VOCATIONAL EDUCATION AND TRAINING REPORTS

German Office for International Cooperation
in Vocational Education and Training (GOVET) (Eds.)

# Effects of the COVID-19 Pandemic on Vocational Education and Training: International Perspectives of Policy Makers and Practitioners

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Federal Ministry
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# Preface

Dear readers,

The coronavirus pandemic has affected all our lives deeply over the last two years. Millions of people have been afflicted by the disease, with some cases long-lasting, severe, or even fatal. It is not yet fully clear what the consequences of the pandemic will be. Healthcare systems reached the limits of their capacity and were overwhelmed at times. While the economy suffered considerable damage, social repercussions should not be underestimated. The impacts on initial and continuing training have also been enormous all over the world. Action needed to be taken everywhere in order to deal with school and business closures, with interruptions to training, and with the particular requirements created for trainees and VET staff.

During the initial months of the crisis, the Federal Institute for Vocational Education and Training (BIBB) was already publishing analyses of the pandemic's ramifications for the labour and training market in Germany. Further surveys focused on so-called key occupations in public services and on maintaining the basic functions of society and the state in areas such as health, logistics, and food supply. Around half of these occupations require workers to have completed a programme of vocational education and training. This shows just how critical VET is for our economic system. Moreover, the importance of vocational education and training as an element in our crisis response capability once again became apparent. It enables us to develop prognoses and recommendations for policymaking and policy implementation in a rapid and research-based way.

International cooperation is needed more than ever before in light of the arising global challenges. Within the work environment at BIBB, such cooperation offers us an opportunity to learn with and from one another, to create new approaches towards teaching and learning, and to equip young people with the tools necessary to shape their future. If we are to find encouragement in a crisis, then new ideas for the structuring of teaching and learning must be developed everywhere. Such process includes the piloting and firm pedagogical establishment of digital instruments and ensuring that participants have reacted and continue to react to challenges in an impressively flexible manner. This also applies beyond national borders.

The Ministry of Education and Research (BMBF) and BIBB have maintained international cooperation throughout the pandemic despite all the restrictions. The bilateral cooperation

agreements into which the BMBF has entered receive support from GOVET and are expressly aimed at networking experiences and strategies related to combating the consequences of the pandemic for training. The areas of policymaking, academic research, and practice were brought together via a series of events covering this topic staged in conjunction with our international partners. The present publication documents the learning experiences which were shared and discussed within this framework. It builds bridges between partners across the world and showcases numerous good examples of how we can react to crises and adjust more resiliently to future challenges.

I hope you enjoy exploring this view into the world and wish you a stimulating reading.

Professor Dr. Friedrich Hubert Esser
*President*

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**USA**

*Ralf Hermann, Hannelore Kress, and Julia Olesen*

# Introduction: Responses to the global pandemic. Analyses, best practices, and experiences in Vocational Education and Training

The outbreak of the COVID-19 pandemic imposed manifold changes on our lives in the years 2020 and 2021. The challenges came rapidly and on a global scale. As of mid of 2021, around 200 million infections were registered worldwide, and the death toll exceeded four million people according to WHO statistics (WHO 2021). Many cases remain unreported since access to medical treatment cannot be taken for granted for many people in the world. Temporarily and repeatedly, public life came to a halt in many places and regions in the world. We had to accept far-reaching restrictions of contact and mobility and to mediatise large parts of our communication.

As for our economies, human development, and the social fabric, the COVID shockwave had immediate effects throughout the world. Severe mid-term and long-term impact is expected, although it is only vaguely predictable so far. In June 2020, the World Economic Forum declared "a crisis like no other" in light of global growth rates plummeting (IMF 2020), and the World Bank measured a 3.6 percent decline of the global GDP at the end of the year (World Bank 2021). Within globally interdependent supply chains, local production fallouts caused ruptures in distant places. A not yet determined number of enterprises went bankrupt; others were only saved by public subsidies. Winners are digital trading platforms and online business providers in consumption, digital devices sourcing, and online communication service provision.

According to the ILO, 17.3 percent of full time equivalent jobs (FTE), 495 million positions, were lost in the second quarter of 2020 (compared to Q4/2019), whereby lower middle-income countries were hit the hardest and women affected disproportionately (ILO 2020). Recovery and resilience depend on sound national and regional strategies. The ILO calls to commit to a human-centered, inclusive, sustainable, and resilient approach to economic recovery (ILO 2021a). At the same time, it is obvious that for large companies the shift

to a new model of working and training was easier to manage. Micro, Small, and Medium Size Enterprises (MSME) were to a larger extent faced with infrastructure issues, limited digital literacy of users, and cost aspects in training their employees online (ILO 2021b).

COVID-19 also interfered with international cooperation in all fields – the way we come and work together. Yet, the crisis clearly showed that collaboration across borders orientated towards the common good is more than ever required. A unique and successful effort in vaccine development paved the way for a return to some state of normalcy. However, it is obvious that a "pandemic", a global health issue, cannot be overcome by insulated solutions. Recurring waves of infections and the constant development of variations show that the global health challenge is far from over. COVID-19 is a tangible prototype of a global challenge that can only be successfully met by global cooperation. However, access to vaccines, patent related questions, and the scaling-up of production capacities in the countries where they do not sufficiently exist remain challenging.

Apart from the impact of the pandemic on healthcare systems, the global economy, and companies, the largest group affected, yet much less visible and present in news coverage, is the youth of the world. Not only companies went into a shutdown but more importantly the global education system closed for several weeks, and in some parts for ten months. Learners' biographies were disrupted completely; children and youth were deprived of their educational and social structure from one day to another. We only start to understand the impact of these factors on their personal and educational development.

### The impact of the COVID-19 pandemic on VET – disruptive, challenging, and digital

Teaching, learning, and training were adversely affected by the pandemic. Vocational Education and Training (VET) had to make adjustments as quickly as possible, dealing with school closures, limited work-based learning opportunities, delays in examination, and disrupted learners' biographies. In the on-and-off settings of face to face and distance learning, the lack of continuous pedagogical guidance for apprentices appeared to be a key issue in many places.

At the same time, digital transformation has been immensely accelerated due to the pandemic related confinements. Out of necessity, the use of digital communication tools became a daily routine for many; "home office" and "home schooling", a widespread reality – a new normal that for working women often turned out to be a pushback in an old role cliché of household managers. The sudden urge for digital communication, teaching, and learning amplified the transition process that has been underway for about two decades. It pushed to dare to experiment and revise teaching and learning roles (or simply have teachers and trainers learn from their younger trainees and students). As digital tools were virtually the only way to continue training under institutional lockdowns, new ideas for and approaches to learning have emerged. Teachers and trainers rushed to supply materials for students and trainees without really considering how good they were, while others remembered the traditional TV format. The closure of the education system lead to students not owning an in-

ternet-connected computer at their own disposal at home concentrating in small apartments with other siblings, using smartphones to follow the instructions, or just losing track of their teachers' updates and eventually falling out of the system. The data analysis on terminations due to COVID-19 is yet to be established.

Teachers, trainers, and students realized soon enough that digital tools are not magic wands to metamorphose learning and teaching by themselves. They need to be used with pedagogical and didactical mastery – a learning curve that has just begun and that is at least as critical as technological tools and competencies. Other aspects, such as security and data protection, have been neglected due to the urgency of requiring digital solutions for learning and teaching. These questions and the overwhelming global market power of only few digital companies are gaining more prominence in public discourse.

Across borders and around the globe, education practitioners as well as policy makers try to develop responses to the ongoing crisis, to envision resilient education and training systems for the future, and to counteract the widening of the digital divide. While devising and probing new technologies, processes, and understandings of teaching and learning, we are right in a global learning lab ourselves, wherein new ideas emerge everywhere and experience teaches us what works and how we can get better. Sharing this knowledge and fostering international exchange on VET in the global digital transformation has been an obvious priority.

At the time of compiling this publication, mid-2021, many countries have returned to schools and learning places. Although "returned" may not be the right term – most education systems still experience a situation with little security for mid-term planning due to ubiquitously threatening restrictions and dependency on infection rates. One might argue that the new way of learning and teaching is therefore not purely digital but rather a blended learning approach with complete flexibility and necessity to respond to changes in the learning environment on short notice. Despite the fact that when writing this text we are well 1.5 years into life in a pandemic situation, we are far away from a "new normal". The unprecedented situation we have been in since 2020 also has an impact on research, projects, and bilateral cooperation in VET.

### International cooperation in VET during the pandemic

The Federal Institute for Vocational Education and Training, BIBB, responded immediately to the COVID-19 crisis by carrying out research on training market development, "systemically relevant" professions (i.e. jobs in critical infrastructures and services), digital pedagogy and further training of trainers, and more.[1] BIBB and its researchers analysed the short-term

1 Cf. Helmrich, Robert; Kalinowski, Michael; Braun, Uta (2020): Bedeutung und Beitrag der Berufsbildung in der Krise – nicht nur in der Krise brauchen wir Berufe, die helfen und Strukturen erhalten. Bonn. Link: https://bibb-dspace.bibb.de/rest/bitstreams/5b5f9cda-3e77-42c4-9559-c31d16f8edc6/retrieve (Retrieved on 27.07.2021).

impact of social and economic restrictions on the apprenticeship market and developed forecasts at an early stage, allowing policy makers and the economy to develop first activities to counteract and alleviate the impact of the COVID-19 pandemic.[2]

Within BIBB's international department, the German Office for International Cooperation in VET (GOVET)[3] started to analyse international VET developments immediately after the first wave of COVID-19 had started to affect education and training institutions around the world. In particular, GOVET scrutinised the developments in VET cooperation countries of the Federal Ministry of Education and Research (BMBF), and by now issued a series of five online status reports on the referring countries with particular emphasis on digital responses and strategies.[4] BIBB is grateful to international partners, German Embassies, German Chambers branch offices abroad (AHK network), and development agencies such as the GIZ who thankfully provided valuable information for these enquiries.

### Bilateral workshops as an exchange platform

In order to proceed from analysis to exchange and mutual learning, BMBF and GOVET decided to call for bilateral expert workshops with selected partner countries that BMBF holds strong VET cooperation ties with. From July 2020 to April 2021, virtual workshops involving the USA, Israel, Costa Rica, South Africa, Italy, Ghana, and Russia took place. As intended, technical expertise on TVET and digital learning met with research, practitioners, and politics. The virtual format allowed for a broader participation of technical experts and affiliated partners in the referred countries. The total number of almost 250 participants exceeded by far what would have been the limits of participants in a real encounter of policy partners and a selected few. While being a very cost-effective format of exchange, the virtual workshop also displayed its limitations. In a dense timeframe, it is challenging to allow multiple voices per country, allocate enough time to each presenter to provide their inputs, and at the same time facilitate a substantial discussion. The informal continuation behind the scenes in "real" meetings often leads to further exchange, creative dissent, and new ideas. There is no virtual substitute to this.

The first workshop was conducted in cooperation with representatives from the U.S. Department of Labour in July 2020. At this point in time, the experts from the USA and

2 Publications in relation to the COVID-19 pandemic can be found here (mostly in German): https://www.bibb.de/de/124168.php (Retrieved on 27.07.2021).

3 GOVET is a Federal Government facility established by a cabinet decision in 2013, with the mandate to foster coherent inter-departmental and stakeholder inclusive approaches to international VET cooperation. For further information confer www.govet.international (Retrieved on 27.07.2021).

4 Link: https://www.govet.international/de/140987.php (Retrieved on 27.07.2021). The papers are predominantly directed towards the German community of stakeholders of international VET cooperation and were supposed to provide them with necessary information on the impact of the crisis on the referring countries as well as on cooperation activities.

Germany focused on the analysis of the impact on the labour and apprenticeship market. Even though the pandemic had just unfolded, it was already clear that the impact would be fundamental: rapid switches to digital environments took place in schools, companies, and training providers. Despite the challenges, the experts agreed on the opportunities the current situation represented when it comes to new forms of learning and understanding VET as a tool of resilience against youth unemployment.

During the bilateral workshops with Israel and Costa Rica taking place in February and March 2021, the experiences of practitioners and the analyses of researchers had developed further: digital learning and working had become the new reality. The representatives from Costa Rica demonstrated how they had quickly switched the whole education system to distance learning and how vocational orientation programmes continued in a virtual format. The researchers from Israel painted a grim picture of the psychological impact of confinements and school closures just at a point in time when the first studies with similar findings were published in Germany. In Israel, digital coaches were introduced rapidly and at each institution.

The experts from South Africa showed the national recovery strategy that puts a great emphasis on skills and training. They indicated that learning gaps and inequalities among students and trainees are widening due to the digital divide many of them face. Although virtual learning platforms have been implemented on a national basis, (technical) accessibility and adequate learning environments do not exist equally for all learners, and pedagogical capacities need to be uplifted. Similar challenges were reported by the experts from Ghana who also gave examples of low-threshold methods that enabled teachers and learners to maintain communication in times of lockdown.

The workshop with Italian participants was slightly different, focusing on the recognition of prior learning, i.e. the recognition of competences acquired through non-formal or informal learning. But again, digitalization is a key component and challenge in this area. At the bilateral workshop with Russian VET experts, digital didactics and pedagogy were in focus together with sharing first experiences in digital formats for internships or vocational orientation.

