E-LEARNING COURSE ON SKILLS ANTICIPATION AND MATCHING

2 NOVEMBER – 18 DECEMBER 2020
📅 7 WEEKS, 60 HRS

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Rationale of Skills Anticipation and Matching
Unit Learning Goals

- Understand the central importance of identifying current and anticipating future skills needs;
- Understand global drivers of change and their implications for skills needs anticipation and matching;
- Analyse myths and realities regarding skills needs anticipation and matching;
- Identify the main principles of skills needs anticipation and matching.
Why we need skills anticipation?

![Diagram showing TVET enrolments and graduates over a 4-year education cycle with a change in demand trajectory.}
Global employment and social issues: Trends 2020 (ILO)

Global overview of access to employment and labour underutilization, 2019

- Working-age population: 5.7 billion
  - Employed: 3.3 billion (57%)
  - Out of labour force: 2.3 billion (39%)

- Total labour underutilization: 473 million
  - Time-related underemployment: 165 million (35%)
  - Unemployed: 188 million (40%)
  - Potential labour force: 119 million (25%)

Youth working-age population (15-24 years): 1.2 billion

- Youth in employment: 429 million (36%)
- Youth in education or training (not employed): 509 million (42%)
- Youth not in employment, education or training: 267 million (22%)
Estimated work hours and jobs lost in 2020

Loss of working hours 2020
8.8%
255 millions FTE*

* FTE: Full-time equivalent
48 hours per week

Job losses
114 millions
50% of the total loss in working hours

Shift towards unemployment
33 millions

Shift towards inactivity
81 millions

Reduction of working hours within a job
50% of the total loss in working hours

Note: Job losses and shifts towards unemployment and inactivity are relative to 2019. The shift to inactivity represents the reduction in the labour force. Job losses are transformed into actual worked hours, while the FTE estimate uses 48-hour work weeks.

Source: ILO Monitor: COVID-19 and the world of work. 7th edition
World is changing

Global drivers of change

Which jobs?
Which tasks?
Which skills and qualifications?

Migration
Technology and innovation
Demographic change
Climate change
Work organization
Globalization
Technology Development and Innovation

- Many estimates on **susceptibility of jobs to automation**:
  - Some argue – potentially all,
  - Half in advanced economies (Frey, Osborne 2013),
  - Asia - around 56% (ILO, 2016),
  - More modest estimates (14% by OECD 2019)

- Automatable ≠ will be automated

- **Opportunity**: Job creation

- **Tasks and skills change**
Demographic Changes

- Developed world is aging fast:
  - Labour shortages expected
  - Skills for higher productivity, employment activation measures (e.g. LLL, technology skills for aging workers etc.)

- Workforce in most developing countries is still young:
  - Challenge to provide young people with relevant skills and to attract investments and create jobs
  - Skills for productivity, economic diversification and enhancement of internal demand for skills
  - Foreseen enhancement of global labour migration

Sources: CIA World Factbook
Globalisation and trade

- Global value chains (GVCs), labour redistribution, delocalisation and relocalisation
- Open trade can promote job creation and economic growth
- Skills are key to the quality and scale of export growth
- Essential for economic diversification (new products and services, markets, technologies)
- The dispersion of skill levels also affects countries' comparative advantage in trade
- Skills act as a buffer that helps reduce adjustment costs

Exporting companies are more aware of skills gaps

- a. Percentage of companies identifying a poorly trained workforce as the main constraint
- b. Percentage of companies offering formal training

Source: EQSM 2009-2019, taking into account the latest available years only
Educational Attainment

- Increase in average years of schooling among 15-24 year olds:
  - In developing countries: from 4.2 to over 7.4 years (between 1990 and 2018), but girls achieve only 83% of boys attainment (UNESCO)
  - In developed countries: from 9.3 to 12 years during the same time period

- More talents compete for jobs
- Crowding out of low-skilled
- More and better skills may lead to economic growth

Sources: UNDP HD Data.
Labour Mobility

- Labour has become more mobile internationally:
  - as economic activity has become more globalized
  - as digitalisation has facilitated virtual access to jobs and talent

- Increased mobility:
  - 2 out of 3 citizens with tertiary education of Haiti, Jamaica, Trinidad and Tobago live abroad. Around third of physicians in the US, Australia, and Canada are foreign-trained

