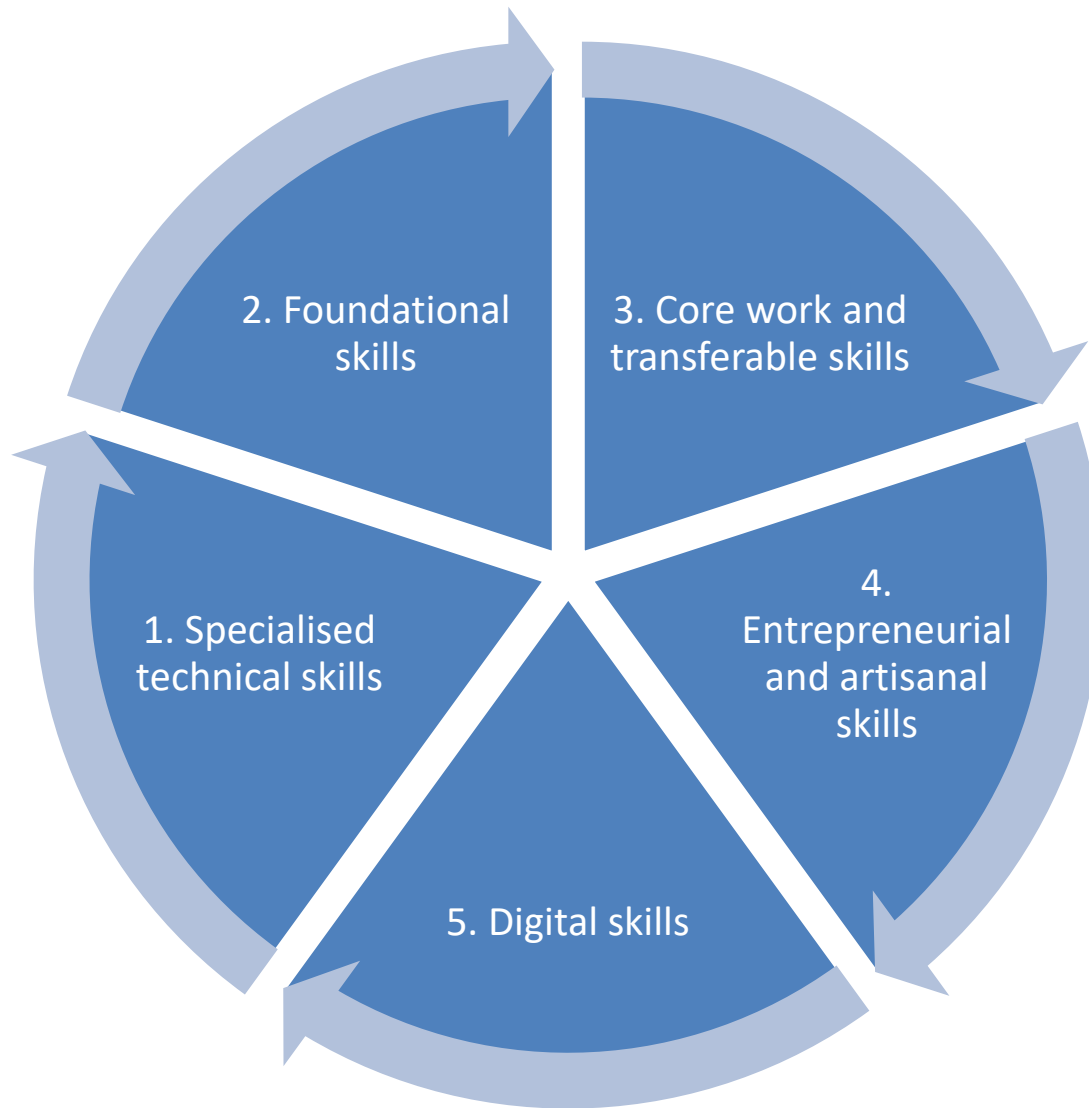
# Job polarisation



Notes: Change in employment shares, in percentage points. \* Forecasts after 2016.

Source: ILO Trends Econometric Models, November 2016.