### Joint publication with international voices

All workshops were conducted in bilateral format. Thus, a joint and truly international exchange between multiple countries could not take place. This volume, therefore, documents the workshop series in an intent to facilitate the exchange of experiences at an international level. It comprises papers from all participating countries. In line with the intended research–practice–politics encounter, the range of contributions is diverse, reaching from research-based findings to shop floor reports and strategic policy outlines. The publication includes the following texts (in alphabetical order by country):

**Ileana Arce Valerio**, Head of Educational and Vocational Guidance Department at the Ministry of Public Education, Costa Rica, first analyses the impact of the pandemic on the

Costa Rican Vocational Guidance activities. She also presents how they were adapted to fit in a virtual setting.

**Sepehr Shahin**, Policy and Strategy Advisor at GOVET, together with **Dr. Ralf Hermann**, Head of GOVET, provide an overview of the policy measures implemented in Germany to support its dual vocational education and training system and the economy as a whole.

**Dr. Tobias Maier**, Researcher at BIBB, provides an analysis of the most recent apprenticeship figures from 2020/2021 and analyses whether the apprenticeship market now stands at a turning point, with the COVID-19 pandemic possibly marking the start of a continued downturn in future years. He identifies a set of measures that can prevent this development. His article was first published in a special edition of another BIBB publication series on the impacts of the COVID-19 pandemic.[5]

**Dr. Verónica Fernández Caruncho**, Researcher at BIBB, analyses the effects of the COVID-19 pandemic on young people during the transition from school to training and work. She takes a very practical point of view and examines different approaches developed to facilitate the transition of young persons into training or work.

**Michael Härtel**, BIBB Head of Department for VET personnel, stresses that digital competencies of trainers have gained importance during the pandemic. Even though this is not a surprising fact, he conceptualizes the skills requirements for trainers in relation to the new competencies of the world of work and, thereby, points out the increasing complexity that trainers are confronted with. He explains the concept of media-pedagogical competencies that are imparted in a 12-week seminar developed by BIBB.

**Dr. Fred Kyei Asamoah**, Director General of the Commission for TVET in Ghana, presents an overview of the situation analysis his organization has undertaken to examine the impact of the pandemic on the vocational training providers.

**Dr. Christina Boateng**, Professor at the University of Cape Coast in Ghana, in an interview with GOVET Senior Technical Advisor Julia Olesen highlights some of the experiences made with trainings in order to strengthen digital competencies of trainers. From Dr. Boateng's experience, it is important to build upon existing competencies of trainers and students.

**Benjamin Bental, Alex Weinreb**, and **Avi Weiss**, all from Taub Center in Israel, reflect on the responsiveness of the vocational training system in times of the COVID-19 crisis. They analyse how incentive programmes devised by the government have increased skills among workers.

**Orit Vaknin-Shiloh**, Director of the Department of Apprenticeships and Youth, and **Dr. Shai Hen-Gal**, Chief Psychologist at the Ministry of Labour, Social Affairs and Social Services, Israel, analyse the psychological impact of the COVID-19 pandemic on young persons. They conclude that it had severe consequences: increased mental distress and suicidal be-

5 Please refer to "Berufsbildung in Wissenschaft und Praxis": https://www.bwp-zeitschrift.de/de/bwp.php/de/bwp/show/1711 (Retrieved on 27.07.2021).

haviour as well as elevated depression indicators. In addition to the analysis, they give an overview of intervention programmes that were implemented on short notice.

**Alessandra Biancolini**, Executive, and **Andrea Simonici**, Head, both from the Research Unit II "Monitoring of Vocational Training and European Social Fund" at the National Agency for Active Labour Policy (ANPAL), Italy, provide an extensive overview of the economic policies that were implemented in Italy to confront the repercussions of the COVID-19 pandemic. Vocational Education and Training has a very important role in the active labour policy revival programmes in Italy. This focus is also beneficial to the Italian dual system.

**Dr. Vladimir Blinov**, Director of the Research Center for Vocational Education and Qualification Systems of FIRO RANEPA, first emphasises the challenges that virtual learning often entails and analyses different approaches adopted by training institutions in Russia in times of the COVID-19 pandemic. He also points out success factors when implementing distance learning in VET.

**Dr. Natalya Victorovna Lomovtseva** from the Russian State Vocation Pedagogical University in Yekaterinburg analyses the challenges of switching to remote education models and examines some of the solutions that were brought forward in times of the pandemic.

**Dr. Igor Sergeev**, Leading Researcher at the Research Center for Vocational Education and Qualifications Systems at FIRO RANCHI, provides an overview of the changes that the pandemic imposed on career guidance in different regions of Russia and on the transition of young persons into the labour market.

**Dr. Oksana Sidorenko**, Deputy Director for Educational Work at the Chita Pedagogical College, reports on her organization's experience in enhancing digital competences of trainers.

**Professor Stephanie Allais**, South African Research Chair of Skills Development at the Centre for Researching Education and Labour, University of the Witwatersrand, reflects on the impact of an economic development policy adopted in South Africa to confront the challenges of the pandemic and analyses its impact on skills development.

**Carina Adam**, Project Manager for the BMBF-funded project TRAINME, gives an insight into the project itself, the required changes that were made due to the COVID-19 pandemic, and the ways in which digital competencies of trainers were expanded.

**Robert B. Shepard, Li Zhao**, and **Randall Denison**, U.S. Department of Labour, provide an overview of different apprenticeship programmes and policies that have been implemented in the past years and analyse new trends in apprenticeship since the start of the COVID-19 pandemic.

**Miriam Farnbauer**, Project Director of the California based DIAG USA Foundation, and **Dr. Diana Elliott**, Principal Research Associate at the Center on Labor, Human Services, and Population at the Urban Institute, USA, exchange with Dr. Hannelore Kress, Chief Technical Advisor at GOVET, on the impact of the pandemic on the VET system in the USA.

All authors share the opinion that the COVID-19 pandemic posed unprecedented challenges to the national Vocational Education and Training systems. During the bilateral workshops in the first half of 2021, it became obvious that those challenges are manifold and touch upon all areas of VET: competences of teachers and trainers, a new organization of learning environments, socio-psychological impact on learners, and the transition from school to VET to work, among others. While all countries have made great efforts to alleviate the negative impact of the pandemic, defining a streamlined strategy for VET is a considerable task. It also seems to be a global challenge to advocate for the youth when economy-related issues often seem to have a louder voice. The new and ever-changing situation requires a lot of flexibility, improvisation, and permanent adaptation: the pandemic is not suddenly "over", the world is now in a transition period; and education systems are deeply impacted by that.

The texts are to be understood as a "situation analysis" and not as a closure to discussion and exchange. Already during the bilateral workshops and thereafter, the international partners have emphasized their interest in further exchange, collaboration, and knowledge-sharing. This documentation is supposed to be a basis for future cooperation and peer learning.

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# Costa Rica

*Ileana Arce Valerio*

Vocational orientation in Costa Rica: strategies and actions towards the educational challenges caused by the COVID-19 pandemic

*Ileana Arce Valerio*

# Vocational orientation in Costa Rica: strategies and actions towards the educational challenges caused by the COVID-19 pandemic

One factor in the quality of the Costa Rican educational system is the National Guidance Service which focuses its work on enhancing the integral development of the student population from the educational, vocational, and personal-social components. In 2020 and 2021, due to the COVID-19 pandemic, challenges have arisen for the development of educational processes and the scholastic link, which has led to the need to strengthen strategies and actions related to vocational guidance, with lines of work that allow continuity through blended learning and that accompany students and their families in their educational tasks through inputs that respond to their respective educational scenarios.

Vocational guidance, as a scientific discipline within the educational field, is a factor in the quality of education in Costa Rica guaranteed by the Fundamental Law of Education since 1957.

This discipline has an impact on the permanence and success of the students in school by fulfilling two fundamental purposes in the Costa Rican educational system:

a. The first purpose is to serve as a process inherent in the curriculum that promotes the full development of the personality and uniqueness of each student emphasizing the formation of knowledge, skills, attitudes, and values from their own potential to face the challenges of life in educational, vocational, and socio-emotional terms.

b. The second purpose is to become a specialized support service that encourages the student population to make decisions in situations at school, in their family, social, and work environments with a sense of responsibility, productivity, and self-realization at a personal and social level. It also includes other important processes such as vocational and psychosocial counselling for school personnel and families, so that they, in turn, contribute to the educational process.

Vocational guidance in the Costa Rican educational system aims to study the enhancement of the integral development of the student population through processes that contribute to self-knowledge, knowledge of the environment, and decision-making involving personal-social commitment in regard to life planning, self-realization of the person, and the common welfare. It is essentially based on continuous intervention through the principles of prevention, development, and social intervention from the framework of the educational process which requires advising the staff of the educational centre regarding comprehensive education as part of their training role, as well as fathers, mothers, or persons in charge of their protective and formative work (MEP 2017, p. 16).

Guidance professionals carry out their work from educational, vocational, and personal-social components. Specifically, in the vocational component, vocational guidance must offer conditions that favour personal and vocational growth and development, so that people are able to face different situations and resolve conflicts that arise in their daily lives. To achieve this, it is important to mediate the construction of self-knowledge, autonomy, self-esteem, understanding of the environment, critical judgment, and the construction of a scale of values that guides behaviour towards personal improvement with an ethical sense (Pereira 2012, p. 148).

Based on the studies above and within the framework of the COVID-19 pandemic, challenges have been identified for the vocational support of the student population linked to the need to respond to the diversity of contexts and educational scenarios that exist in Costa Rica (differences in connectivity and access to technological devices for virtual learning) where professional support is not only provided to a student in the classroom, virtually, or at a distance but also involves the family, teaching staff, inter-institutional alliances, public, and private partners, among others.

In this analysis and construction of new paths, the question arises: how to accompany students in self-knowledge, knowledge of the environment, and decision-making involving personal and social commitment in the face of a global situation such as the COVID-19 pandemic? This has led to strengthening synergies with various educational and community actors to expand the forms of educational support available to students and their families.

The following are some of the ways used to strengthen the educational link with the student through vocational guidance based on three means of intervention (group, individual, and counselling):

- Vocational information portal https://orienta2.mep.go.cr
- Virtual vocational meeting https://mep.go.cr/noticias/encuentro-vocacional-virtual-mep-atraera-mas-50-mil-estudiantes
- Television programmes on national channels, such as:
  - Vocational decisions that revolutionize the world! Link: https://www.youtube.com/watch?v=eWWAsjmZaM4_

- The superstar helping to develop careers. Link: https://www.youtube.com/watch?v=iTk9p8lS0BY

- Virtual self-training courses for employees of the Ministry of Public Education: "Digital transformations, technological change and the Costa Rican labor market"; "Education in the framework of science, technology, engineering, arts and mathematics: development of skills and abilities; among others
- Educational videos: Orienta2, STEAM, Vocational Guidance, among others. Link: https://www.mep.go.cr/proyectos-programas/orientacion-vocacional
- Interactive vocational document according to developmental stages
- Text for families: Educational centres and families teaching together for life (MEP 2020). Link: https://www.mep.go.cr/sites/default/files/centros-educativos-familias-educando-juntos-vida.pdf
- Virtual events and professional presentations: "Transition and linking processes in the Costa Rican educational system: contributions from vocational guidance today"; "STEAM tools to promote vocational development and self-efficacy with gender equity"; "Integrating vocational guidance and STEAM through gamification"; "Mainstreaming the gender approach in the processes of vocational guidance and STEAM strategy", among others
- Use of social networks for STEAM talks targeting students #STEAMVOCACIONAL. Link: https://www.facebook.com/158026007624116/posts/3015355795224442/?d=n
- National Guidance Week. Link: https://www.mep.go.cr/noticias/mep-celebra-su-xl-semana-nacional-orientacion

Moreover, the STEAM Education Strategy[1] has been continued. It consists of promoting the development of 21st-century skills and competences in students in educational centres, while applying gender perspective so that they can explore and value STEAM areas in their vocational projects. This strategy is supported by Costa Rica's National Development and Public Investment Plan, as well as by public policies that support it and strengthen public-private partnerships.

From the lines of work established in the STEAM Education Strategy, in accordance with the vocational guidance processes carried out by guidance professionals in primary and secondary schools, and based on the technical support of the regional and national guidance advisors, instruments were designed to monitor the vocational self-efficacy of students, which is widely developed by authors such as Mata (2018). In addition to the professional support of guidance professionals, synergies are sought with the teaching staff to assist the students starting from the early years, and educational spaces that allow exploration, inquiry, and

1 STEAM = Areas of knowledge, such as Sciences, Technology, Engineering, Arts, Mathematics.

development of skills in adherence to the current Educational Policy and Curricular Policy dealing with the development of skills and competences are being established.

Within this framework and working together with families and the community to meet contextual challenges, actions are strengthened to reduce the gender gap in areas of knowledge such as science, technology, engineering, art, and mathematics. For example, it has created an inter-institutional collaboration aiming at promoting affirmative actions to inspire vocations in STEAM areas among female students. One of these responses was the construction of the website ChicaSTEAM https://orienta2.mep.go.cr/chicasteam/ that contains information as well as synchronous and asynchronous activities that help to support students and their families.

