Digital transformation of Vocational Education and Training (VET)

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European Commission - Joint Research Centre

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Science for policy

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Our purpose

The Joint Research Centre provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society.

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JRC Digital Education and Skills research

Education, Skills and Employment for a fair twin transition

We look at **skills and competences for the twin transition** covering both **education** (from a lifelong perspective) and **employment**.

Identify and measure digital and green skills, as well as competences needs and gaps.

Analyse how AI are affecting the job market through algorithmic management and platformisation of work.

Examine the implications of new digital technologies and AI in education and training, including digital well-being.

Support and evaluate education and training policy development for the twin transition.

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Society is facing
many challenges
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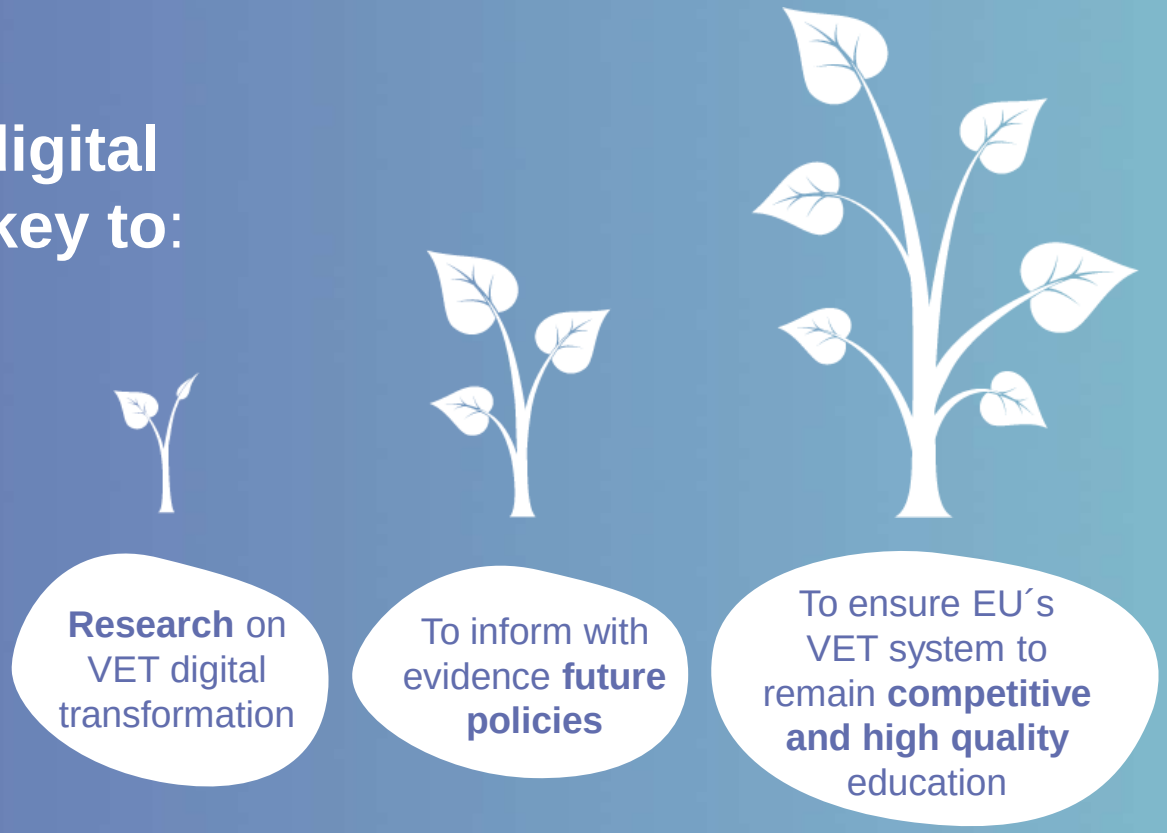
Vocational Education and Training

iVET and cVET

Focus on VET: rationale behind

- VET: **bridge between education and labour market**
- Research on VET **digital transformation** is **key to**:



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VET and the digital transformation

Related policies and initiatives from European Commission

- 2020 European Skills Agenda
    - Council Recommendation on VET for sustainable competitiviness, social fairness and resilience (recommending having a modern and digital provision of VET, according to the current and future requirements of the labour market)
- Digital Decade
- Digital Education Action Plan 2021-2027
- **The Osnabrück Declaration on VET as an enabler of recovery and just transitions to digital and green economies.**

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Focus: support to the **digital transformation of VET**, including work-based learning modalities

Emerging trends and technologies in VET, from the practitioners' side

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Linus Zoll & Google DeepMind / Better Images of AI / Generative Image models / CC-BY 4.0

The next internet

6G connecting cognition, space and action
digital twins

Immersive technologies

Virtual worlds, XR, AR

Joahna Kuiper / Better Images of AI / Little data houses (square) / CC-BY 4.0

Datafication

Learning analytics, data spaces for education

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Digital credentials

Verifiable, micro, decentralised

Image by Comuzi / © BBC / Better Images of AI / Mirror D / CC-BY 4.0

Artificial Intelligence

Learning companions

Anton Grabolle / Better Images of AI / Human-AI collaboration / CC-BY 4.0

Distributed agency across computational systems and humans

Understanding digitalisation in VET

→ VET is **more exposed to digital changes** due to its proximity to digitalisation in the economy.