# Implications for skills needs

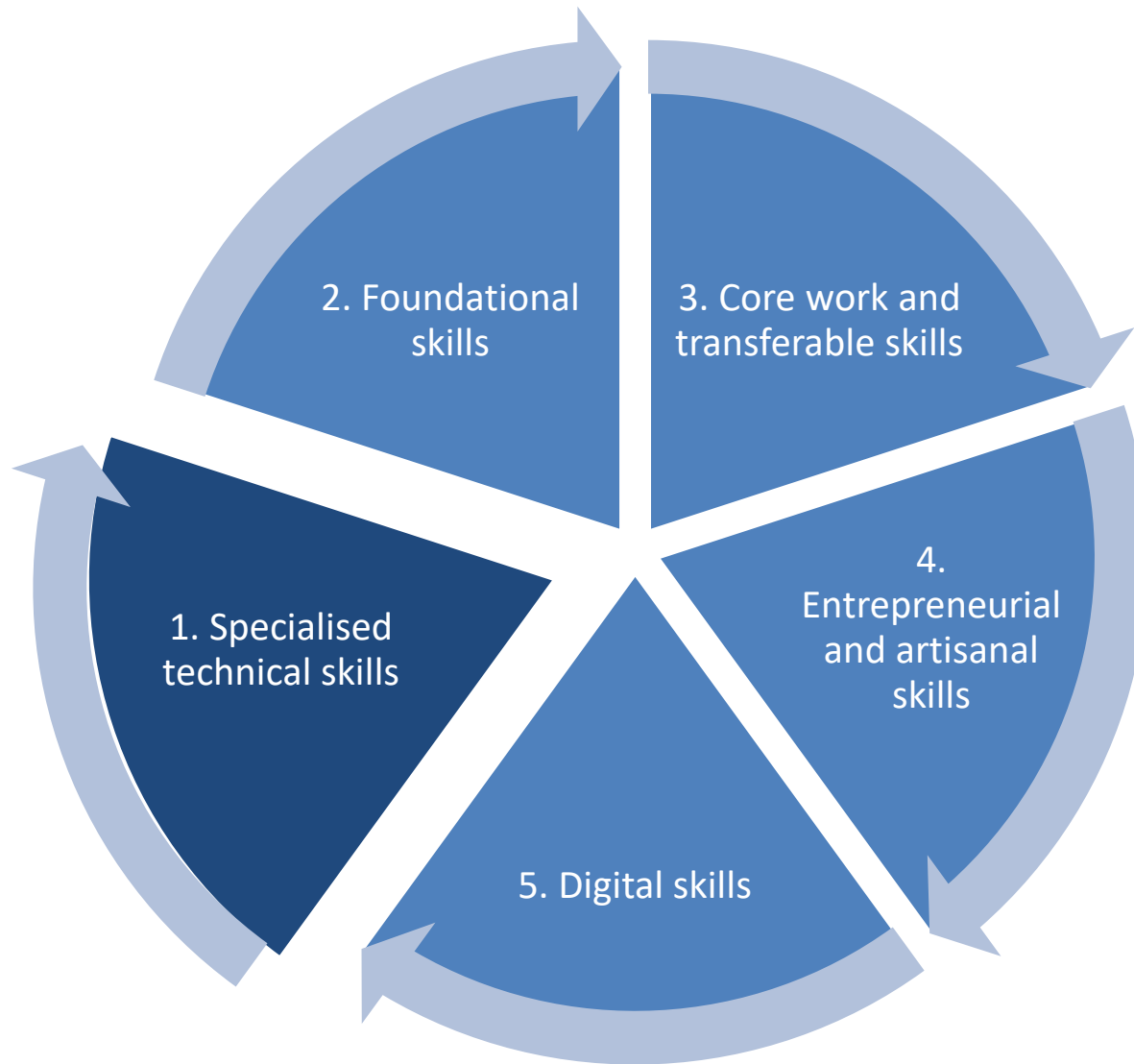


1. Quality and Relevance of **technical skills**
2. Promote stronger **foundational skills**
3. Foster **core employability skills**
4. Promote **entrepreneurial and artisanal skills**
5. Enhancement of **digital skills**





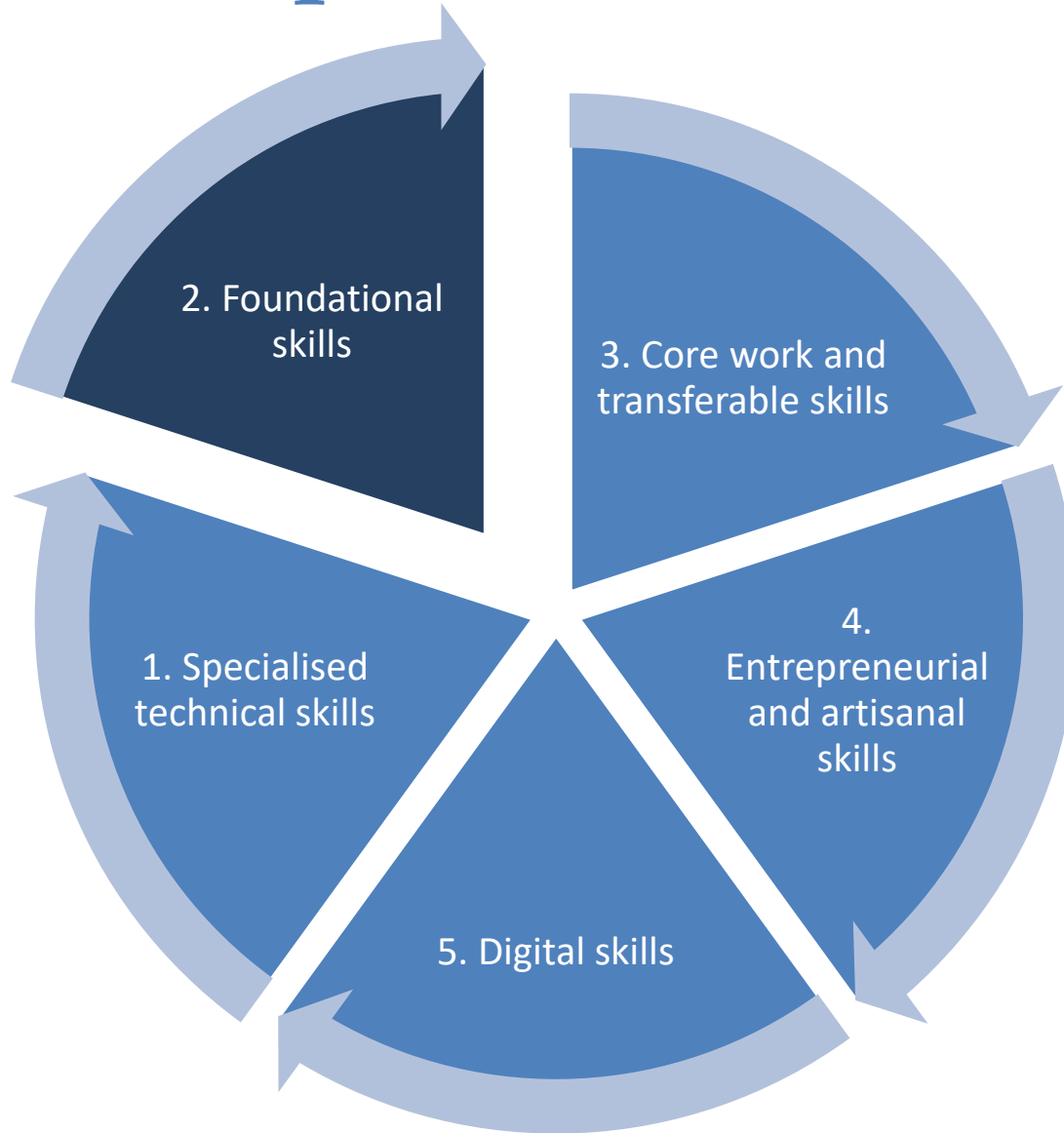
# Implications for skills needs



- A wide **diversity** of competences (beyond digital!)
- **Care** skills
- **STEAM** (innovate with social responsibility)
- Skills to **operate** and **maintain** technologies (TVET)
- **Design** and system thinking skills
- **Transferrable** technical skills