Given the different educational scenarios, the strategies and responses developed from vocational guidance have been adapted to the context with the focus on digital and/or printed inputs. These strategies stem from the synergy with families, local and national entities and strive to strengthen educational links and enhance the comprehensive development of the student population, including their vocational development.

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# Germany

*Sepehr Shahin and Ralf Hermann*

# ▸ Government response to the pandemic

The German Government plays a strong role in cushioning negative social and economic repercussions of the pandemic. The government's prominent role in crisis management is rooted in the German "social market economy" model which relies on an extensive set of instruments and policies for regulating as well as stabilizing and stimulating business activities, actively supporting the provision of labour, and providing social security. An extensive set of economic, labour and social policies were implemented in 2020. In Vocational Education and Training, the financial measures aim in particular at counteracting the tendency to reduce training places by companies severely threatened by the economic impact of the crisis. With these measures and incentives, the government is for the first time allocating bonus payments and subsidies to SMEs to support them in their training engagements. This text provides an overview of the measures implemented in light of the COVID-19 pandemic.

In Germany, the pandemic began to spread in early spring 2020. Until late fall 2020, Germany had been less affected by the COVID-19 pandemic than its European neighbours. Infection rates were low. Still, schools had to go into distance learning, and in many places dual training was constrained or even had to pause. Infection numbers began to rise considerably in late fall 2020, forcing the government to repeatedly impose and expand very strict lockdown measures in many areas of life and work. Accompanied by rising vaccination efforts throughout spring 2021, the infection rate fell and the government gradually reduced containment measures in early summer 2021.

The relatively good initial development was mainly due to two important factors: broad testing and consistent compliance with contact restrictions. Social and economic backlashes were addressed with economic and social policy measures and rapidly introduced special programmes. Regarding VET, the first negative impact on companies and VET institutions was somewhat alleviated, though not stopped, by a federal programme aimed at saving training places.

With regard to health care and public health development, Germany benefitted from a high number of intensive care beds and an elaborated medical and health care system. Maintaining the capacity of the health care system was one of the main points of orientation for adapting and introducing policies.

In order to face the challenges, the Federal Government pursued three main objectives:

1. Protecting the health of the most vulnerable and prevent an overstress of the health system capacity
2. Cushioning the consequences for all citizens, employees, and companies
3. Dealing with the pandemic through international cooperation.

Overall, the government plays a strong role in cushioning negative social and economic repercussions of the pandemic. In general, the German model of a "social market economy" relies on an extensive set of instruments and policies for regulating as well as stabilizing and stimulating business activities, actively supporting the provision of labour, and providing social security. The Federal Government was able to face the challenges imposed by the pandemic by activating existing legal and regulatory instruments which had been introduced and proven in previous crises. One of the most effective response instruments was short-time work,[1] which already played an important role in keeping unemployment low during the Financial Crisis at the end of the 2000s. Likewise, for Vocational Education and Training, measures specifically responding to the COVID crisis could be built on the solid basis of the dual VET system, particularly its legal and regulatory framework, the state and businesses cooperation in the provision and funding of training, and the permanent research and monitoring of economic, labour and training developments. One important research project on the development of the apprenticeship market in face of the pandemic has recently been finished by Dr. Tobias Maier, BIBB, which you will find in the following text (p. 32ff.).

The following gives an overview of the up-to-date responses of the German government concerning VET, the economy and labour market as well as education and research.

## Vocational Education – securing dual training through financial incentives

The Federal Government has put in place an extensive support package in order to incentivize companies, particularly SMEs, to continue their efforts in the Dual VET system. The financial measures aim in particular at counteracting the tendency to reduce training places by companies severely threatened by the economic impact of the crisis. With these measures and incentives, the government is for the first time allocating bonus payments and subsidies to SMEs to support them in their training engagements.

A central aspect of the stabilization measures is the programme of the Federal Ministry of Education and Research (BMBF) that secures apprenticeships with a volume of up

1 Short-time work is a government financed social insurance mechanism which had first been tried during the financial crisis in 2009. Instead of laying off employees, companies reduce their employees' working hours. The government provides a replacement for the loss of income and thereby supports both companies and employees.

to EUR 750 million. The Federal government, Federal Agency for Employment, the Federal states (Länder), employer organizations as well as unions have formed an "**Alliance for VET**" (BMBF 2021 a) which observes the situation of the economy and the companies concerning vocational training. They agreed on the following financial incentives (most of them available until the end of 2021):

- A bonus payment (EUR 2,000 per trainee) for SMEs which keep their apprenticeship placements stable in the next year
- A bonus payment (one-off payment of EUR 3,000) for SMEs (economically affected by COVID-19) which increase their apprenticeship placements in the next year
- Financial support to SMEs (economically affected by COVID-19) which continue in-company training without interruptions or reductions by keeping trainers and apprentices in full time employment
- Financial support to SMEs or inter-company facilities that absorb trainees from other SMEs unable to maintain their training offers or collaborating in joint training initiatives
- A bonus payment (EUR 3,000 per trainee) for SMEs which take over trainees from insolvent companies

## Economic Policies

The Federal Government has taken a number of measures in order to support companies which suffer financially from the consequences of the pandemic (BMWi 2021). Besides direct aid, the government tries to stimulate the economy with tax-alleviations, the support of exporting businesses, and easier access to basic income support. The overall goal is to stabilise the economy and to secure jobs and incomes.

## Protecting Businesses and Jobs

The government focused on immediate alleviation measures, i.e. providing credits, guarantees, and direct financial aid to support businesses and for self-employed workers and employees to survive the lockdown of parts of the economy and the subsequent loss of income. Parts of the measures were directly provided by the central state, some through the "Länder" (federal states) and were thus different, depending on the respective state (Bundesland). Support packages were released for different phases/months of the pandemic. Currently, the most extensive state-aid package was the so-called November and December Assistance which has been extended to summer 2021. Only in November and December 2020, the government spent more than EUR 13 million (BMWi 2021).

Several low threshold loan programmes were introduced, e.g. bridging financing gaps; quick loans; investment loans for public enterprises; state banks; government bonds. Self-em-

ployed individuals have suffered high losses in incomes due to the corona crisis. They were often not able to defer detrimental effects to their businesses. The state provides financial support (grants) to them in all branches, from crafts to health and care professions to artists, for the period from January to June 2021. The first interventions in 2020 left self-employed professionals in culture and arts largely uncovered which required adjustments later on.

## Aids regarding wages and salaries, taxes, and social security

A) **Tax alleviations**
The Federal Government launched extensive measures of the economic stimulus package in order to resolutely address the economic consequences of the corona pandemic (selection):
- VAT rate was temporarily reduced from 19 to 16 percent from 1 July 2020 to 31 December 2020
- Alleviations regarding import tax duties
- Tax alleviations regarding low emission company cars
- Tax alleviations for taxpayers who work from home (home office flat rate) for 2020 and 2021
- VAT rate for meals in restaurants and pubs was reduced from 19 to seven percent until 31 December 2022

B) **Export aids**
- Export credit guarantees: the aim of the protective measure is to secure existing supply chains in the amount of approximately EUR 420 billion and not to burden companies additionally, in case they have to insist on prepayment when there is no credit insurance

C) **Securing reasonable subsistence**
- In particular, small businesses and self-employed people should not have to fall back on their savings or their existence be threatened. They receive quick and non-bureaucratic access to basic security (SGB II) without a comprehensive assessment of assets or having to give up self-employment. This resembles a turn away from the need-based subsistence payment scheme

## Labour market policies and social security

The comparably robust German economy and the comprehensive German social security system have helped to prevent extensive financial and social damages to the German population, up to now. Some additional programmes and temporary adjustments to existing instruments were put in place in order to counteract the negative impact of the pandemic (BMAS 2021):

- Short-time work allowance partially makes up for the loss of earnings and helps to keep jobs where otherwise the employing company would be forced to dismiss employees; the allowance is subject to various preconditions and has been put in place until the end of 2021
- Easier access to basic security and social assistance for job-seekers
- Assistance for workers who are temporarily unable to work due to parenting duties and who suffer a loss of earnings as a result
- Occupational Safety and Health regulations: extensive new regulations have been put in place in order to protect workers from COVID-19

## Education, research, and science policies

In the domain of education and research the Federal Government has taken a number of measures in order to foster research on vaccination. Further, they provided support to facilitate and accelerate the digitization of education (BMBF 2021: b). The measures taken are coordinated jointly by the states ("Länder"), which have competences in the field of school education and universities. One of the major challenges was to support students who were not only exposed to the immediate effects of the crisis on academic life and learning but also lost access to small jobs and, therefore, part of their living and study financing.

The measures in the area of education, research, and science include the following:

A) **Research and science**
- Funding for research on vaccination and support for the the development of vaccines
- Supporting the global "Access to COVID-19 Tools-Accelerator initiative" and its objectives of developing, producing, and distributing vaccines, therapies, and diagnostics equitably around the world
- Supporting research relations with German university medicine community to cope with the current pandemic crisis (EUR 150 million). The aim is to set up a "National Task Force COVID-19" and establish central infrastructures such as a patient-related database

B) **Upscaling the digitization of education**
- Funding of EUR 600 million for the expansion of IT infrastructure in the states (Länder) on top of the EUR 5 billion of the already existing programme "Digitalpakt Schule"
- Expansion of the "HPI-Schul-Cloud", providing learning platforms during the lockdown, in particular for schools which lack digital infrastructure
- Extra funding of EUR 500,000 for German community colleges

C) **Alleviation of student allowances and support schemes**
- Continuation of student allowance regardless of COVID-related breaks in learning activities
- Additional income possibilities
- Extension of the maximum allowance period
- Student loans as an interim aid

This overview was expressly dedicated to government measures in response to the pandemic and meant to contribute to the policy dialogue with the partner countries participating in this workshop series. Of course, additional efforts and measures were also taken by stakeholders and practitioners in all areas. Public employers and businesses established home office models, adjusted workflows, digitised communication, etc. Vocational and general schools creatively developed content, methods, and processes to minimize educational losses and keep at bay the widening gap between learners during home schooling periods. Unions, social organizations, sector representatives, pupils' and parents' bodies, and other civil society voices campaigned for their respective interests to be considered. Addressing the pandemic was and still is an inclusive and holistic societal effort.

## What's next?

At this moment, the next phase of the pandemic is not easy to foresee. National and international vaccination campaigns have not reached a critical threshold yet. Health issues deriving from COVID-19 infections seem to be challenging for many individuals over significant periods of time, and they will continue to stress health systems. It remains to be seen to what extent government policies destined to counteract negative ramifications of the pandemic will succeeed. For now, in many areas, government-funded support measures have helped businesses and employees. Mid-term critical effects are, however, to be expected regarding public finances, economic development, (deferred) company closures, and long-term unemployment and poverty. A critical view should also be thrown on the impact on the groups which were not the most vulnerable in terms of health effects but were most affected by the lockdown policies; namely, students, apprentices, and pupils who had to interrupt school and training and lacked social learning environments and many of whom suffered from psychosocial stress (cf. below: Verónica Fernández Caruncho, p. 41ff.). Government policies should also be critically reflected with view of administrative processes. The pandemic crisis has shown that German administrative structures need to become more effective and efficient, particularly with regard to complementary competences among administrative levels (Federation, federal states, and municipalities). Many indicators that describe the impact of the pandemic are short-term and do not allow for reliable forecasts: per capita GDP has fallen about five percent in 2020 (Destatis 2021a), whereas unemployment has risen by around 1.1 percent in the first quarter of 2021 compared to the first quarter of 2020 (Desta-

tis 2021b). Moreover, the government debt has risen considerably, up to 14.5 percent in 2020 (Destatis 2021c).

Long-term labour and apprenticeship market forecasts that combine existing longitudinal surveys with the models describing the effect of the COVID-19 disruption provide important data for future scenarios and policy conclusions. In the German VET system, where the private sector for a large part covers VET costs, economic development is crucial for maintaining training quotas. The above-mentioned volume of financial support provided by the Federal Government is an outstanding market intervention that puts the state into a leading crisis management position in areas which under normal circumstances would rather be considered as the autonomous business world.

In the German example, the state played a crucial role in addressing the crisis and mitigating its effects. At the same time, lessons need to be learnt to further enhance the resilience of the country in case of future crises.

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*Tobias Maier*

# Does the COVID-19 crisis mark a turning point on the apprenticeship market? A forecast of the possible development of new apprenticeship contracts up until 2030

In 2020, in the wake of the COVID-19 crisis, the number of newly concluded apprenticeship contracts decreased by 57,600 compared to the previous year and reached the lowest level recorded since 1975. This article demonstrates that this collapse was only so severe because a surprisingly large amount of young people, particularly those in possession of a higher education entryqualification, had begun company-based training in the three years preceding. From a demographic perspective, the low level of training contracts was predictable. The question arising in future will be whether transition rates among young people stay at the low level of 2020 and what long-term implications this will produce in regard to securing the supply of skilled workers.