- Increased global competition for talent
- Increased demand for portable skills
- Skills development – not only for which jobs but also for which countries? Where?
Changing work organisation

- Task-based economy and new business models (new employment relationships - who is responsible for skills development?)
- The challenge of productivity and competitiveness requires the adoption of new business practices:
  - Non-routine skills become a key source of competitive advantage
  - Technological and non-technological innovation (cognitive skills)
  - Essential job skills (non-cognitive skills)
  - High performance work organisation (HRD learning organisation strategy)
  - Workplace learning

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**Firms' reliance on temporary labour**

<table>
<thead>
<tr>
<th>In 22 European countries</th>
<th>Use temporary labour</th>
<th>Don't use temporary labour</th>
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<tbody>
<tr>
<td>23%</td>
<td>77%</td>
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<table>
<thead>
<tr>
<th>In 132 developing and transition countries</th>
<th>Use temporary labour</th>
<th>Don't use temporary labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>40%</td>
<td>60%</td>
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</table>

Source: ILO (2016)

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**Figure 1.3 Number of active digital labour platforms globally, selected categories**

Source: Crunchbase database.

Source: WESO - ILO (2021)
ILO Global Research: 32 countries
Skills for a greener future
Energy sustainability scenario, 2030

Figure ES 3. Occupations most in demand across industries in a global energy sustainability scenario, 2030

Sources: ILO (2019); Skills for a greener future (2019).
Circular economy scenario, 2030

Panel A. Occupations with the highest number of new net jobs created in a circular economy scenario

- 52 – Sales workers
- 74 – Electrical and electronic trades workers
- 72 – Metal, machinery and related trades workers
- 33 – Business and administration associate professionals
- 21 – Science and engineering professionals
- 14 – Hospitality, retail and other services managers
- 61 – Market-oriented skilled agricultural workers
- 24 – Business and administration professionals
- 43 – Numerical and material recording clerks
- 83 – Drivers and mobile plant operators
- 95 – Street and related sales and service workers
- 42 – Customer services clerks
- 54 – Protective services workers
- 59 – Other service and sales workers
- 91 – Cleaners and helpers
- 44 – Other clerical support workers

Reskilling measures demanded at all skill levels

**Low-skilled occupations**
On-the-job learning or short training and upskilling programmes will be required.

**Medium-skilled occupations**
Short to longer upskilling and re-skilling programmes, technical and vocational education and training courses will be required.

**High-skilled occupations**
University degrees, longer upskilling programmes and continuous training programmes will be required.

Skills anticipation and matching

Global drivers of change:
- Globalization of markets
- Demographic changes
- Increasing educational attainment
  - Changes in work organization
  - Climate change
  - Technology and innovation

Skills demand
- Better skills utilization
- Measures to improve retention
- Improving work conditions
- Business strategies based on capabilities and human capital investment
- National / sectoral policies and regulations

Skills supply
- National / sectoral education and training policies and regulations
- Lifelong and workplace learning
- Activation measures
- Skilled migration and workforce mobility
- Skills matching and retraining through employment services

Mismatch

Anticipation of skills needs
CONSEQUENCES OF SKILLS MISMATCH

Poor matching between skills supply and demand has many negative consequences, for individuals, companies and can also influence the country's economy and society more generally.

**INDIVIDUALS**
- Unemployment
  - Need to take another job than that they are qualified for
- Direct/Indirect Investment to achieve the qualification and develop skills not returned
- Skills obsolescence
- Effect on wages
- Hiring difficulties
- Need to retrain
  - Loss of original investment
  - Loss of competitiveness

**COMPANIES**
- Low productivity
  - Insufficient product quality
  - Loss of competitiveness

**COUNTRY**
- National competitiveness threatened
- International companies investments hindered
- Public costs of unemployment benefits
- Social exclusion of families

**Source:** Using labour market information, Vol. 1. Guide to anticipating and matching skills and jobs
Skills Mismatch

Mismatch
Quantitative

Surplus
too many skills e.g. unemployed, inactive, new entrants

Shortage
not enough e.g. hard to fill vacancies

May co-exist

Mismatch
Qualitative

Vertical
Qualification mismatch

Horizontal
Skill gaps and mismatch

May co-exist
Vertical and Horizontal Skills Mismatches

- **Overqualified**
  - Overeducated but underskilled
  - Undereducated but overskilled
  - Over/undereducated and over/underskilled