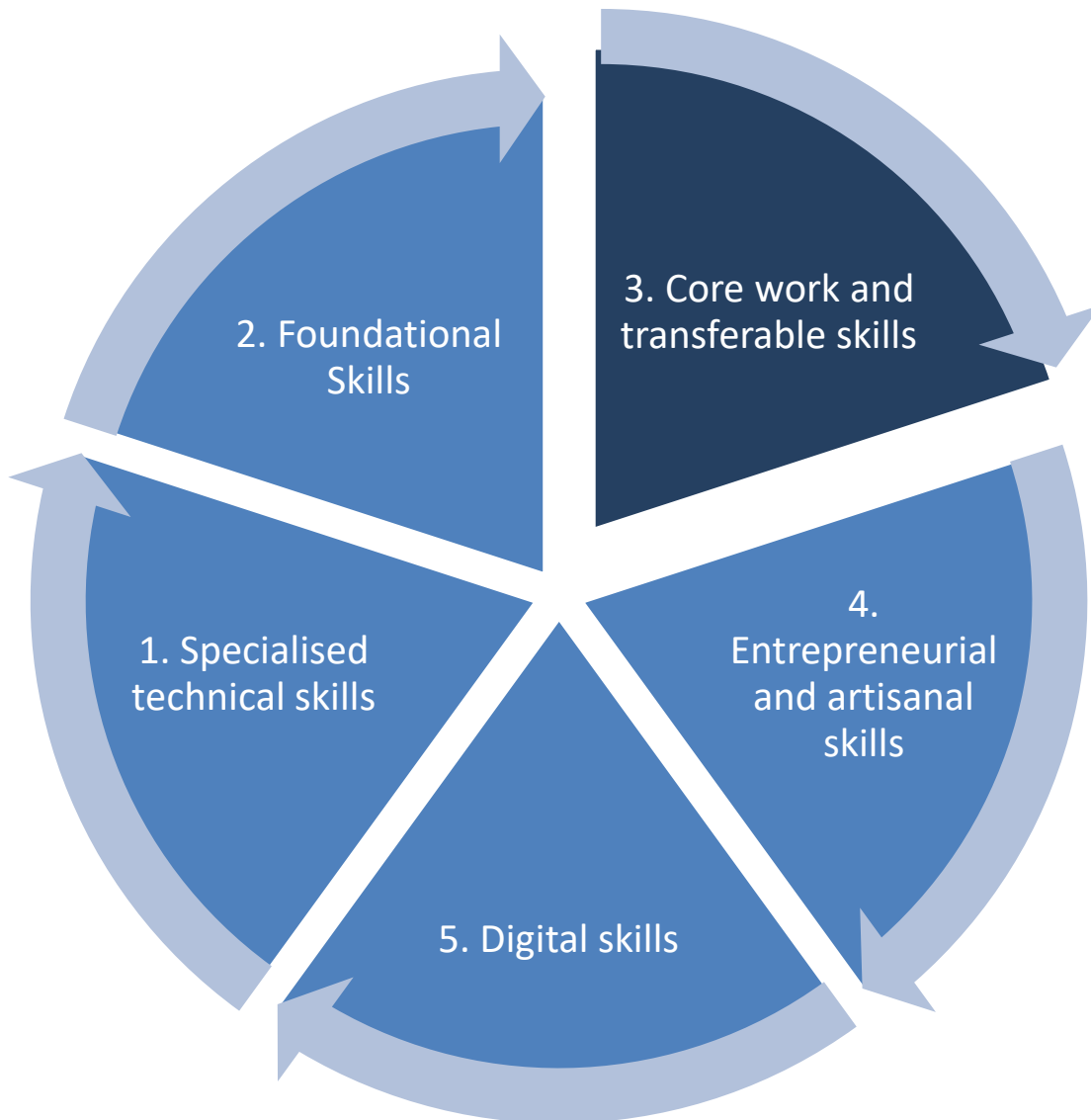
# Implications for skills needs



- Literacy
- Numeracy
- Digital literacy and a digital detox literacy
- (Re)search literacy: important for self-directed learning
- Environmental literacy