## Changes on both sides of the training market

In 2020, the COVID-19 crisis led to an economic downturn of around five percent compared to 2019. Business prospects were especially poor in sectors which were more severely affected by the shutdowns, such as events, sport, and tourism, as well as trade and industry. As a result, the supply of training places on 30 September 2020 was around 8.8 percent lower than one year before. The number of newly concluded apprenticeship contracts decreased by eleven percent, an even sharper fall than the decline seen in apprenticeship place supply. The 467,300 newly concluded training contracts represented the lowest figure recorded since 1975 (cf. Oeynhausen et al. 2020).

The dramatic decrease in newly concluded apprenticeship contracts was also caused by a fall in demand for apprenticeship places as institutionally recorded. This effect was discernible as long ago as during the European debt crisis of 2009 and it has two different causes. Firstly, like in 2009, the number of general school leavers was lower in 2020 than in the

previous year. Secondly, some of those keen on entering training withdrew their interest in company-based training (cf. Maier 2020). Thus, as of 30 September 2020, the supply–demand ratio remained at precisely the same level as the previous year: there were around 96.6 training places for every 100 young persons seeking one.

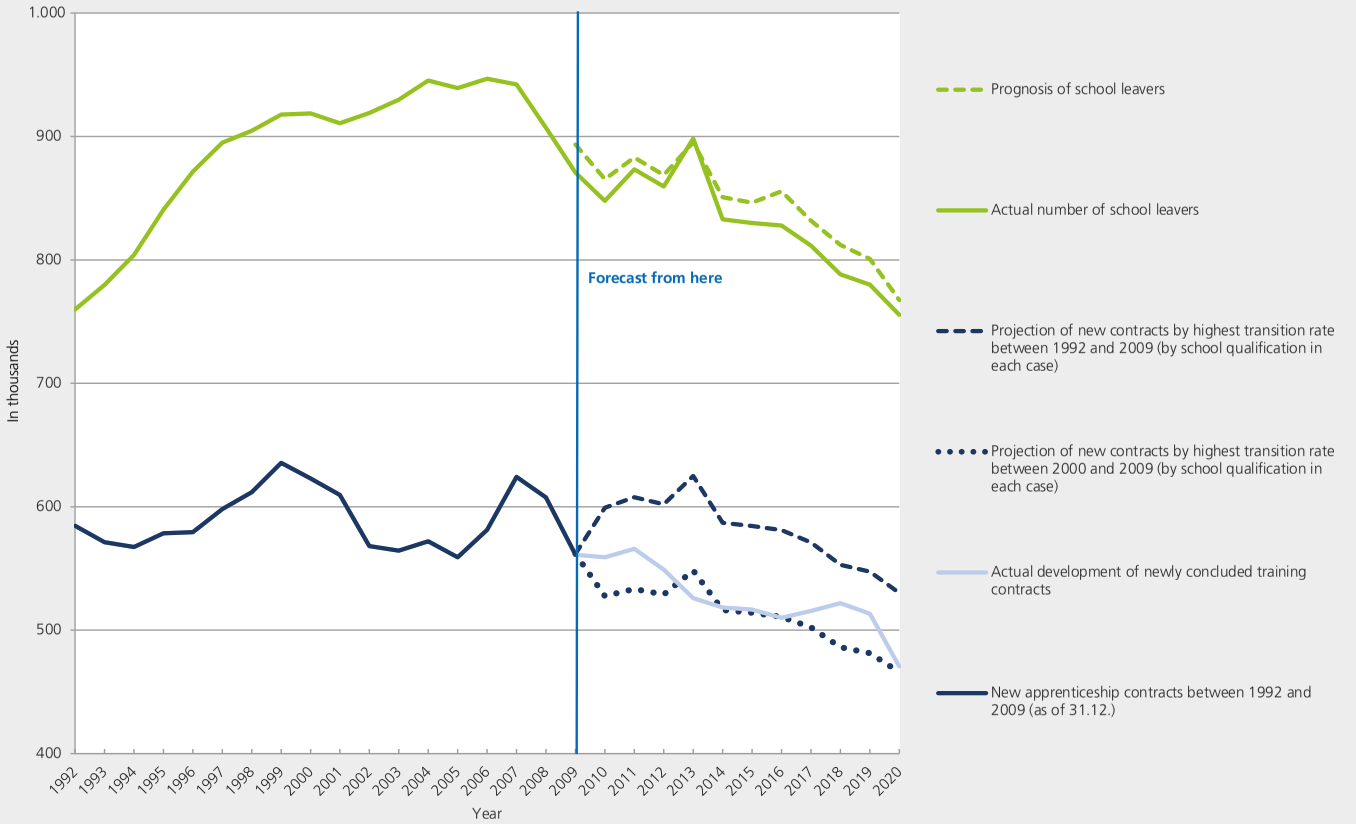
The interest from both sides of the market is a significant factor in signing new apprenticeship contracts. However, the balance of power shifts over the course of time. Maier/Walden (2014), for example, showed that the number of newly concluded contracts in the 1980s could largely be explained in terms of demographic development. In the 1990s, on the other hand, economic factors became increasingly significant. The importance of demographics then began to grow once more towards the end of the 2000s. It became apparent that fewer and fewer young people are leaving general schools, while the supposition would also be that more of these young people possess a higher education entry qualification. Maier/Troltsch/Walden (2011), therefore, calculated the number of new contracts which could be generally expected by the year 2020 given the demographic situation. This article compares these projections with the actual situation and draws conclusions for the further development during this decade.

## What was the nature of the development in the past?

Figure 1 shows that the number of general school leavers rose continually between 1992 and 2007 but then fell back. The prognoses made by the the Standing Conference of the Ministers of Education and Cultural Affairs (KMK) at the time indicated a further decline in the future, and indeed this decrease subsequently occurred. The short-term increases between 2011 and 2013 are due to the switch from a nine-year upper secondary school system to an eight-year model. This created double cohorts of upper secondary school leavers in various federal states. Whereas the number of newly concluded apprenticeship contracts rose in line with the demographic development until the end of the 1990s, a decline began in the 2000s. The figures began to increase again from 2005 onwards before the financial and European debt crisis put a stop to this.

Contrasting general school leavers by school leaving qualification against apprenticeship entrants by school leaving qualification reveals that opportunities for progression were more favourable in the 1990s than in the 2000s from the young people's perspective. The main determinants of these chances of progression were the economic situation and demographic development (cf. Maier/Walden 2014). In light of the decreasing numbers of school leavers, Maier/Troltsch/Walden (2011) essentially focused on the question of whether the utilisation rates of the companies in the 2010s would remain largely constant at the level of the 2000s or whether companies would, as they did in the 1990s, once again offer an opportunity to the young people whose chances of progression tended to be poor. The two scenarios produced by this were forecast from 2009 onwards and have been carried forward for the newly concluded apprenticeship contracts in Figure 1 (dashed or dotted lines). They form a demographic corridor within which the number of newly concluded training contracts could have moved, including with regard to dependency on economic development.

## Figure 1: Training participation of school leavers, 1992 to 2020




Source: Federal Statistical Office (2019) and Vocational Education and Training Statistics of the BMBF as of 31 December 2020; own calculations
Newly concluded contracts as of 31 December 2020 have been estimated.

The actual number of new contracts is also represented in Figure 1. It can be seen to lie precisely within the demographic corridor at the start of the 2010s before approaching the lower limit of the corridor between 2013 and 2016. Young people's chances of progression, therefore, did not improve compared to the previous decade. Increased rates of progression were not visible until in the following years, when matching problems on the training market were an object of discussion (e.g. Alliance for Initial and Continuing Training 2015–2018). However, the reason for this was greater transition into dual training by those in possession of a higher education entry qualification rather than improved opportunities for young people with a low level of formal qualifications (cf. Kroll 2020). The number of new contracts did not fall to a level that was expected within the long-term trend for demographic reasons until the COVID-19 crisis occurred.

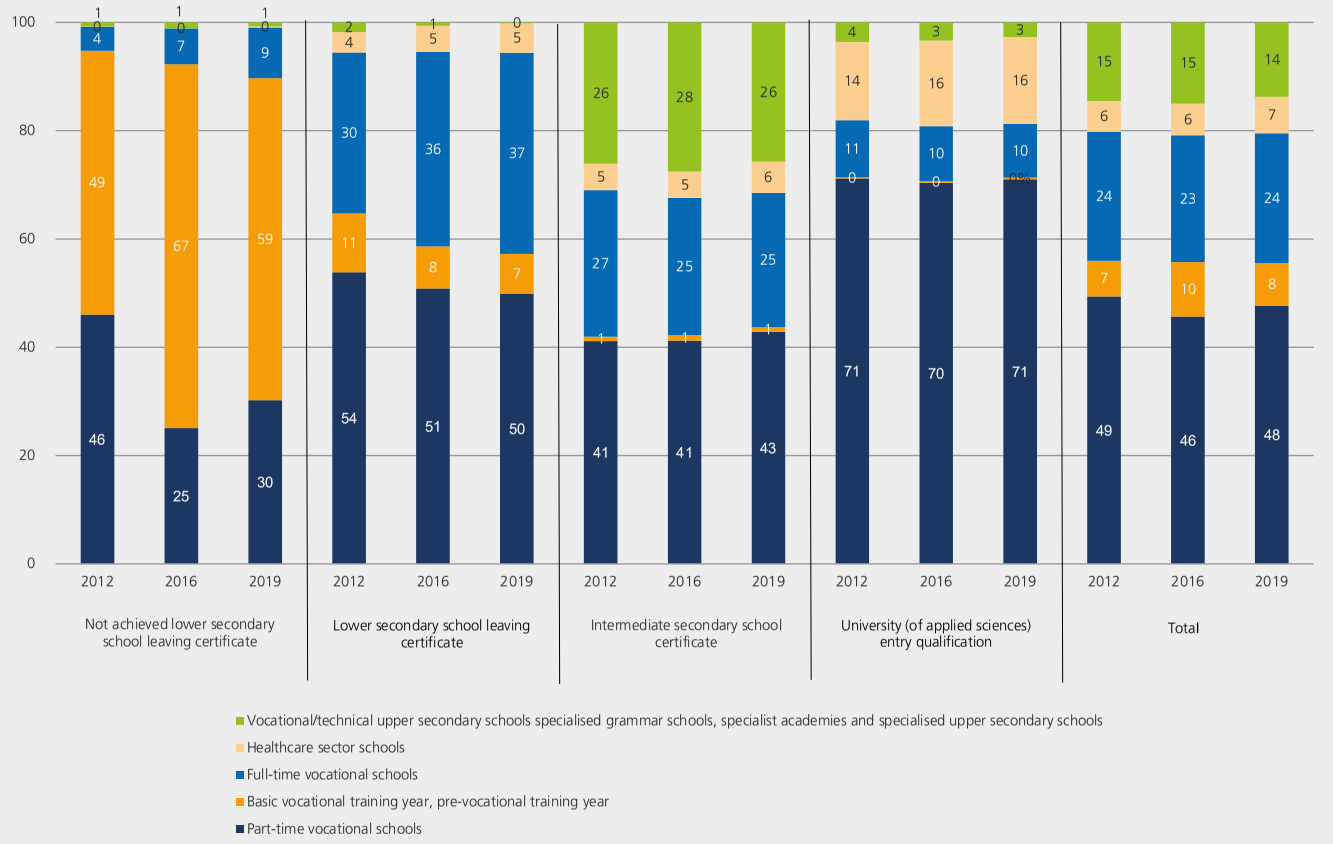
What conclusions may be drawn from these developments for the training market over the coming decade? In this case too, both sides of the market should be considered. Eckelt et al. (2020) show that the proportion of companies providing training decreased between 2007 and 2018. The authors identify the lack of suitable applicants at the company level as the most significant reason. It may, therefore, be assumed that apprenticeship supply followed the declining apprenticeship demand. Young people's training wishes, which are dependent in their turn on available alternatives, should also have a part to play.

## Structural shifts in vocational schools

The specialist publication series on vocational schools produced by the Federal Statistical Office provide information on how training entrants in each cohort differed in terms of type of school and prior school learning between 2012 and 2019. It should be noted that the number of lower secondary school leavers fell from 2012 to 2016 before rising slightly once more thereafter. The number of pupils with an intermediate secondary school leaving certificate has been falling continuously since 2014, whereas an ongoing rise in apprenticeship entrants with a higher education entry qualification began in 2013. This stays approximately in line with the ratio of general school leavers by type of qualification during these periods (cf. Federal Statistical Office 2019).

Figure 2 presents the shift of training entrants by prior school leaving certificate between the sub-sectors of vocational schools. It shows a relative decline in the number of lower secondary school leavers transferring to part-time vocational schools, which are largely attended by persons with an apprenticeship contract concluded pursuant to the BBiG/HwO. By way of contrast, there is an increase in transfers by pupils in possession of the intermediate secondary school leaving certificate.

