BUILDING DIGITAL COMPETENCIES TO BENEFIT FROM EXISTING AND EMERGING TECHNOLOGIES, WITH A SPECIAL FOCUS ON GENDER AND YOUTH DIMENSIONS

Introduction of the Report of the Secretary-General

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Opportunities and challenges offered by digital technologies

- Digital technologies have the potential to transform economies and improve the living standards
- Development gains are not automatic
- The impact depends on the readiness of countries—hard and soft infrastructure
- Building digital skills and competencies is critical
Many forms of “mismatch”

85-90% jobs in Europe will require ICT skills by 2020

By 2030 3-14% of global workforce will need to switch occupational categories

In OECD countries more than 1/3 of the labour force has low ICT capacity;

56% of population has no ICT skills

Schools lag behind in the adoption of digital skills

Large numbers of young people are entering labour markets in developing countries

500 m Chinese and Indian youth will join the workforce in the coming decades;

11 m young Africans to join the workforce each year for the next decade
Considerable Gender Gap

- **Gap in the use and access to digital technologies between men and women**
  - 12% less likely to use internet

- **Under representation of women in ICT specialized occupations**
  - Female employment remains in low-growth occupations

- **Under representation of women in STEM fields**
  - Lack of access to formal education
  - Cultural barriers
  - Girls less able to “do” science
  - Lack of integration of arts into STEM
Pyramid of digital skills

- Adoption
  - Basic education and literacy
  - Familiarity with technology devices and services

- Basic use
  - Basic understanding of technologies, software and applications
  - Knowledge of digital rights, privacy, security and permanence of data
  - Ability to collaborate, communicate and create using technologies

- Creative use and adaptation of technologies
  - Computing skills
  - Familiarity with algorithms

- Creation of new technologies
  - Sophisticated programming skills
  - Knowledge of complex algorithms

Complementary skills

• Digital skills are not enough to adapt to the changing labour markets demands

• Increasing demand to strengthen unique human skills that cannot be easily replaced by machines, computers and robots:

  complex problem solving; sense making; social intelligence; computational thinking; novel and adaptive thinking; cross-cultural competency; new media literacy; transdisciplinary; design mindset; cognitive load management; virtual collaboration; critical and logical thinking; creativity; soft skills for digital entrepreneurship
Strategies to build digital competencies

1. Incorporating digital competencies in the education system

2. Enabling environment (investing in digital infrastructure, policy and institutional development)

3. Collaboration among stakeholders
1. Incorporating Digital Competencies in the Education System

**Formal Education**
- Digital competencies as part of education goals
- Education policy to promote the use and adoption of digital skills
- Training at the primary, secondary, and tertiary school level
- Teacher-training strategies

**Vocational training and lifelong learning**
- Vocational training in digital skills for job opportunities
- Training in coding, data analysis and e-business
- Emphasis on flexibility and life-long learning
- Opportunities for public-private partnerships
Emerging Technologies for Digital Competence

Massive Open Online Courses (MOOCs) potentially extend access to high-quality educational content to anyone, anywhere.

Open access to scientific literature and educational resources.

Technology-mediated teaching and learning (e.g., Big Data and Artificial Intelligence, IoT) potential for virtual classrooms to transform remote learning into an interactive and engaging experience.
2. Enabling environment: investing in digital infrastructure, policy and institutional development

Selected National Strategies aimed at increasing digital competencies

- Digital Bulgaria 2020
- Innovation and Skills Plan
- National ICT Master Plan
- National Digital Competencies Initiative
- Revised National Broadband Policy and Broadband Strategy
- Digital Uganda Vision
- Digital Skills and Inclusion Policy
- Federal Open Data
3. Collaboration among stakeholders

• Public private partnerships (e.g. Portugal, UK)

• Collaboration among countries (e.g. Uganda-South Korea)

• Multistakeholder collaboration (e.g. CSTD)
## Policy Recommendations

### MEMBER STATES
- **Adequate infrastructure**
- **Include digital competencies in formal education curricula**
- **Encourage women to enroll in STEM fields**
- **Support stakeholders in providing digital skills training**
- **Foresight on ICT trends**

### INTERNATIONAL COMMUNITY
- **Collaboration to create initiatives that aim at building digital skills**
- **Identify infrastructure requirements needed for digital skills**
- **Promote the use of digital methods**

### CSTD
- **Strengthen the Gender Advisory Board with respect to building digital competencies**
- **Foster international cooperation to build linkages in academia**
- **Support the provision of training programmes for policy makers related to technological change**
- **Support technological capacity building efforts in developing countries**
- **Support countries in their efforts to identify future trends in capacity-building needs**
THANK YOU

http://unctad.org/cstd