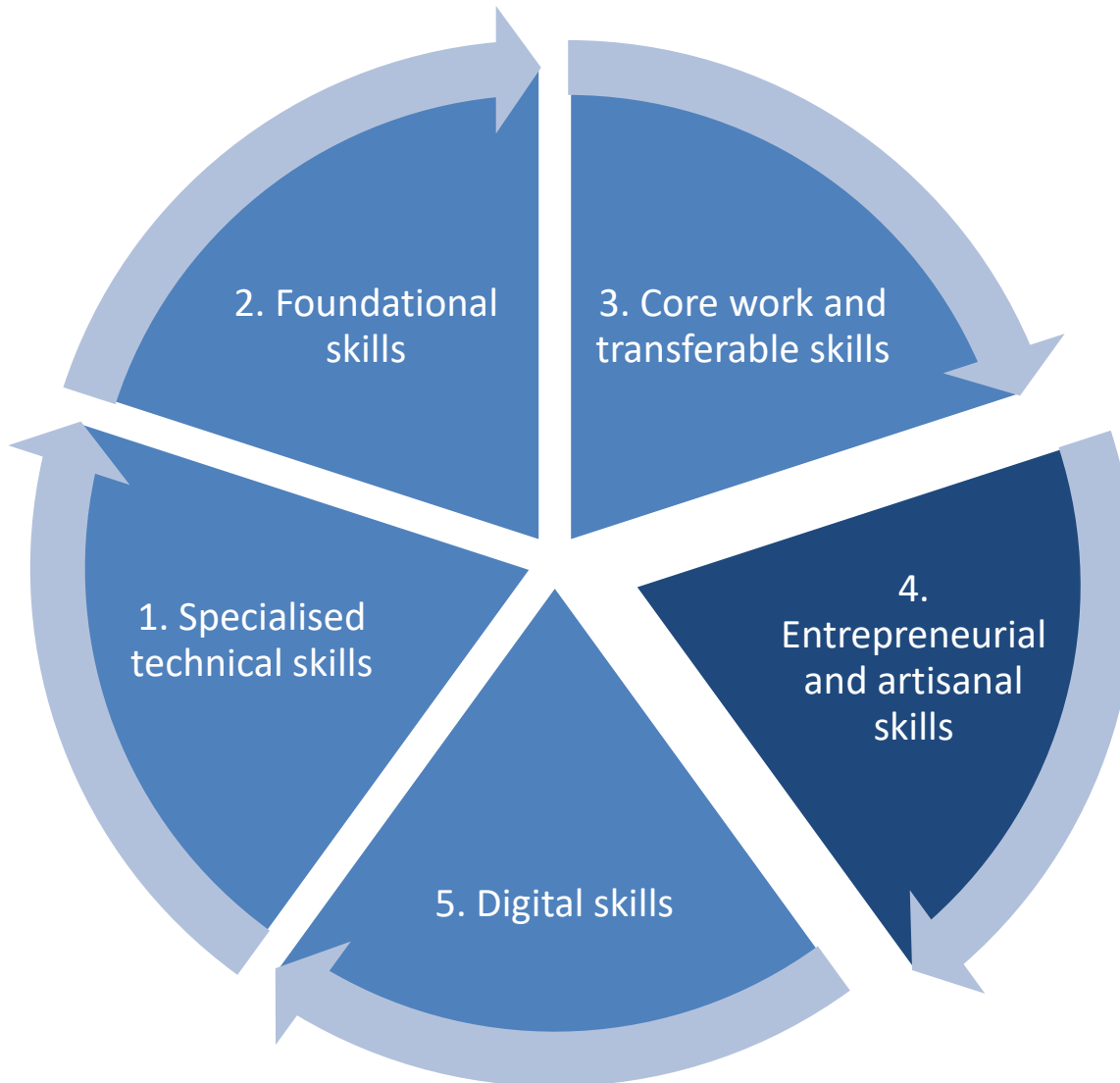
# Implications for skills needs



- Learning to **learn**
- **Agility** and resilience, stress resistance, persistence
- **4 Cs**: Communication, Collaboration, Creativity & Critical thinking
- **Future** thinking (including own future)
- Adaptability/flexibility skills: curiosity and **mind-sets** that support openness, change and innovation



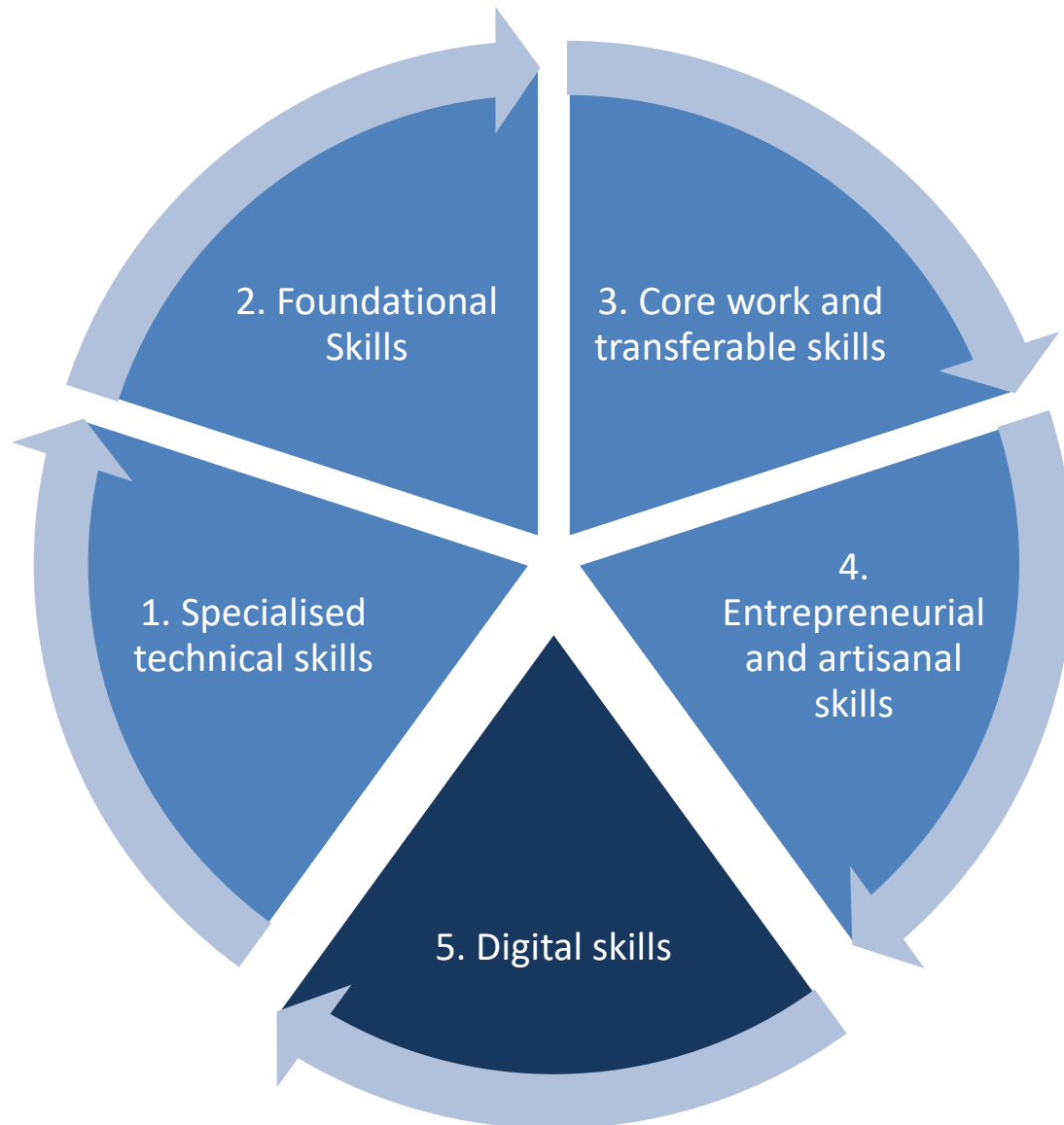
# Implications for skills needs



- Nurture job **creators**, not only job takers
- Deploying techs will depend on enterpreneurial and leadership talent
- Increasing demand for **artisanal** customised products (alternative to competing in e.g. health, fashion, beauty)
- **Customised** solutions for industries
- **Repair** services
- **New techs** to upgade, augment and reduce price
- **Digital** entrepreneurship



# Implications for skills needs



# Digital Skills

## Examples:

- Basic digital literacy
- Software-user skills such as Spreadsheets and Word processing
- Internet browsing, Social media
- Email

## Examples:

- Programming skills
- Networking support skills
- Customer Relationship skills
- Digital media and design

## Examples – industry specific:

- Industry 4.0 technologies (3D printing, IoTs, Robotics, AI)
- CRM in services
- BIM in building

## Examples – cross cutting:

- Big data
- Cyber security

Basic and generic digital skills

Intermediate and advanced digital skills (IT-user)