## Figure 2: Distribution of training entrants in vocational schools by prior school learning from 2012 to 2019 (in %)




Source: Federal Statistical Office. Vocational Training. Specialist Publications 11, Series 3 (2012 to 2019); own calculations

Transfers to part-time vocational schools by persons with a general higher education entry qualification decline between 2012 and 2016 but then rise continuously. This is similar to the development seen in the case of persons without a lower secondary certificate. An increase may also be observed in transfers to full-time vocational schools by school leavers with weaker formal qualifications (without or with a lower secondary leaving certificate), while a fall occurs in the case of those with a higher level of formal qualifications.

Various evasive movements on the part of the school qualification groups are revealed in 2016, the year in which the lowest level of newly concluded training contracts prior to the COVID-19 crisis was reached (cf. Figure 1). Persons without a lower secondary school certificate were more likely to enter the transitional system (basic vocational training year or pre-vocational training year), while those in possession of an intermediate secondary school certificate preferred specialised grammar schools, specialist academies, and specialised upper secondary schools. It is conspicuous that there is a continuous rise in the proportion of all training entrants with a school leaving qualification who are attending healthcare sector schools.

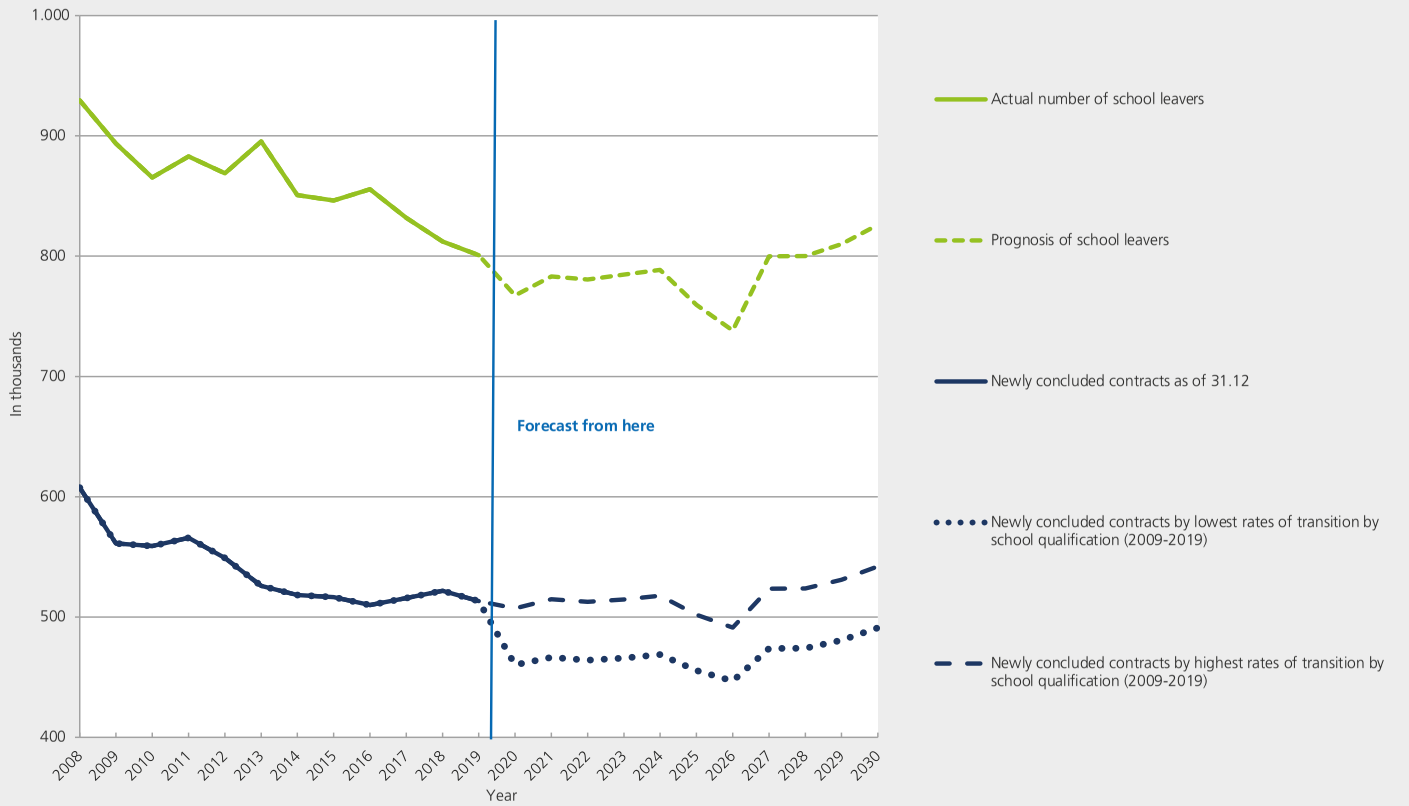
Unfortunately, no entrant figures for vocational schools are as yet available for the year 2020. This means that it is not possible to determine which alternative to company-based training was embraced by the young people. However, if the trend to commence training in the healthcare occupations continues, this may well be a good message in terms of securing a supply of skilled workers in future because training in healthcare occupations matches the high demand for qualified staff in this sector (Maier et al. 2020).

## A long-term outlook

As the previous analyses show, the rates of transition into company-based training by young people with higher qualifications were particularly high between 2017 and 2019. These transition rates reduced again when the training market collapsed during the COVID-19 crisis. In order to illustrate possible developments in company-based training after the crisis, Figure 3 shows a similar calculation made by Maier/Troltsch/Walden (2011) in relation to the coming decade. The highest and lowest transition rates into company-based training by type of school qualification for the period from 2009 to 2019 are assumed respectively.

The dashed blue line in Figure 3 states the possible number of newly concluded training contracts if the highest transition rates by type of school qualification between 2009 and 2019 are assumed. The dotted line indicates the number of newly concluded contracts to be expected if the lowest rates of transition are assumed. It is revealed that the number of new contracts reached on 30 September 2020 lies just about within the calculated demographic corridor.

## Figure 3: Training participation of school leavers, 2008 to 2030




Source: Federal Statistical Office (2019) and Vocational Education and Training Statistics of the BMBF as of 31 December 2020. Conference of the Ministers of Education and Cultural Affairs (2020) Forecasts of pupil and school leaver numbers 2019 to 2030 (Documentation No. 224). Own calculations. Newly concluded contracts by persons with foreign school qualifications or where no information was available were assumed to be 10,000 per year. The decreases in numbers of school leavers from 2025 to 2027 are due to the switch from a nine-year upper secondary school system to an eight-year model.

As the downward trend of general school leavers has stopped, the future number of new contracts will once again be less reliant on demographic development and more dependent on opportunities for transition and, as a result, on the participation of companies in training. The range between newly concluded contracts to be expected in accordance with the lowest and highest rates of transition is around 50,000. This figure precisely reflects the variation in demographic development (between 2026 and 2030).

## Opportunities for transition are a key factor

The COVID-19 crisis has put an end to the trend towards higher rates of transition, particularly among school leavers with higher formal qualifications, a trend which may possibly have been caused by bottlenecks on the labour and training market. The key factors for company-based training will be whether the enthusiasm of school leavers for dual training can be rekindled during a phase of economic recovery and secondly whether the increasing integration (again) of persons with an intermediate secondary school leaving certificate and of those with a higher education entry qualification does not take place at the expense of persons with or without a lower secondary school leaving certificate. The positive news for companies is that, for demographic reasons, the number of young people interested in training will not fall further. From 2027, it may even be the case that a slightly higher demand can be expected. However, companies will only be able to benefit from this if they maintain their training endeavours until this time. If companies withdraw from company-based training, the stagnating numbers of school leavers will mean that demand for training will exceed supply. This would be a disadvantage for school leavers with lower qualifications in particular and could once again require more extra-company training measures. In terms of policy, it would, therefore, be advisable to support companies providing training, especially small firms, in their commitment or to provide better information on existing support measures, such as assisted training or cooperative training (cf. Eckelt et al. 2020). On the side of companies, vacant training places must be broadly communicated and registered with the Federal Employment Agency to increase the probabilities of placement, even if statistically speaking this will initially lead to a further increase in vacant training places. However, if the number of newly concluded apprenticeship contracts decreases after all, then this should not be taken as an indicator of future shortages of skilled workers. Entrant figures at full-time vocational schools and healthcare sector schools must be accorded equal consideration in this regard.

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*Verónica Fernández Caruncho*

# Effects of the COVID-19 pandemic on young people during the transition from school to training and work in Germany

The effects of the COVID-19 pandemic have also left their mark on the transition from school to vocational training and work. Students with fairly low levels of school qualifications are particularly affected. Moreover, the cancellation of vocational orientation offers due to the pandemic, e.g. internships in companies, may have an impact on the matching of young people and their enrolment in training in the next school year. This article attempts to provide both an overview of the most important effects of the coronavirus pandemic at this transition stage and the approaches used by professionals and educational and counselling institutions through digital media and virtual activities to counteract these effects.

## 1. Introduction

Throughout Germany, the number of training positions fell in 2020. According to the Federal Institute for Vocational Education and Training (BIBB), a total of 527,400 in-company training positions were reported between October 2019 and September 2020. This corresponds to a decline of 50,700 positions compared to the same period the previous year. A particular year-on-year decline was recorded in the number of in-company training positions in the gastronomy and hotel business, in commercial professions, in the metal industry, electrical industry, and hairdressing trade. A decrease was also registered on the other side of the market in terms of demand for training positions (BIBB 2020).

The effects of the coronavirus crisis are particularly apparent for people with fairly low levels of school qualifications (Maier 2020; Fitzenberger 2020). According to a study by the Bertelsmann Stiftung, they have the impression that the coronavirus crisis has reduced their chances of obtaining a training position (Barlovic et al. 2020). One third of the participants in this study were unable to put their career plans into action due to the coronavirus pandemic. One possible reason for this was the cancellation of job interviews (Barlovic et al. 2020).

Schools, inter-company educational establishments, educational institutions, advice centres, special funding institutions, and training companies were partly closed during the

pandemic-related lockdown. Young people and young adults were mostly unable to respond to offers as they usually would. The actors involved had to adapt quickly to the new situation and look for solutions. Below we examine approaches and activities in the fields of vocational orientation, career and training preparation, transition management, and training/training promotion in Germany.

## 2. Vocational orientation during the pandemic

Due to the coronavirus pandemic, alternative forms of vocational orientation are on the rise; many offers cannot take place in the usual form or can only take place to a limited extent. Among other things, this affects personal advice, training fairs, internships, orientation days, and access to vocational information centres. Numerous options are offered here to allow vocational orientation from a distance. For example, vocational information centres of the Federal Employment Agency point to their online offerings, such as the "Berufe Entdecker" (Discover Careers) website or the "planet-beruf.de" portal which provide extensive information on career choices and training, including the activities involved or daily routine. Vocational orientation from a distance is also made possible by television programmes such as "ich mach's" (I'll do it) on ARD Alpha.

Social media channels were also used in a meaningful way in vocational orientation, for example by the Youth Employment Agency Berlin, which broadcasts interviews with representatives of companies live on Instagram. Interested young people can send questions in advance, and these are then asked during the interview.

During the coronavirus pandemic, the application training focuses on telephone or video-based job interviews. Here too, attention is drawn to digital information and virtual tools, such as the "Bewerbung: Fit fürs Vorstellungsgespräch" (Application: Fit for the interview) app provided by the Federal Employment Agency.

Even before the coronavirus pandemic, the format of Skype "speed dating" calls had proved effective for companies and future trainees. Young people can find out about various training opportunities, get directly in contact with the trainers, and apply for training positions. This service offered by chambers of industry and commerce was extended as a result of the outbreak of the coronavirus pandemic and carried out by numerous chambers. In August 2020, for example, the Chamber of Industry and Commerce in Düsseldorf organised digital trainee "speed dating" in which 233 applicants and 33 companies took part. This gave rise to 173 matches in which the parties made an appointment to get to know each other better.

In addition, offers have been developed that allow personal advice face to face despite the need to comply with the protective measures. For example, the Cologne Employment Agency offers "walk-and-talk consultations", where young people meet with a career adviser to obtain information and answers to their questions during a walk in the fresh air (Cologne Employment Agency 2020).

Internships, an important tool in vocational orientation, were often postponed or cancelled. This was due to health and safety measures, as well as a lack of personnel (for example, as a result of short-time work), with the result that companies cannot guarantee the supervision of interns. However, the situation varies from sector to sector. For example, it was possible to complete internships in some sectors, such as retail, but not in nursing (Jugendsozialarbeit News 2020). Since internships and career advice in school classes represent the vocational orientation offers most widely drawn on during school years, the cancellation of these measures may have an impact on matching young people and getting them into training the next year. In view of the difficulties in finding traineeships, the Employment Agency recommends getting involved in digital internships and orientation days. However, these formats still need to be developed.

One format that has already become established is the virtual fair. There are numerous offers here, including the I-zubi fair held by the Unternehmerverband Südhessen e.V. At this fair, numerous companies are represented virtually with their own stands where visitors can obtain information based on videos and flyers to download.

## 3. Career and training preparation

The coronavirus pandemic and the lockdown also had an impact on the structure of measures to prepare for careers and training. Young people were often supervised virtually because they had no access to the educational institution, their learning group, or their potential training companies.

