



United Nations  
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# Guidance Note 11

## Using digital technologies effectively in support of learning and training for employment

From the Report: Education for the most marginalised post-COVID-19: Guidance for governments on the use of digital technologies in education  
**ACT THREE (OF THREE): GUIDANCE NOTES**

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# Guidance Note: Using digital technologies effectively in support of learning and training for employment<sup>1</sup>

## Context

Latchem (2017: 28–29) has commented that ‘There is little in the way of systemic application of ICTs across the TVET sector in ways that will achieve the fundamental transformation of education and training that is called for’. This view was reinforced by more recent joint ILO (International Labour Organisation and UNESCO work that found increasing evidence that while the digitisation of TVET is included in multiple policies and actions at all levels of government, there are few examples of governments having a unitary coherent strategy towards it; much innovation in digital TVET is driven by individual education and training institutions (ILO and UNESCO 2020). Despite various small-scale or pilot projects in which digital technologies have been used to support skills acquisition, there are few agreed good practices specifically for the sector beyond generalisations that apply across all aspects of learning through the use of such technologies.

There are three main reasons for this lack of systemic application of digital technologies within TVET:

- Traditionally most education systems across the world have been dominated by academic and intellectual interests, which privilege schools and universities over vocational and technical training.
- This has been associated with a dearth of funding for vocational training; if education as a whole is underfunded, then vocational education and training is yet further disproportionately underfunded within the education sector as a whole.
- The application of digital technologies within vocational education and training is complex and presents specific challenges for the use of traditional digital technology. Not least, vocational training institutions, teachers and students often lack the skills necessary to use and benefit from digital technologies.

Yet, as illustrated in *Section 9.4* of this Report, universities across the world are not producing the knowledge and skills required for the creation of thriving economies, be they the skills for entrepreneurship or for the very substantial requirement for well-trained labour across industry. Given that many university degrees are not worth the paper they are written on, there is a strong argument for governments to restructure funding away from universities and towards TVET, not only formally within colleges, but also through on-the-job training, and other informal means of learning. Indeed, with the greater global emphasis now being paid to lifelong and lifewide learning, this would seem to be an ideal opportunity to develop a novel systematic approach to using digital technologies, both old and new, in building the flexible skills based required by all economies in a post-COVID world, that considers the full spectrum from low-tech to high-tech.

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<sup>1</sup> Lead authors Paul Comyn (ILO) and Tim Unwin.

Particular challenges that emerged during and following the lockdowns in the first half of 2020 include the following:

- Many existing learning solutions using digital technologies are not well adapted to vocational or technical training, and seem unlikely to offer a permanent replacement for face-to-face teaching.
- The central place of work-based learning (WBL) in many vocational and skills programs was disrupted as a result of lock downs and unemployment.
- Much vocational education and technical training involves the learning and development of practical skills which cannot yet be replicated readily using simulations and virtual reality (VR) or augmented reality (AR) tools.
- There remain deep inequalities in access to and affordability of digital technologies which mean that those who most need such training can often least afford them.

In addition to the many recommendations contained within this Report about using digital technologies more broadly within education and learning, particular attention is required to develop innovative ways of using these technologies to enhance the appropriate and effective delivery of a wide range of vocational and technical training. The poorest and most marginalised on whom this Report focuses rarely attend higher education, and often have learning preferences best suited to practical training directly linked to workplace practice. As such, they have most to gain from a reinvigorated technical training sector. This would also have positive repercussions for enhancement and formalisation of the informal sector more widely. The recommendations below are of most immediate importance, but further more detailed information can be gathered from the subsequent examples and suggestions for further reading.