Digital applications' skills



# 25 millions jobs in the transition to renewable energy may be created if...

## Energy transition scenario, 2030 (jobs in millions)

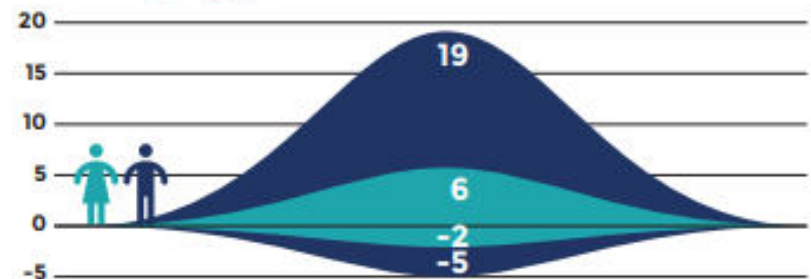
### Job growth by occupation

- 3.8 Building and related trades workers, excluding electricians
- 3.2 Labourers in mining, construction, manufacturing and transport
- 1.5 Metal, machinery and related trades workers
- 1.4 Market-oriented skilled agricultural workers
- 1.3 Science and engineering associate professionals
- 1.2 Electrical and electronic trades workers
- 1.1 Drivers and mobile plant operators
- 1.1 Sales workers
- 1.1 Stationary plant and machine operators
- 0.8 Science and engineering professionals
- 0.7 Subsistence farmers, fishers, hunters and gatherers
- 0.7 Agricultural, forestry and fishery labourers
- 0.6 Assemblers
- 0.6 Business and administration associate professionals
- 0.5 General and keyboard clerks
- 0.5 Production and specialized services managers
- 0.5 Refuse workers and other elementary workers
- 0.5 Personal service workers
- 0.4 Numerical and material recording clerks
- 0.4 Business and administration professionals

### Potential job growth



### Job change by gender



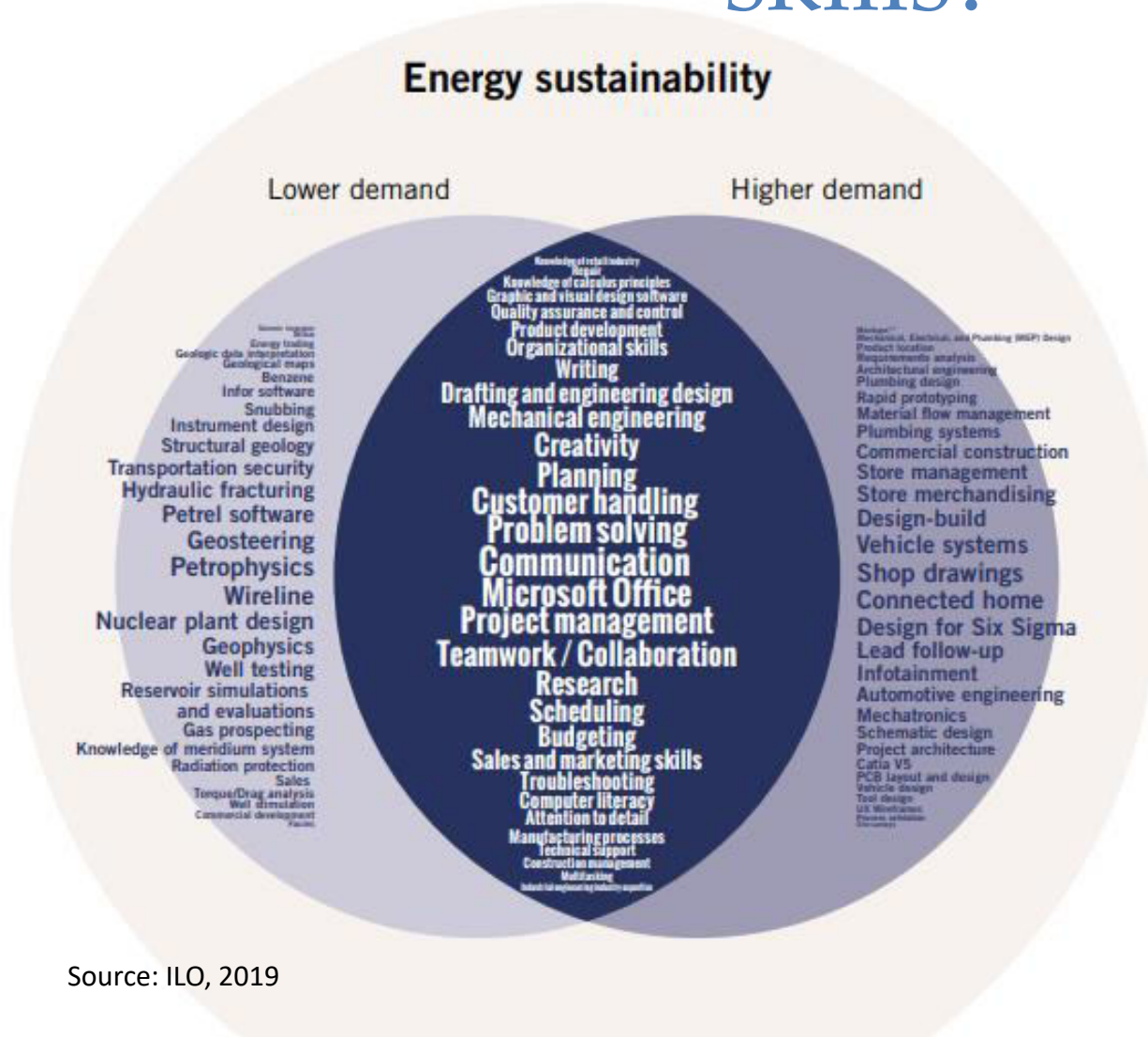
Source: ILO, 2019

And many more in the circular economy, in the care economy, creative industries etc.