Due to the lack of opportunities for face-to-face teaching, for example, several educational institutions sent training materials and learning packages to participants by email or post. The participants were often supervised over the phone or using online tools. However, educational institutions take the view that this cannot replace direct (face-to-face) contact (Jugendsozialarbeit News 2020). As a result, participants were often visited on site to organise consultation sessions during a walk. It is important to maintain regular contact and a reliable relationship using every form possible. The learning and work platform www.ueber-aus.de, which makes it possible to work together in virtual groups irrespective of time and location, is available for these measures throughout Germany.

## 4. Transition management

Youth employment agencies were partially closed during the lockdown. Those that remained open did not allow any direct, personal contact. Instead, contact was usually over the phone, via email, or on social media channels. In this situation, "virtual youth employment agencies" are becoming increasingly relevant, be it for cooperation across legal spheres or as means of contacting young people. Young people can describe their situation or ask questions with just a few clicks and receive an answer or assistance from the relevant contact person by phone

or email. The virtual youth employment agency for the Rhine-Hunsrück district even allows direct contact with coaches. This approach is also recommended by the Federal Employment Agency which encourages offering alternative coaching formats that do not require physical presence, such as online or telephone coaching. These were also the most frequently chosen variants as coaching mostly took place over the phone or via messenger services. E-mentoring can also be an alternative for maintaining contact between the mentor and mentee despite physical distance.

## 5. Promotion of education and training

The uncertainty of young people as a result of the coronavirus pandemic is reflected in the results of a survey conducted by the Bertelsmann Stiftung. It established that 61 percent of the school pupils surveyed believe that their chances of obtaining training have deteriorated. When it comes to a university programme, only 23 percent of those surveyed share this view (Barlovic et al. 2020, p. 6). This could have the result that young people with a suitable school leaving certificate are more likely to opt for studying or other career paths. In contrast, school pupils with fairly low educational qualifications will try to find a training position. In the event that these efforts are unsuccessful, almost half (46 percent) of these young people would "look for a job without doing training" (Barlovic et al. 2020, p. 20).

School leavers with lower school leaving qualifications are more likely to look for jobs in areas particularly affected by the pandemic, in hotels and restaurants, in the retail sector, or generally more in the area of fairly simple services. Both before and during the training, these young people particularly need support that is as individual as possible and tailored to their personal needs, as is offered in assisted training or assistance to accompany training. Through assisted training, they can obtain support in the form of individualised advice, supervision, and training courses. Especially during the coronavirus pandemic, assisted training can be an effective tool as it offers support not only to trainees but also to companies. According to a survey conducted as part of the JOBSTARTER programme, the majority of companies (60 percent) wish to continue providing training, but they want support. They are increasingly asking for tips on funding for training (30 percent) and information on the use of digital tools in training (19 percent) (König/Dresen 2020).

Although most of the trainees were able to continue their training in small and medium-sized enterprises, some suffered more from the consequences of the coronavirus crisis which led to remote work, short-time work, or leaves of absence (König/Dresen 2020). Moreover, there were cases where the trainees could not be employed at all training stations and where their exchange with the training staff was less intensive (Bellmann et al. 2020). Nearly six out of ten training companies in the hotel and restaurant business stated they were unable to impart the training content as planned. Half of these businesses also reported that it was impossible to supervise the trainees to the usual extent (Bellmann et al. 2020). In exceptional cases, the trainees were entrusted with tasks that did not belong to their training

occupations (AHGZ 2020). Distance learning supported by digital media is difficult in this sector of the economy.

In occupations that involve the presence of customers or take place in a specific learning environment, only small parts of the occupational profile can be covered by digital learning options (Bertelsmann Stiftung 2020). Difficult training conditions – such as those associated with the coronavirus pandemic – may go so far as to cause withdrawals from vocational training contracts. Teachers can play a key role here because they can influence trainee satisfaction, learning motivation, or willingness to perform by "consciously establishing trusting teacher–pupil relationships" (Soemers 2020).

Alternative design formats may also become more important in this context. During the course of the coronavirus pandemic, some companies that were no longer able to provide parts of training have transferred these parts to other companies or to inter-company educational institutions (Alliance for Initial and Further Training 2020). Training associations can be a good solution in this context. Training in a network can contribute to better professional qualifications among young people due to the change of learning location, for example, by getting to know different types of work organisation and teamwork or through the specialisation and equipment of partners. In addition, contacts with several companies can give young people better chances of being taken on after training (BIBB 2003). Last but not least, training in a virtual network may provide another means of overcoming the consequences of the coronavirus pandemic, such as a lockdown. The "Ausbildung im virtuellen Verbund" (training in a virtual network) project funded by the Federal Ministry of Education and Research (BMBF) aimed to implement e-learning elements in network-based training.

## 6. Conclusion: digitisation, individualisation and flexibilisation

In all fields of action during the transition from school to training, numerous and varied offers have been developed to maintain activities even during the coronavirus pandemic. Virtual offers such as apps, podcasts, chats, virtual training fairs and internships, or social media channels were the instruments chosen for this, although they do not always replace direct contact (Jugendsozialarbeit News 2020).

In this context, it is becoming increasingly important to design measures individually, allowing barrier-free access and taking into account linguistic and cultural diversity, and to make training more flexible. Especially for young people with fairly low school leaving qualifications who are particularly affected by the current situation, support tailored to their individual needs, as is offered in measures such as assisted education, may be relevant. The further development of extra-company training models and training associations can also contribute to strengthening and increased participation in regular training.

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*Michael Härtel*

# The design of the digital transformation in Vocational Education and Training – new demands to company training staff

In-company trainers are not only experts in their respective profession but also play a major role in the socialisation of young persons and their integration into an increasingly digitalized work environment. Digitalisation requires trainers and teachers in Vocational Education and Training to adopt new media-pedagogical competencies consisting of media-didactic, media education, and media integration skills. In order to support training personnel in shaping the digital transformation, BIBB has developed a seminar concept to promote the media and IT competence of in-company training staff.

The crucial acceptance of the dual Vocational Education and Training system among businesses and society in Germany lies in its direct connection to the employment system. Companies are able to integrate new individual skilled workers into company operations during their training and, therefore, directly into the context of actual practice and according to what is needed. Generally, this opens up opportunities for trainees to be hired in skilled employment and provides one of the key conditions for social participation, independent living, and social balance.

However, the working and professional world, and even entire economic systems, are experiencing significant changes and upheaval. The dynamic technological change has led to a considerable digitalisation of the work world within a very short period of time and to the mediatisation of all areas of society. The megatrend of "digitalisation" with its new demands for employee qualifications in all professions is also accompanied by demographic development and the increasing heterogeneity of trainees (high-performing/low-performing trainees, migration or refugee background, university dropouts, early termination of the training contract, and the change of training position). The dynamics of climate change also present entirely new challenges for future-oriented Vocational Education and Training.

In this context, technology- and globalisation-related structural transformations in business and society are constantly changing what is required of trainees – future experts in the companies. Rapid technological developments are resulting in highly flexible operational

production and service processes. Employees in expert positions are required to plan independently, to coordinate, control, and decide, and to do so based on a broad understanding of the complex interaction of tasks in the work process across the previously separate areas of planning, production, and service. Expert employees are increasingly expected to have skills that allow an independent organisation of work and decision-making capabilities, as well as to have the necessary social skills for this. The more intensive integration of functional areas that used to be separate is increasing the need for interaction with different groups of people and further functional areas, both in real life and with the support of IT.

In light of all this, trainers are the key actors who bear responsibility for competitive and future-oriented company-based Vocational Education and Training. Throughout Germany, in all vocational training occupations and companies, in handicrafts and in medium-sized companies, in the industry, and service sectors, they are responsible for designing in-company training and further training that meets the new challenges that arise on a daily basis.

Trainers are available to trainees as facilitators and advisers. They provide guidance to increasingly heterogeneous groups of trainees in a rapidly changing and progressively more digitalised working world, prepare the experts of the future for their tasks in this ever more complicated world of work, and thus contribute to safeguarding Germany's future as a business location. They are not only experts in their respective profession but also act as educational specialists who understand the language of young people, communicate with them, and encourage their professional skills in a workplace. In other words, their contribution to the socialisation and upbringing of young adults should also be highlighted.

Targeted strategies for continuous encouragement of skills acquisition and professionalisation of in-company training staff are, therefore, a decisive paradigm of VET policy which ensures that training companies have qualified staff to help them hold their own in the competition for new skilled workers and their high-quality in-company training.

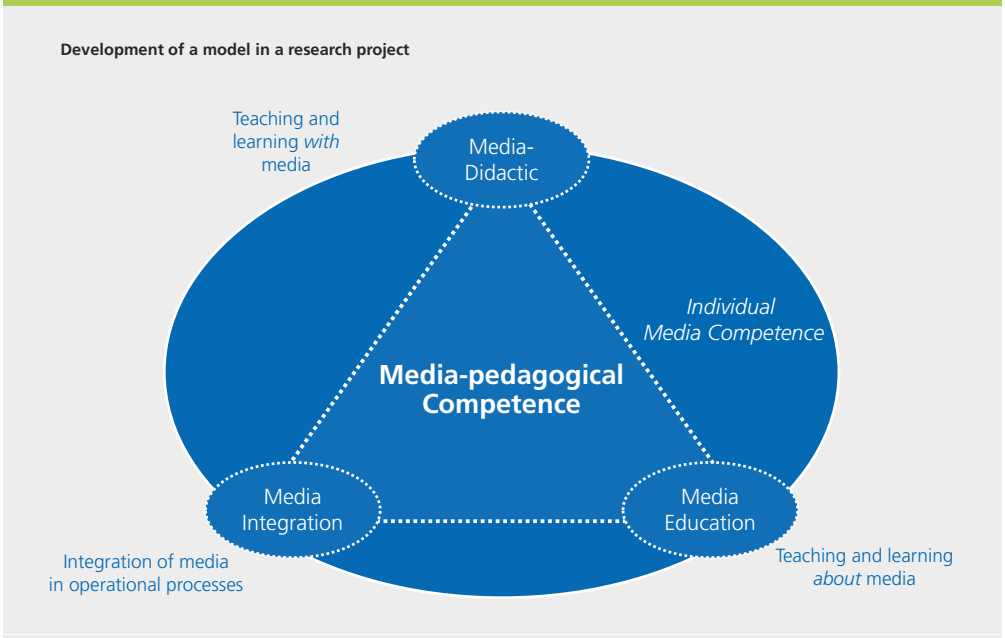
In response to the constantly increasing digitalisation of specialist work, BIBB is currently facing the task of promoting media education skills among in-company training staff. The extensive mediatisation of all areas of business and society cultivated by smartphones and tablets requires that trainers gain fundamental new knowledge. This includes, but is not limited to, social communities, social commerce, interaction platforms, networking, collaboration, cooperation, and communication in both professional and private contexts. Social learning and social publishing are further key terms among a whole range of other facets of current trends in the use of modern and mobile IT-based media.

Trainers are left with no other alternative than to proactively look into associated possibilities for the structure of TVET and develop relevant didactic and methodological concepts based on their own media and IT skills. Trainees need to learn about the range of available platforms, providers, tools, and interests in the social media field, how they are incorporated into operational strategies and processes, and what influence they have on workplaces and forms of working. They must be given the skills to assess and use social media professionally and deliberately and to evaluate relevant developmental trends.

The availability of digital media with all its many application formats poses continuous challenges for training staff in their everyday training practice. "Media and IT competence" is now a necessary condition to be able to continue designing in-company vocational education that is attractive and fit for the future. This applies both to the selection of digital media in typical training situations and to its use for networking of the learning locations in the dual VET system.

In a participation-oriented development process, BIBB has, therefore, developed and tested a model to promote media pedagogical competence together with trainers from various fields (BIBB 2020).

**Figure 1: Components of media-pedagogical competence**




Source: own illustration according to Breiter et al. (2018)

The media education skills are initially based on the training staff's *individual media literacy*. This is made up of such aspects as *media design, media criticism, media usage,* and *media knowledge* (Baacke 1999). Here, it must be taken into account that individual media literacy is viewed as a necessary but far from sufficient condition to be able to make profitable use of media for training. Based on this understanding of individual media literacy, the elements of media education skills for in-company training staff are as follows:

- ***Media-didactic skills***
  Capability and willingness to reasonably and deliberately select, use, and further develop digital media to improve the quality and effectiveness of occupational teaching and learning processes taking into account the living environment of the trainees.
  Examples: justified selection of suitable software for visualising procedures and functions that support trainees' learning processes in the area of process modelling; deliberate selection of suitable digital presentation methods (slides, posters, etc.); virtual teaching of training content; using new forms of documenting learning development by means of electronic training diaries.

- ***Media education skills***
  Ability and willingness to take a critical and reflective look at the societal and individual significance of media and digitalisation against the backdrop of vocational education and operational guiding principles in vocational teaching and learning processes and thus contribute to trainees' media education.
  Examples: addressing social and ethical aspects of media use in training and taking preventative measures against cyberbullying; critical reflection on the use of social media in a work context in the event of inappropriate communication about superiors on Facebook or unintentional sharing of company secrets via WhatsApp; handling data protection issues relating to the protection of privacy when using online platforms.