## **Guidance**

Governments should first focus on the following five main issues when addressing the development of technical and vocational education and training through the use of digital technologies:<sup>2</sup>

- 1. The use of digital technologies for technical and vocational education and training should be prioritised nationally since this sector provides valuable learning opportunities that are of direct benefit to the productive economy.**
- 2. Increased investment, both absolutely and as a share of the national education budget, should be made in digital solutions for practical skills development.**
- 3. Distance-learning and short-course content should be developed for core, entrepreneurial and employability skills.**
- 4. Flexible assessment and certification approaches need to be developed and implemented to recognise digital modularised and micro-learning in TVET and skills development, so as to support the introduction of more flexible programmes and pathways.**
- 5. Innovative ways of using digital technologies for workplace training should be developed. These might include the use of VR and AR as well as project-based virtual placements.**

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<sup>2</sup> Note that this is over and above the general guidance on using digital technologies for effective learning recommended elsewhere in this Report.

## Examples

Examples and resources for effective use of digital technologies in vocational training include:

- Atingi, a German Development Cooperation platform, which provides digital learning materials, including those relating to vocational training and employability. Young people are able to make use of the resources at any time, free of charge and regardless of location, <https://www.atingi.org/en/tool>.
- GIZ-Project YES Kosovo, including online training on competence based education and training for teachers, as well as use of AR for training in welding, <https://www.giz.de/en/worldwide/66634.html>.
- Pro-Educação — GIZ funded basic and vocational education and training project in Mozambique, particularly in support of girls and women <https://www.eskills4girls.org/pro-educacao-basic-and-vocational-education-and-training/>.
- OIT CINTERFOR (no date) *Recursos digitales de las instituciones de la red de OIT/ Cinterfor*, <https://www.oitcinterfor.org/node/7750>.
- Omar Dengo Foundation, <http://fod.ac.cr/nuestro-trabajo/>.
- UNESCO-UNEVOC (no date) *OER in TVET Resources*, Bonn: UNESCO-UNEVOC, <https://unevoc.unesco.org/home/commented+list+of+platforms+and+services&conte>.

## Suggested further reading

- Achtenhagen, C. and Achtenhagen, L. (2019) The impact of digital technologies on vocational education and training needs: an exploratory study in the German food industry, *Education + Training*, 61(2): 222–233, <https://www.emerald.com/insight/content/doi/10.1108/ET-05-2018-0119/full/html>.
- Brolpito, A., Lightfoot, M., Radišić, J. and Šćepanović, D. (2016) *Digital and online learning in vocational education and training in Serbia*, European Training Foundation, [https://www.etf.europa.eu/sites/default/files/m/DC024C02AA9B9384C12580280043A0B6\\_DOL%20in%20VET%20in%20Serbia.pdf](https://www.etf.europa.eu/sites/default/files/m/DC024C02AA9B9384C12580280043A0B6_DOL%20in%20VET%20in%20Serbia.pdf).
- Filmer, D. and Fox, L (2014) *Youth employment in Sub-Saharan Africa*, Washington DC: Agence Française de Développement and World Bank, <http://documents1.worldbank.org/curated/en/424011468192529027/pdf/Full-report.pdf>.
- ILO (2020) Skills note: Distance learning during the time of COVID-19, Geneva: ILO.
- ILO and UNESCO (2020) *The digitalisation of TVET & skills systems*, Geneva: ILO.
- Lab Tech: Innovative digital learning content for technical education online <https://labtech.org/covid-19-support/>.
- Latchem, C. (ed.) (2017) *Using ICTs and blended learning in transforming TVET*, Paris and Burnaby, BC: UNESCO and COL.
- Palkova Z., Hatzilygeroudis I. (2019) Virtual reality and its applications in vocational education and training, in: Zhang Y. and Cristol D. (Eds.) *Handbook of mobile teaching and learning*. Springer, Singapore, [https://doi.org/10.1007/978-981-13-2766-7\\_88](https://doi.org/10.1007/978-981-13-2766-7_88).
- SFIVET : IV4VET — Interactive videos for vocational education and training <https://www.sfivet.swiss/project/iv4vet-interactive-videos-vocational-education-and-training>.
- UNESCO IITE (2003) *Analytical survey: The use of ICTs in technical and vocational education and training*, Moscow: UNESCO IITE, <https://iite.unesco.org/pics/publications/en/files/3214613.pdf>.

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