# New typology of employability skills?



Overlap of skills for  
**science and  
engineering  
professionals**, in  
declining and in  
growing industries  
under global energy  
sustainability  
scenario 2030

Source: ILO, 2019





# Do schools cope with the changing demand?

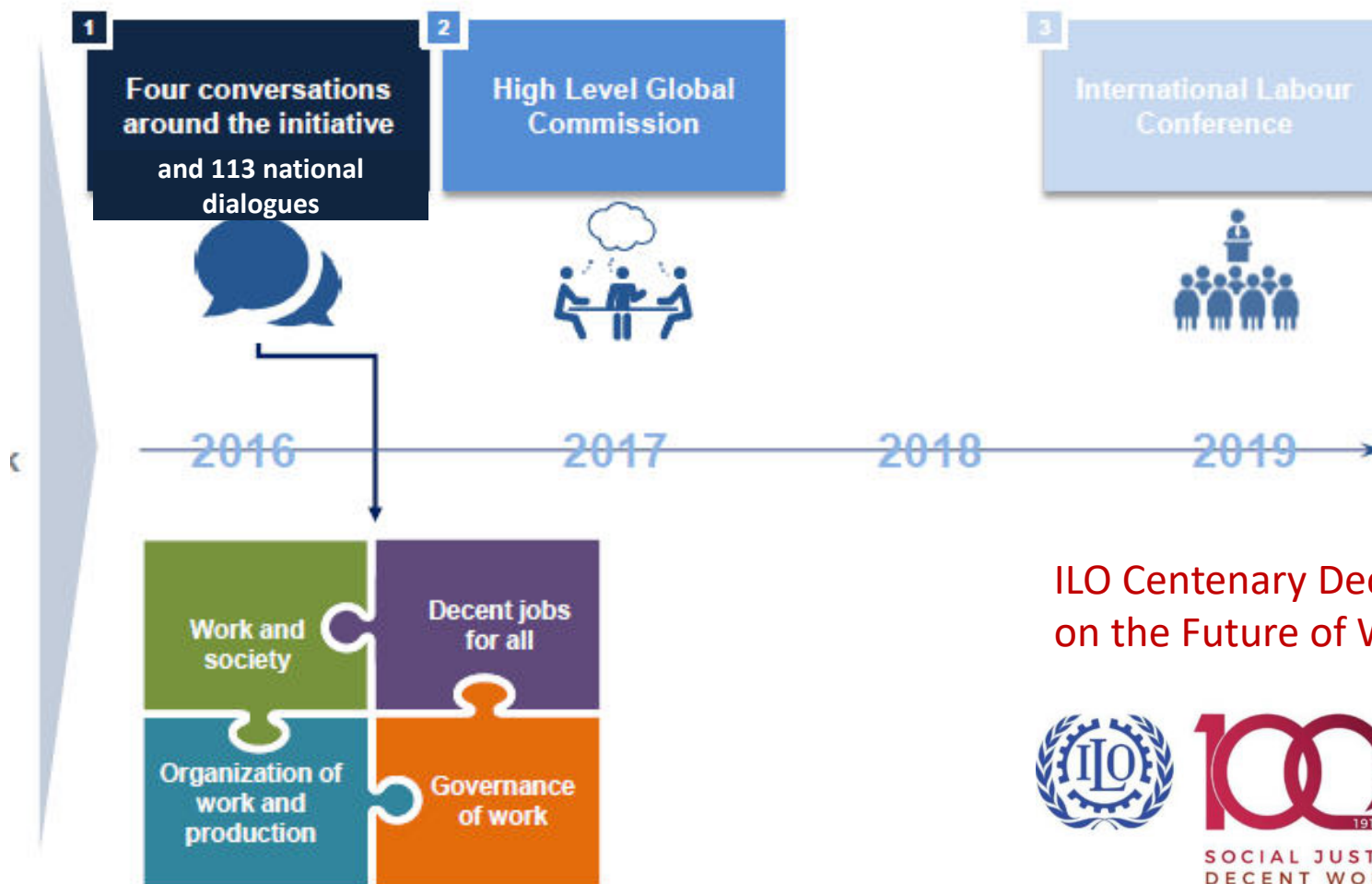


Zlatá Koruna school, 18th century classroom



Modern school, Singapore. Photo credit:  
<http://www.jeraldinephneah.com/neighbourhood-and-elite-schools-in-singapore/>

# ILO initiative on the Future of Work



ILO Centenary Declaration  
on the Future of Work



# ILO's Global Commission on the Future of Work

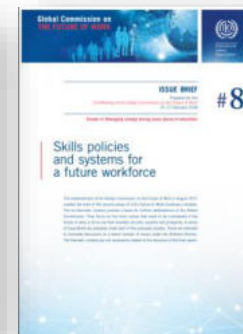


Stefan Löfven

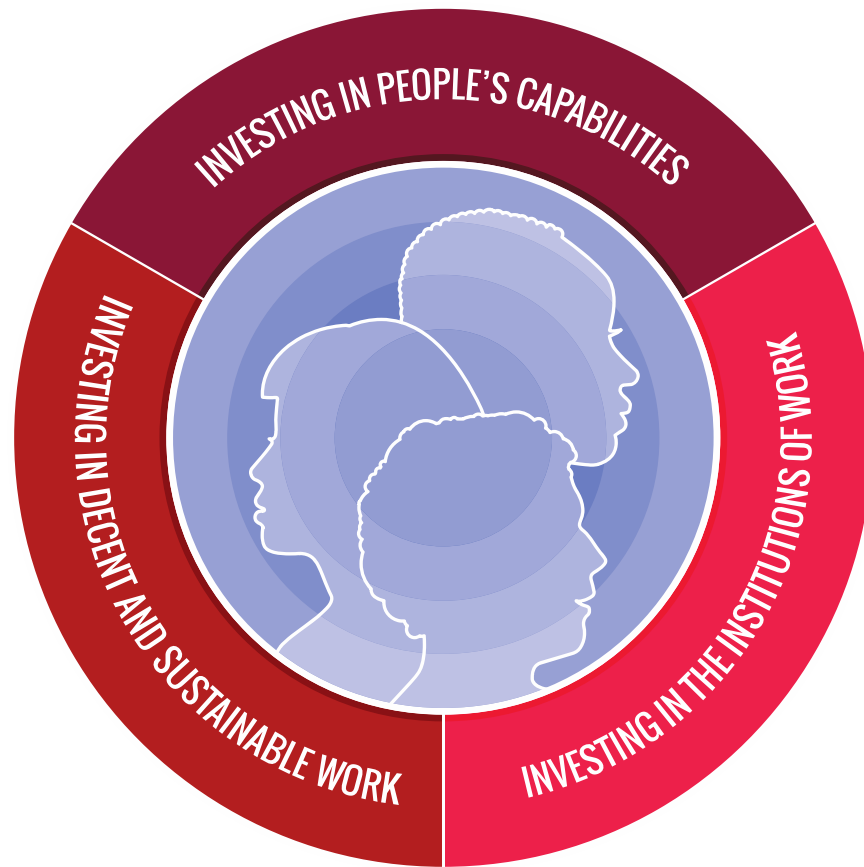


Matamela Cyril Ramaphosa

- High-level, presided by two heads of States
- Multidisciplinary
- Public and private sectors, academia, civil society
- Resulted in the report Work for a Brighter Future
- Research support by the secretariat (ILO)