- ***Media integration skills***
  Ability and willingness to consider and create an innovative structure for the company's organisational processes and framework conditions for integrating digital media into vocational teaching and learning processes.
  Examples: knowledge about legal issues when using online platforms in the company in relation to the participation rights of the Works Council; implementing digital teaching and learning phases in everyday training, designing digitally supported cooperation between learning locations, taking the company's security guidelines into account when using learning software, email programmes, or content from the Internet (virus protection, cyber attacks).

Taking this case-based model development as a starting point (Breiter et al. 2017/2018), in a next step BIBB developed a seminar concept that provides fundamental knowledge about central aspects of digital media and its possible uses in the direct in-company training process. A total of six areas of competence derived from the above model development (the Standing Conference of the Ministers of Education and Cultural Affairs (KMK) strategy "Education in the Digital World" (KMK 2016) and the EU's "Digital Competence Framework 2.0" (EU 2019) formed the basis for a learning-goal-oriented further training concept to promote the media and IT competence of in-company training staff (MIKA seminars):

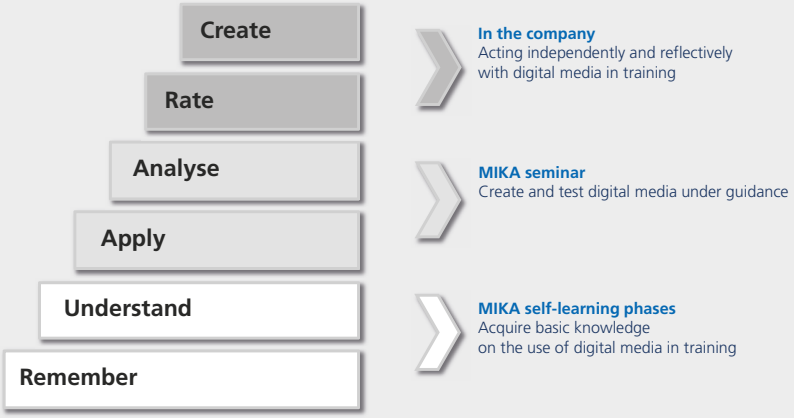
- **Protecting data and working securely**: working securely in digital work and training environments; paying attention to data security in training; protecting personal data
- **Communication and cooperation**: interacting digitally with trainees; online cooperation; designing digital teamwork; sharing information with trainees
- **Searching for and processing content**: searching , filtering, analysing, and evaluating relevant content for training; saving and processing information that is available online in the in-company training
- **Creating and sharing content**: designing, sharing, and publishing training content in various formats; knowing and applying legal specifications
- **Resolving problems and reflecting**: knowing and using digital tools and media for learning in training; supporting problem solving and reflection in training using digital methods
- **Understanding digital worlds**: analysing and evaluating digital media for in-company training; gaining a better understanding of trainees' everyday digital lives

The seminar concept was developed and tested together with chambers of industry and commerce and their trainers and trainees, as well as trainers from their chamber districts. Building on the individual competence categories, BIBB has developed an extensive catalogue of learning objectives with examples for implementation in the context of domain-specific learning and work tasks and made it available to the chambers and teachers for concrete testing of the seminar concept as a guideline. The concept of the MIKA (media and IT competence for training staff) seminars is aligned with everday training in the companies and enables trainers to implement it directly within their own in-company training context. The seminar participants:

- Receive practical training in the context of their own everyday training practice
- Experience and research which digital media can be used meaningfully for in-company training
- Test and practise the use of digital medial based on the example of practical teaching and learning processes
- Create their own digital toolbox over the course of the seminar that they can continue to supplement, expand, and adapt individually in their everyday training practice

The seminar concept addresses all individuals who are responsible for in-company training, whether they are employed full time as trainers or are skilled workers responsible for training and instructing trainees alongside their own specialist work.

**Figure 2: Acquisition process of media and IT competence – MIKA learning stages (according to Bloom's taxonomy)**




Source: own representation based on Bloom (1976)

In order to strengthen regional cooperation between learning locations, educational staff from other areas of vocational training were also invited to participate, meaning trainers from inter-company vocational training centres and teachers from vocational schools were able to attend the seminars. During the pilot phase, the seminar concept was evaluated based on targeted feedback from the participants and continuously developed in several rounds based on this feedback. At the end of the project phase, a tested seminar concept is now available that can be used throughout Germany. It consists of three components:

1. A 12-week seminar with a duration of approximately 50 learning hours. It is designed as a blended learning concept with online and in-person learning phases
2. Individual learning opportunities are offered in the "MIKACampus", which is integrated into the BIBB portal for trainers, www.foraus.de, as an online learning environment
3. A "train the trainer" guideline gives teachers and trainers the opportunity to learn about the design and teaching content of the MIKA seminars in a two-day seminar with a duration of approximately 14 hours

Figure 3: MIKA – Further training concept for media and IT competence for training personnel


Source: own representation

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# Ghana

*Fred Kyei Asamoah*

# The effect of the COVID-19 pandemic on TVET providers and programmes in Ghana

The Commission for TVET has the mandate to steer the TVET transformation in Ghana and regulate, promote, and administer technical and Vocational Education and Training for transformation and innovation for sustainable development in the country. In light of the COVID-19 pandemic, TVET training providers (TP) were confronted with enormous challenges due to school closures and disruption of the academic calendar. The switch to virtual formats was pursued by most TPs but challenged due to high costs of Internet or the limited availability of stable connections.

## 1. About the Commission for TVET

The Commission for Technical and Vocational Education and Training (CTVET) was established by the Education Regulatory Bodies Act (ERBA) 1023 of 2020. The Commission's activities are informed by the five-year strategic plan for TVET transformation which is also derived from the Education Strategic Plan (ESP).

The key goals set out for the Commission in the five-year strategic plan are:

a. TVET which is accountable and responsive to the sector (governance and management)
b. Equitable access and promotion of gender mainstreaming
c. Quality assurance in TVET based on internationally accepted standards
d. Sustainable source of funding for TVET
e. Greening TVET for environmental sustainability.

### 1.1 Mandate

The mandate of CTVET is to regulate, promote, and administer Technical and Vocational Education and Training for transformation and innovation for sustainable development.

## 1.2 Functions

The Education Regulatory Bodies Act (ERBA) 1023 of 2020 stipulates the functions of the Commission as follows:

- Formulate national policies for skills development across the broad spectrum of pre-tertiary and tertiary education, formal, informal, and alternative education
- Coordinate, harmonise and supervise the activities of Technical and Vocational Education and Training institutions to meet the requirements of both the formal and informal sectors
- Develop and implement a national assessment and certification system in the Technical and Vocational Education and Training
- Take measures to ensure quality, equitable, and inclusive access in the provision of technical and Vocational Education and Training
- Develop and maintain a national database on the Technical and Vocational Education and Training sector
- Facilitate research and development in the Technical and Vocational Education and Training system
- Source for funds to support Technical and Vocational Education and Training activities
- Facilitate collaboration between training institutions and industry to promote:
  - Industry-led and demand-driven curriculum development and placement
  - Workplace experience learning
  - Recognition of prior learning
- Promote cooperation with international agencies and development partners
- Issue reports on the state of skills development in the country
- Advise the Minister on all matters relating to the management and improvement of the Technical and Vocational Education and Training system
- Coordinate and promote industry-led occupational standards generation for demand-driven curriculum development and delivery
- Accredit programmes, institutions, centres, facilitators, assessors, and verifiers at the formal, informal, non-formal, Technical and Vocational Education and Training institutions to ensure quality delivery
- Collaborate with tertiary institutions and relevant agencies to implement competency-based training programmes on the National Technical and Vocational Education and Training Qualifications Framework
- Perform any other functions that are ancillary to the objects of the Commission

## 2. COVID-19 in Ghana

COVID-19 is a disease which has affected the whole world. According to the WHO, by 31 December 2019 the Wuhan Municipal Health Commission, China, reported a cluster of cases of pneumonia in Wuhan, Hubei Province. A novel coronavirus was eventually identified.

More specifically in Ghana, the first case of COVID-19 was reported on 12 March 2020. On 16 March 2020, the government shut down all schools, including universities (Ghana Health Service 2021).

This resulted in a three-week temporary lockdown of Greater Accra, Kasoa, and Greater Kumasi between 30 March and 20 April 2020. Life started to return to normal after the lockdown, although with strict adherence to the COVID-19 prevention protocols.

All schools (from basic to tertiary) were fully reopened on 15 January 2021. Prior to that final year, students were allowed back in school in 2020 to complete their course work and write their examination. The comprehensive "Guidelines for School Re-opening during COVID-19" were published and distributed to all regional, metropolitan, and district directors of education and heads of all schools (kindergarten to Senior High School). The Commission for TVET (CTVET) also developed comprehensive guidelines for all TVET institutions before reopening.

As of 4 April 2021, Ghana has recorded 90,782 cases of COVID-19 (57 percent male, 42 percent female and one percent other) (Ghana Health Service 2021).

### 2.1 The impact of COVID-19 on children

In January 2021, UNICEF, Social Policy Research Institute, and National Development Planning Commission published a research on the impact of COVID-19 at the beginning of March 2020 titled "Primary and Secondary Impacts of COVID-19 on Children in Ghana". Among the key findings of the research and beyond the primary effects of COVID-19 such as death, illness etc., there were mentioned some secondary effects like influence on household incomes, malnutrition, disruption of teaching and learning, etc. (UNICEF 2021).

### 2.2 Effects on school closures

One of the major secondary effects of COVID-19 is the negative effect on education which resulted in the closure of schools for long periods. As stated, no country was adequately prepared for the pandemic, and as such with the restriction of movement that came about as a result of the disease, it also brought about disruption in learning, schooling, and exam schedules (UNICEF 2021).

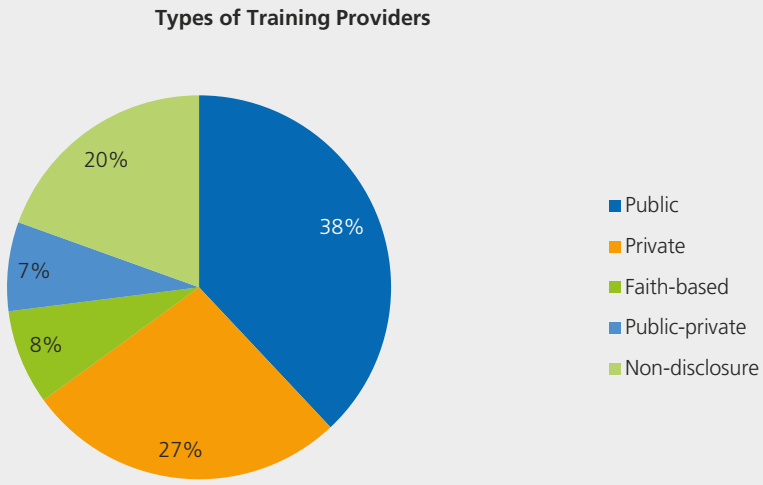
Again, in Ghana, there was a lot of negative impacts on short and long-term learning outcomes (lost or slowed progress in school or early exit from education). There was also the issue of unsuitable learning environment at home (e.g. overcrowding) and no access to distance learning materials (e.g. no access to ICT). Moreover, the study revealed that boys and girls may be vulnerable to gendered traditional roles in households (e.g. increased involve-

ment in child labour for boys and childcare and early marriage for girls) which may occur more frequently in economically vulnerable households. Finally, children in Ghana faced the mental health burden of the loss of access to children's peer networks (UNICEF 2021).

## 3. The impact of COVID-19 on TVET programmes and providers

When TVET institutions partially reopened in August 2020, the Commission for TVET conducted a survey of the effect of COVID-19 on TVET programmes and providers to ascertain the level of damage done by the disease. Overall, 200 TVET providers were surveyed. With the majority of the respondents (38 percent) coming from public TVET institutions.

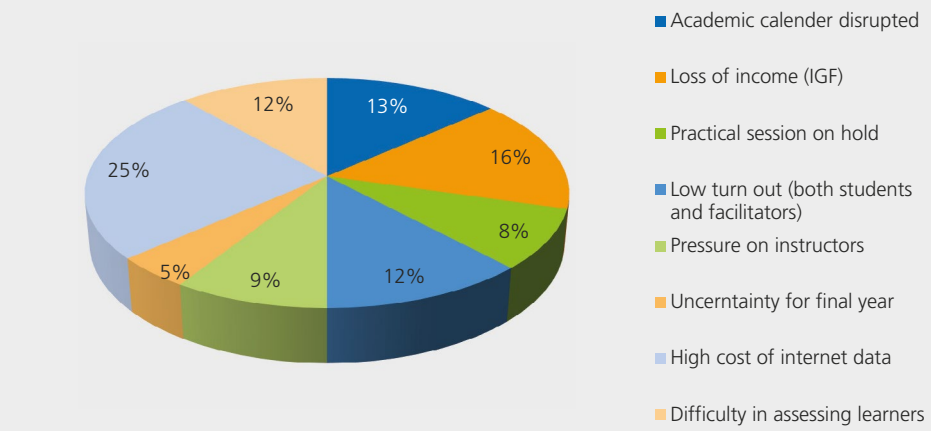
**Figure 1: Types of training providers**




Source: CTVET 2020 COVID-19 SURVEY

From this study, the major effect of the pandemic on TVET providers and programmes was the high cost of Internet data which made online tutoring difficult to implement in TVET schools (25 percent of respondents). This was followed by disruption in academic calendar which affected teaching and learning (13 percent of respondents). The next significant effect was the difficulty in assessing learners (twelve percent of respondents).

