

## Voices from the Field - (Dual) VET and New Technologies

Interview with DC dVET members and projects

*For VET systems, keeping pace with new technologies and the changing skills requirements is an opportunity and a challenge in one. How does the situation evolve in developing countries? And how do DC dVET members address the topic in their VET projects? Pius Frick (LED Moldova), Anton Gojani (ADA Kosovo), Marion Pfennigs (German Embassy Pakistan) and Olga Tinoco (SDC Honduras) share their experiences and thoughts.*



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Labour market experts agree that due to new technologies, skills requirements are substantially changing. Do you observe such changes in the labour market of your project country or region?



In Honduras, we do observe this kind of change, however at different speeds. As a lower-middle income economy occupying the position 101 out of 140 countries according to the World Economic Forum, Honduras shows greater gaps in the ICT adoption (position 124) and in innovation (position 106). We observe that the adoption of new technologies happens faster in large companies than in small ones. These technological changes indeed demand new skills in the workforce, which is a challenge given the already substantial gaps in terms of job skills.

In Kosovo, there are rapid changes in the demand for new skills. The increasing application of new technologies and the young age of the population are driving factors in this change. Increasing investments in equipment and technology also foster competition in the knowledge market and specifically the need for blended skills - including digital skills - in all sectors. Communication skills in foreign languages are also more in demand in many economic sectors.



The rapid change in technologies and the need for a skilled labour force is clearly felt in Pakistan. It is therefore important that the industry and training institutes stay abreast of the technological change and pro-actively grasp opportunities by offering qualifications that are in high demand by the industry and by young people. The VET system in Pakistan has already reacted by offering, amongst others, courses in mechatronics, robotics and artificial intelligence.

In Moldova, there is a growing IT sector, which is very engaged in skill development on various levels, from secondary schools to VET centers and university level. Companies are also actively supporting non-formal education initiatives. There seems to be a real hunger for more and better trained staff in this sector. The call for updated and stronger digital skills comes not only from the IT industry but from many different sectors.



What are, from your point of view, the most important opportunities related to new technologies for (dual) VET in your project country? What might be the most important risks, and how to overcome them?



In Pakistan, Germany supports competency-based education and training. Like dual VET, it has a strong focus on practical learning on the shop floor. New and green technologies offer important opportunities. Hi-tech trades generally lead to better paying jobs. However, they require well trained graduates with a good practical training. Currently very few educational institutions can afford to have their workshops equipped with the latest high-tech machinery. This is the reason why we support close cooperation with the private sector – this is the only way to offer relevant and up-to-date training to students.

New technologies call for good foundational skills like numeracy and literacy (including English). In addition, the so called 21st century skills become more important to handle the constant change, which will further accelerate. Problem solving, critical thinking, personal and interpersonal competences and digital competences must be strengthened. These competences call for a change in the general educational paradigm. This is a big challenge for education systems which are still very teacher-centred and where rote learning is still predominant.



Whereas the structural preconditions for a stronger digital culture and economy are rather good in Moldova, preventing a digital divide remains an issue. In general terms, digitalization of work will most probably provide young people new opportunities by enabling increased mobility between trades and labour markets.



New technologies offer new opportunities for social inclusion, e.g. by reaching remote areas and enabling flexible ways of learning and working. They offer new possibilities regarding the teaching and learning of VET, encourage creativity and reduce the need for high-cost equipment (e.g. by simulators). The application of new technologies will make VET more attractive for students and equip them with relevant skills. New technologies have the potential of helping reduce the skills inequality between one country to another and increase the chance of easier mobility between labour markets.

On the other hand, there are some risks and challenges that need to be taken into account: There is the challenge of keeping the curricula up to date; teachers and trainers will need to be continuously trained. The risk of a digital divide and of an addiction to the virtual world amongst young people need also to be addressed.

New technologies stimulate the demand for (foreign) language skills, digital literacy, critical thinking, customer services quality management, among others. These new or enhanced fields of demanded skills create challenges of inclusion in the least favored groups, associated with underlying gaps in basic education. At the same time, the inflexible and outdated training offer of the national VET system makes closing gaps more difficult. Options to meet the challenges include recognizing and certifying dual training in the national VET system to respond to the specific needs of companies, leveling processes to fill basic education gaps in vulnerable populations, and creating measures to foster social mobility. In parallel, there must be an evolution in the national educational system through public-private partnerships to stimulate creativity, technological innovation, critical thinking, and the ability to adapt to change.