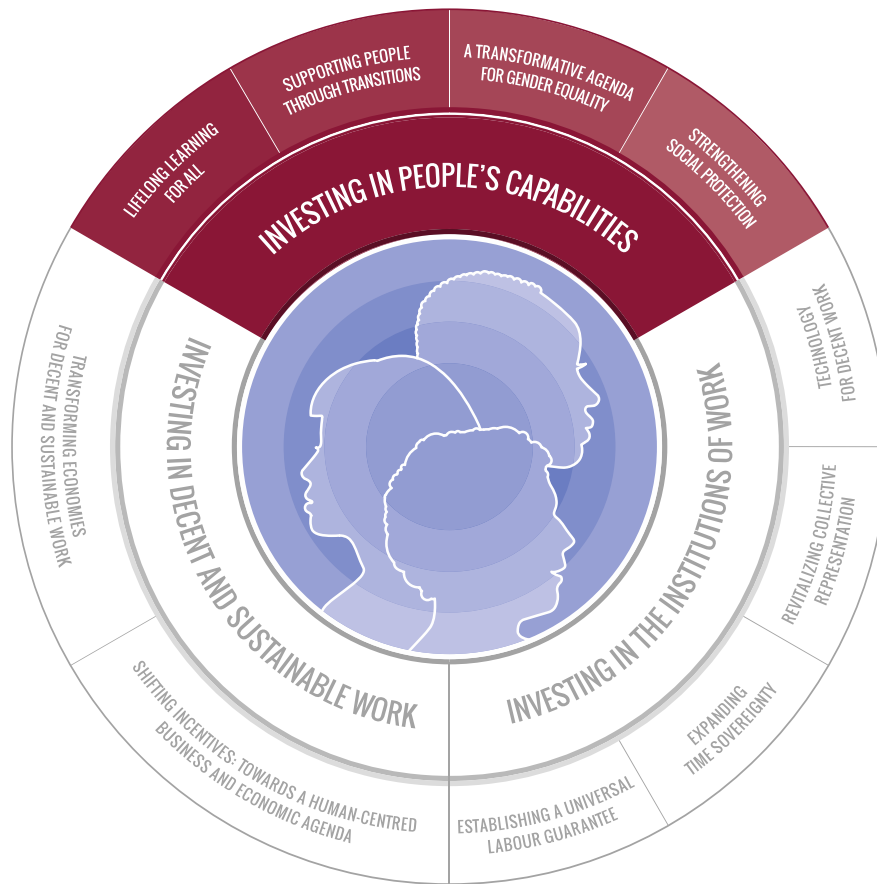


# A human-centred agenda for the future of work

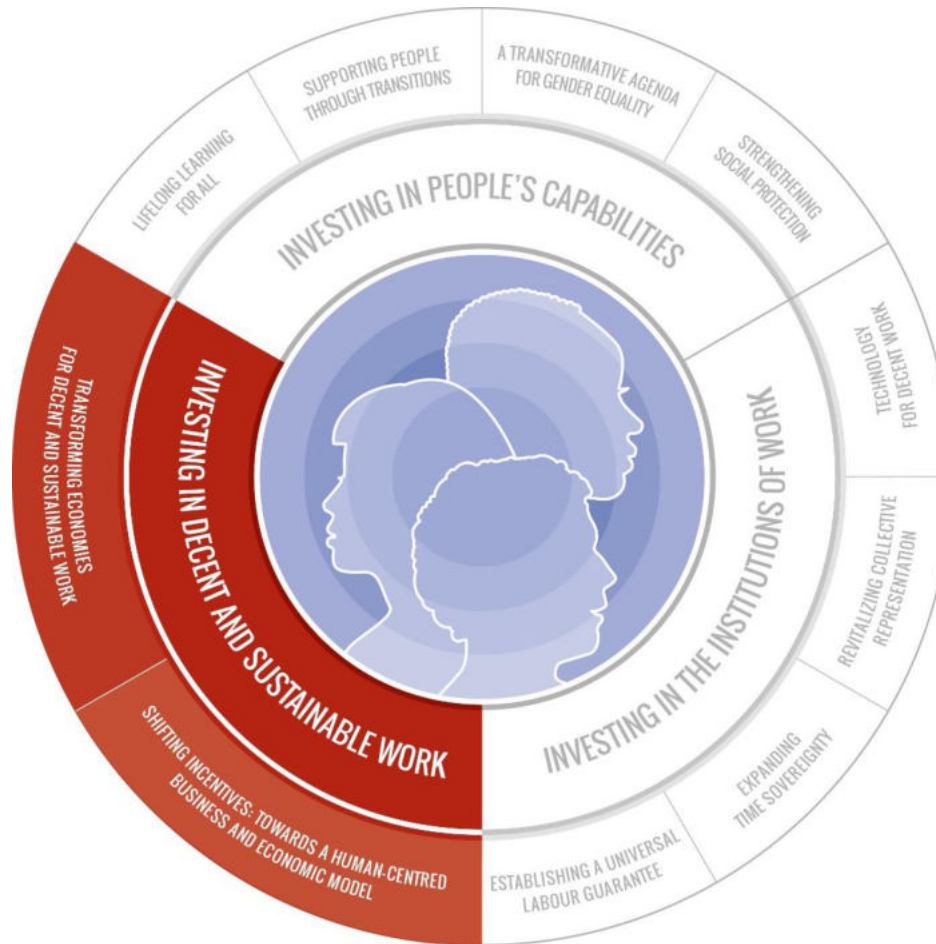




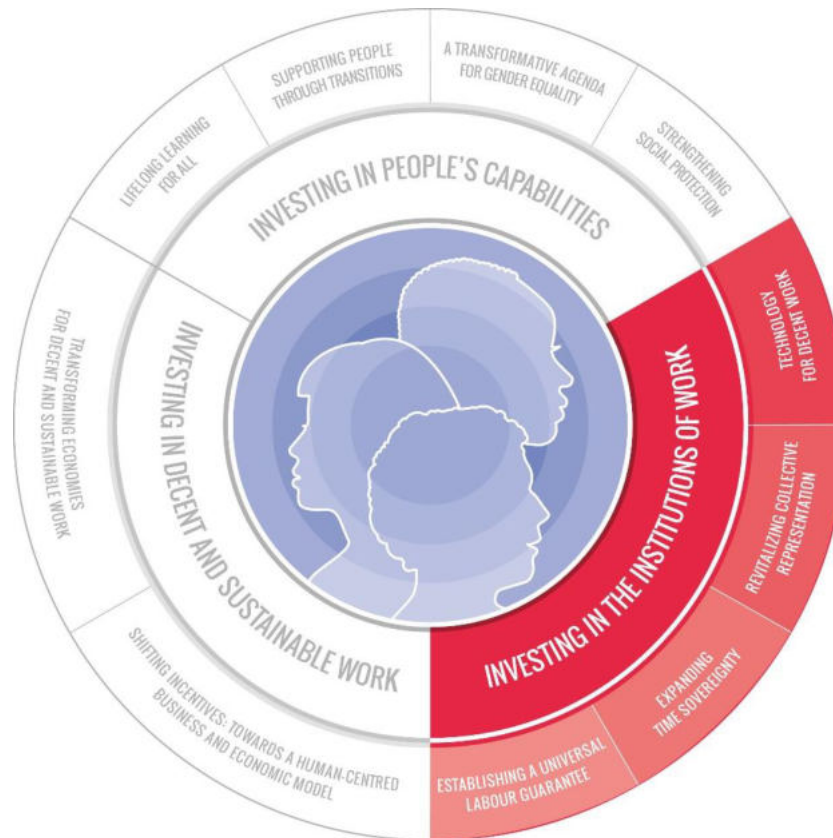
# Pillar I: Investing in people's capabilities



## Pillar II: Investing in decent work



## Pillar III: Investing in institutions of work



# ILO Centenary Declaration for the Future of Work



- **Adopted by the Centenary Labour Conference** (June 2019)
- Recognizes the **transformational changes** in world of work
- Calls for a **human-centred approach** to the future of work
- Reaffirms the **ILO's social justice mandate**.
- Provides **guidance for the ILO's priorities** and programme.
- Represents a crucial **call to action** for the ILO and its member States.