- **Underqualified**

- **Quantity**

- **Quality**

- **Education level**
  - Education field / skill type
  - Quantity
  - Quality
  - Overqualified
  - Overskilled

- **Uni-directional**
Skills mismatch in low and middle income countries (ILO, 2019) Results by region

Skills mismatch over time

- **Skills obsolescence**
  - Skills need to be maintained
  - Skills not used become obsolete

- **Career mismatch** – When jobs and skills mismatch does not approximate
- **Current and potential mismatch**
Implications for skills needs

- A wide range of skills (beyond digital!)
- Core competencies
- STIAM (innovating with social responsibility)
- Technology Operation and Maintenance Skills (TVET)
- Design and systems thinking skills
- Transferable technical skills
Implications for skills needs

1. Specialised technical skills
2. Core competencies
3. Essential transferable and professional skills
4. Craft and entrepreneurial skills
5. Digital skills

- Literacy
- Numeracy
- Digital literacy
- Research culture: important for self-directed learning
- Environmental literacy
Implications for skills needs

1. Specialised technical skills
   - Learning to learn
   - Agility and resilience, stress resistance, persistence
   - CCCC: Communication, Collaboration, Creativity & Critical thinking
   - Future thinking (including own future)
   - Adaptability / flexibility skills: curiosity and mindset to be open to change and innovation

2. Core competencies
   - Agility and resilience, stress resistance, persistence
   - CCCC: Communication, Collaboration, Creativity & Critical thinking
   - Future thinking (including own future)
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3. Essential transferable and professional skills
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4. Craft and entrepreneurial skills
   - Learning to learn
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5. Digital skills
   - Learning to learn
   - Agility and resilience, stress resistance, persistence
   - CCCC: Communication, Collaboration, Creativity & Critical thinking
   - Future thinking (including own future)
   - Adaptability / flexibility skills: curiosity and mindset to be open to change and innovation
Implications for skills needs

- Encouraging job creators, not just those who take jobs
- Deployment of technologies will depend on entrepreneurial and leadership talent
- Growing demand for customised craft products (alternative to competition in e.g. health, fashion, beauty)
- Customised solutions for industries
- Repair services
- New technologies for upgrading, increasing and reducing prices
- Digital entrepreneurship
Implications for skills needs

1. Specialised technical skills
2. Core competencies
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Digital Skills

Basic and generic digital skills

Intermediates and advanced digital skills (IT-user)

Digital applications’ skills

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

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

Examples – industry-specific:
- 4.0 (3D printing, IoT, robotics, AI)
- GRC in services
- BIM in building construction construction

Examples – intersectoral:
- Big Data
- Cybersecurity
Is a perfect match even possible?

- A certain level of mismatch is always present

- Challenge to minimise the problem and its consequences for the economy, society, enterprises and individuals (structural imbalances)

- How?
  - Inform policy / decision making
  - Inform individual decision making
  - Provide services in matching skills and jobs
  - Incentivize local development or industrial policies in close accordance with skill policies
Essentials components of skills needs anticipation

- Institutions (Social Dialogue)
- Analytical capacity
- Methods & Tools
- Data

Labour Market Information (LMI)

Skills needs assessment and anticipation
1. Skills needs = skills demand – supply
4. Skills needs = skills demand – supply

New entrants to the labour market
- supply flows

New jobs – “expansion demand”

Labour force - supply stock

Retirements and other outflows - “replacement demand”
Implications

- No single measure of supply and demand will work to identify the mismatch!
- Flexible and multiple scenarios, assumptions and indicators
2. If one wants to know about the future, one needs to have data about the future
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- The best way to know about the future is to know about the past and the present

- The more and the better we know about past and present, the more robust our vision of the future is

- Caution with promising data on the future
3. The market (labour market) eliminates the imbalance between supply and demand
Labour market imperfections

- Public goods
- Positive externalities
- Industrial and investment policies
- Mismatch between skills supply and labour market demand
- Limited geographical mobility
- Behavioural factors: irrational decisions of labour market actors (careers, wages)
- Rigid wages
- Imperfect information on the availability of skills and jobs
- Imperfect competition (monopolistic companies)
Implications

By providing more information on future skills needs, we contribute to a well-functioning market.

Room for public policy and other incentives (e.g. financial, institutional) to match supply and demand.
Thank you very much for your attention! 😊