What kind of added value can development cooperation provide in this field? Would you like to point out any specific project (component) linked to new technologies which might serve as an inspiration?

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LED Moldova aims to strengthen digital competences within both formal and non-formal education.

Together with other donors and ICT companies, we support the [National Center for Digital Innovation in Education](#), located in the State University for Pedagogy. This centre will act as the hub for digital initiatives combining technology with the necessary pedagogical foundation. The cooperation with ICT companies is vital for achieving this goal.

An example for support in the non-formal area is the [Young Maker Club](#) – a free time offer for VET students to experiment with technology in a fun way. Like in other maker clubs, young people gather and work together on freely chosen projects. There is no teaching, no instruction. Instead, there is the internet and resource persons who can give hints. The organizer of the Young Maker Club is the Association of IT companies in Moldova.

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I believe that development cooperation can play an inspirational and an advising role without any self-interest. As an example: In Pakistan, women are for the most part working in traditional working roles. Through our development cooperation (e.g. the [TVET project with GIZ](#)) we can provide inspiration by showing that in other countries, women are successfully working in jobs which are still unthinkable here, e.g. as a butcher or as an IT-specialists. If the partner country is taken with the idea, we can partner up and provide technical advice.



I still remember meeting a class of girls at a TVET institute we supported with specialized IT-courses in a rural mountain area. Those girls were making money by programming their own websites and their families were very proud of them. This is the kind of change we want to bring to Pakistan with our TVET activities.

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International cooperation can play a facilitating role for public-private interaction and promote structured dialogues that generate the necessary openness to learn about good practices and technological innovations with a potential for up-scaling.

At [ProJoven](#), we have promoted disruptive initiatives for the national context with dual training pilot projects in the construction and tourism sectors. Likewise, in the use of [simulators](#) for the training of heavy machinery operators whose application is also planned to be expanded to other occupations (electricity, forklifts or elevators). We are also promoting the training of 3D printer operators for the manufacturing of prosthetics, implants, among others.

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In Kosovo, there is still need for the development of technology-oriented VET. Projects such as [ALLED2](#) are boosting the application of smart systems to foster an evidence-based policy making, which is an important pre-condition for running an effective and future-oriented VET system. This objective is e.g. pursued by the establishment of an efficient and broad-based Labour Market Barometer (Labour Market Information System, LMIS) and by increasing the competences of all involved stakeholders. This will allow for a much better matching between the skills offer and the skills demand.



The Covid-19 epidemic is having a massive impact on teaching and learning around the world. Did the VET system(s) of your project country make use of new technologies to cope with the situation?



During the COVID-19 pandemic, we have learned that education and economic development need to react fast and accommodate to new and uncertain situations. Kosovo's educational institutions have reacted, and it is important to use this dynamic in post pandemic period, especially in the area of VET. The current challenges faced by students, schools but also by the government, businesses and the society as a whole call even more for a well-qualified workforce. Digital tools are becoming more than ever an integral part of every day's life, including in VET.

With the COVID 19 pandemic, the transition from face-to-face to virtual professional training has been possible through technological learning and gamification platforms to maintain interaction between students and their instructors. To achieve this, we have developed preparatory activities for digital and technological literacy for both the instructors and youth in training, as well as different online tools and contents (e.g. see this [workshop](#) on psycho-social aspects). We have also ensured the connectivity and the necessary tools (computers and tablets for instructors) to guarantee vulnerable populations access to virtual training (mostly through cell phones).



In addition, we support local partners in relevant activities to meet the country's needs associated with the crisis, including the development of personal protection equipment (PPE) with 3D printers to provide supplies for the health system and VET centers.



The teachers and instructors were struggling hard. The bigger part of VET teachers has rather low digital skills and the task to organize remote learning over night was simply a mission impossible. But on the bright side, many teachers have made big steps in relatively short time. Also, initiatives to work together on content have mushroomed – much more in general education than in VET, which has the challenge that it is highly fragmented. One of our projects brings together instructors and teachers of the same trade in order to work together on digital content. Unfortunately, teachers are so much struggling with the day-to-day tasks that they hardly can focus on anything else. Hopefully, this changes in the coming months.

When the lockdown restrictions hit and all TVET-institutes closed, the TVET system used new technologies; training contents were rapidly prepared for a digital transmission. Teams found each other and continued working through the internet on work streams such as curriculum development, teacher training (on training methodologies). Furthermore, a training of assessors of institutes (for their accreditation) was conducted online. But it remains a challenge, especially since a lot of students – and specifically the most vulnerable ones - lack digital access.