## **CENTENARY DECLARATION**

### **A call to member States and social partners**

- **Ensuring all people benefit from the changing world of work.**
- **Ensure the continued relevance of the employment relationship.**
- **Ensure adequate protection for all workers.**
- **Promoting sustained, inclusive and sustainable economic growth, full employment and decent work.**



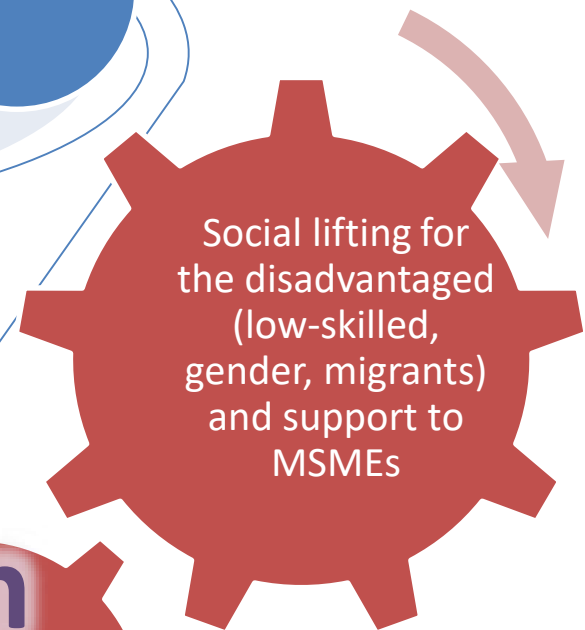
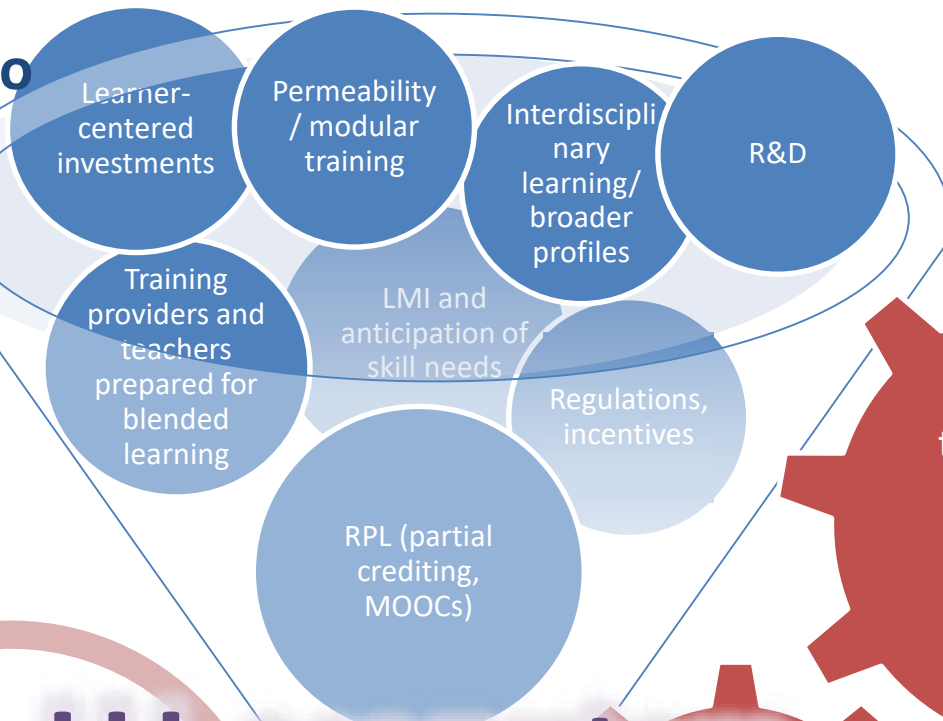
## Capabilities to innovate

Link globally



Enablers

LLL ecosystem









*“When the winds of change blow, some seek shelter, others build windmills”* – an old Chinese Proverb

*Thank you!*

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*Further information*

<http://www.ilo.org/skills>

<http://www.skillsforemployment.org/KSP/en/index.htm>