→ **Changes in the workplace are the main drivers of digitalisation** in VET.

→ **Digital skills shortages** are contributing to the **shift** towards using emerging technologies.

→ Digital learning in VET**: Using digital tools for learning** VS **Learning to use digital technologies used in industry**.

A new wave of technology

- **Emerging trends** are **changing the digitalisation of VET**.
- **Benefits**
  - Learning more engaging
  - Enabling more practical experiences
  - Enhancing inclusion for learners
- **Challenges**
  - Rapid pace of change and speed of technological evolution
  - Infrastructure and funding/investment,
  - Teachers' and trainers´ competences
  - Concerns about engaging with private EdTech providers

Preliminary takeaways from research

- Need for a **better understanding** of how the **emerging trends**, (generative AI, virtual worlds…), **affect VET**.
- **Limited large scale research** showing the impact of them on education.
- The **opportunities** but also **challenges** that these trends could provide to VET are high, especially in relation to VET's capacities **to respond to labour market needs**.
- Teachers' skills and competences are key.
- Digital divide
- Specific jobs skills requirement should be included in training.

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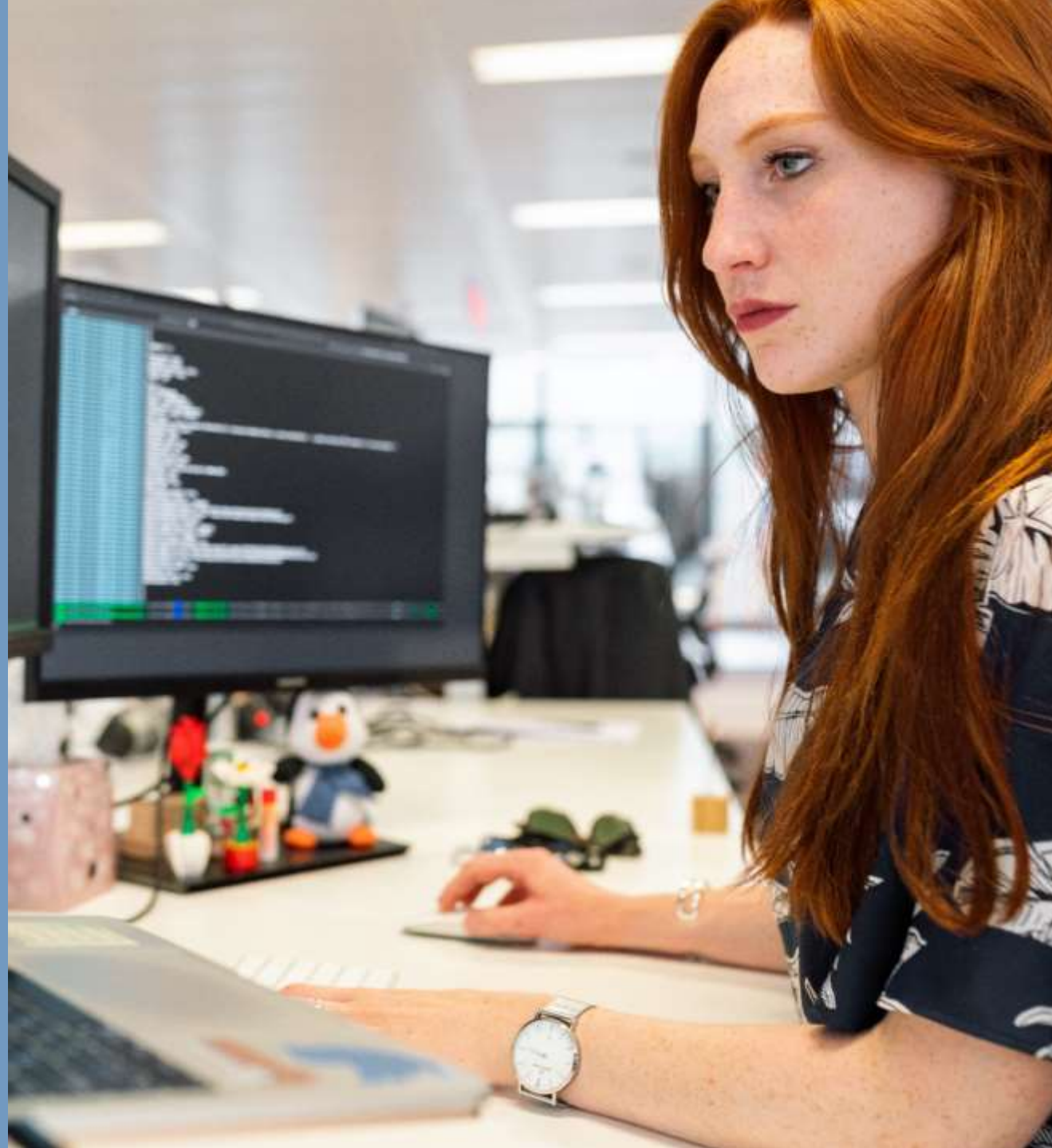
Enablers of digital transformation of VET



Enablers from literature

Holistic development of learners' skills	**Teacher training for changing roles**	Pedagogical and transformative potential of digital technologies	Flexible accreditation mechanisms
Career education and guidance	Development of information systems	Ecological approach and collaborations	**Inclusion and sustainable human development**

Digital technologies and competences/skills are crucial for **competitiveness and inclusion**.

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Thank you

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