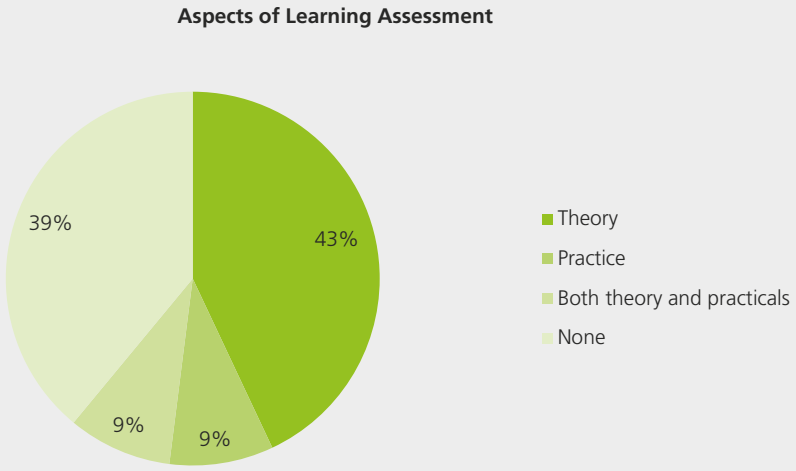
**Figure 2: Effects of the COVID-19 pandemic**




Source: CTVET 2020 COVID-19 SURVEY

From the above, it is not, therefore, surprising that out of 200 respondents 164 were either not assessing their learners or assessing them on theoretical aspects of their training. This is significant because Ghana has adopted a harmonized CBT approach to teaching in TVET schools. One of the overriding principles of this approach is the emphasis on practical training as opposed to theoretical training, and as such teaching and assessing leaners using theory defeats the CBT concept.

**Figure 3: Aspects of learning assessment**




Source: CTVET 2020 COVID-19 SURVEY

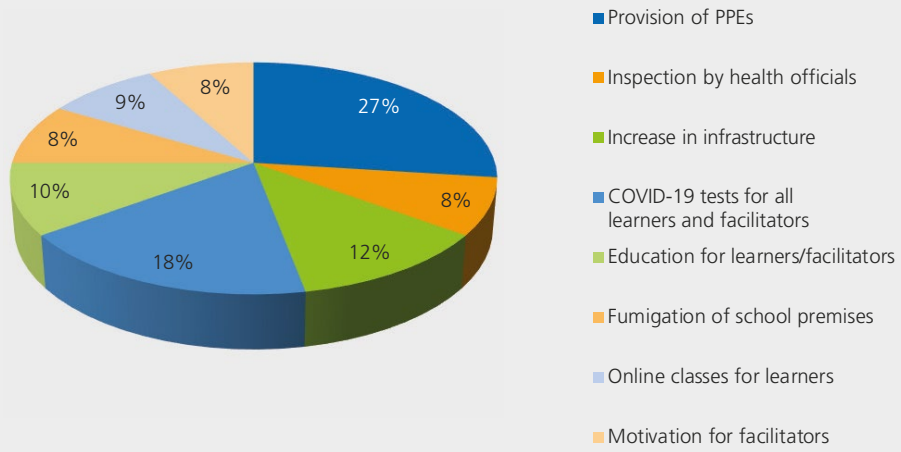
Normal school activities have since resumed, and most of the issues that were raised during the survey has been dealt with as a result. However, schools are to adhere strictly to the COVID-19 protocols.

## 4. Recommendations and actions taken

Most of the recommendations from the respondents centred around the provision by the government of Personal Protective Equipment (PPE's) to training providers and free periodic COVID-19 tests for all leaners and facilitators (27 percent and 18 percent respectively).

In addition to this, the training providers also recommended that health officials inspect their schools and test students from time to time. They also suggested the increase in infrastructure to help in ensuring social and physical distances in classrooms.

**Figure 4: Recommendation from TPs**




Source: own representation

In this regard, as part of measures for the reopening of schools, the Ministry of Education linked all schools in Ghana to a health facility to help in treating students who may have been in contract with the virus. In addition to this, the Ministry distributed facemasks, hand sanitizers, veronica buckets, and thermometer guns to all schools before reopening.

In cases where some learners developed symptoms of the coronavirus desease, the Ghana Health Service deployed doctors and nurses to the specific institution for all students and staff to be tested, and those who tested positive were isolated and treated.

The Government of Ghana also launched the Ghana CARES Programme (Obaatan pa), which cost GH¢ 100 billion, and TVET providers are encouraged by the Commission for TVET to apply for support under this programme.

On 18 November 2020, the then Senior Minister, Hon Yaw Osafo Maafo, on behalf of President Nana Addo Dankwa Akufo-Addo, launched the Ghana COVID-19 Alleviation and Revitalization of Enterprise Support initiative in Accra.

The Ghana CARES (Obaatan pa) programme is an unprecedented, bold, and audacious GH¢ 100 billion post-COVID-19 programme intended to stabilize, revitalize, and transform Ghana's economy to create jobs and prosperity for Ghanaians over a three-year period. It is sequenced in two phases: a Stabilization Phase that is running from July till the end of the year (2020); a medium-term Revitalization Phase from 2021 to 2023 (Ministry of Finance 2020).

## 5. Conclusion

The COVID-19 pandemic was unexpected, and no country was adequately prepared for it.

The Government of Ghana through the Ministry of Education and the Commission for TVET has taken proactive steps to ensure that the impact of the pandemic is minimized in the country.

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*Christina Boateng*

# Increasing teachers' technological skills with a nationwide project

Christina Boateng, Senior Lecturer at the University of Cape Coast, and Julia Olesen, senior technical adviser and project manager at the German Office for International Cooperation (GOVET) at the Federal Institute for Vocational Education and Training (BIBB) in Germany, reflect on the impact of the COVID-19 pandemic on Technical Vocational Education and Training (TVET) in Ghana and on how digital competences of training personnel can be increased.

**Julia Olesen (GOVET):** Dr. Christina Boateng, you are a professor teaching at the University of Cape Coast (UCC) in Ghana and the coordinator of the UNESCO–UNEVOC Centre at UCC. In our series of bilateral workshops on the impact of the COVID-19 pandemic on Vocational Education and Training,[1] you have already presented some insights during our workshop with Ghana in April 2020. Looking at Ghana's TVET system and how it was affected by the COVID-19 pandemic, what were the short-term impacts?

**Dr. Christina Boateng (University of Cape Coast):** One of the most obvious short-term impacts was the loss of learning hours. In Ghana, there was a total shutdown of schools from March to December 2020. This reduction of learning hours has an impact on the progress of students, obviously. Another impact in TVET was the disruption of work-based learning or what we usually call "on the job training". Because of social distancing and other protocols that were in force, companies would not take on students, as many of them had to close down completely or run shift systems. Some students also work outside from the classroom on part-time; this also came to a complete halt. Students who were supposed to do industrial attachments or workplace-experience-learning had lost that opportunity.

1 Refer to https://www.govet.international/de/137780.php (Retrieved on 22.11.2021) (in German).

**Julia Olesen:** Did this also affect the informal sector and apprenticeships?

**Christina Boateng:** Yes, indeed. In larger cities, there were complete lockdowns for several weeks. Therefore, students lost hours and days of training. Apprenticeships, trainings in the informal sector, are based on the business of the Master Craft Person who is instructing the student or apprentice. If there was no business activity, it meant there was not much to learn for students. When it comes to apprenticeships in Ghana, one of the big sectors or industries engaged in informal training is the events and entertainment sector. However, as everywhere, the events organization and hospitality industry were totally shut down and are still under restrictions. During the shutdown, there was no business and hence no training in that area. One particular area where usually a lot of training takes place is garment production and tailoring; it was really affected. There was no work in that area as the whole sector was on hold as a result of the restrictions.

**Julia Olesen:** How did trainers and students maintain contact during the shutdown?

**Christina Boateng:** When schools were closed, trainers found other means of communication and maintaining the contact with students. Many of them resorted to WhatsApp; it was the most popular form of communication with students. Trainers and teachers would send either text messages or record information in audio format. There was a learning TV station broadcasting on national TV by the government, but there was no specific offers on TVET and rather focusing on general education, such as literacy, mathematics, language, sciences, and physics. But nothing specifically for TVET. It was up to the individual institutions and teachers to find the best way to engage with the students. I think there was a lot of pressure on trainers to find ways and means of maintaining contact with their students even if it meant having to learn new skills.

**Julia Olesen:** How is the situation today, mid of 2021?

**Christina Boateng:** The situation has improved a lot: our schools are back to face-to-face sessions, observing hygiene and safety protocols. In basic, secondary education, and TVET, classes are usually large, consisting of 40-50 students. But now classrooms had to be reorganized in order to ensure a one meter distance between all students. Another problem is that now teachers have to work extra hours: due to the hygiene and safety protocols, classes may only have 25 students, but if the class size is usually 40 to 50 students, the teachers are expected to teach twice, resulting in extra hours for them.

So, that is the situation right now. At the same time, as we have also introduced our project, teachers and students are adapting to new forms of learning and teaching if their facilities allow it. It has become easier to manage larger numbers of students with digital support. Many of them are also using technology to try and recover some of the lost hours.

**Julia Olesen:** You are coordinating a collaborative project between UNESCO–UNEVOC and UCC to strengthen the capacity of TVET instructors in Ghana in the use of technology-supported teaching learning strategies. Where do you currently stand in this project and what are the major activities?

**Christina Boateng:** Yes. I had the opportunity to participate in the UNESCO–UNEVOC leadership programme in 2018. In 2020, a call came to alumni of the programme to propose collaborative projects for funding. When I observed that the learning TV had nothing specific on TVET, I decided I would propose something to enable TVET trainers to develop their capacity to engage trainees while they are at home because at that time we were not sure when schools were going to reopen.

As the first step in the project we investigated what kind of facilities with regard to digital learning exist in public TVET institutions already. When we are talking about innovative and different ways of teaching, we must also consider the various levels of technology available. The question in our context was what can be done, even with limited resources? We did a needs assessment first, and it turned out that there were some basics: there was basic literacy in ICT among students and teachers as every TVET programme has ICT as a mandatory subject and every school has at least a few computers or an ICT lab. Teachers and students know their way around and have basic ICT literacy. What teachers needed to know was where to find specific information or guidance about tools they could use for distance teaching.

As part of the project, a manual providing information on general tools available to teachers and trainers was developed. The manual also provides information about the methods and pedagogy that they can adapt in order to integrate technology in every subject. The objective was to integrate ICT in trade subjects, e.g. how to use digital technology to teach leather work or plumbing. Trainers were encouraged to adapt methods and digital tools to their field of work. We also exposed them to open learning resources where they could download, adapt, and repurpose materials in every field of work.

We brought in trainers from all 28 trade areas that are imparted in public TVET institutions. Additionally, there was a regional distribution of the participants, making sure that there were at least three trainers from each region. Eventually 53 trainers from across the country were invited to our trainings. We trained them, and they would train others. So right after the training, they returned to their schools and started training their colleagues. We have exposed them to google classroom, google meet, and schoology (an assessment platform) as alternative tools for their classes.

As part of the project, we are now introducing regional trainings which all the teachers are very excited about. In Ghana, we have more privately owned schools than publicly owned TVET institutes. In the first phase of our project, we targeted public schools. We are now working with the trainers of each region to train other teachers and instructors who would want to participate even from the private sector.

**Julia Olesen:** How has the training of instructors actually improved their teaching?

**Christina Boateng:** From the teachers' point of view, it definitely has enhanced their work. The training has exposed them to certain databases and information they had not been familiar with before. Scoring in theoretical exams can be done now with google classroom or schoology. The assessment, especially for larger classes, as it is mostly the case, has become much easier. For teachers this has been a real improvement.

**Julia Olesen:** Have they also noticed an impact on practical training?

**Christina Boateng:** Yes, thanks to the training and the manual, now trainers have access to a wider range of materials, including videos, informative graphs, etc. Students can, for instance, see how a production process works instead of teachers describing and drawing explanations on the board and leaving it up to imagination. With the introduction of open learning resources, trainers and students can access more information, e.g. videos that they can download. Students are able to see how processes really work. Teachers do not have to teach in abstract terms. I remember one of the teachers told me that it has always been difficult to explain something you have not even seen yourself. Now, videos make it much easier, and students respond to it very well. The project has helped teachers to vary their methods but also the content of their courses; the access to more relevant information in their field of work has expanded.

**Julia Olesen:** How did students react to the new tools?

**Christina Boateng:** People's perception of TVET is not the best, so with the application of new and digital tools, learners were very excited about it and increased their engagement. To see TVET imparted in a new and modern way increased the motivation of students. It shows how important the application of new technology in TVET is for young persons, especially because many students have smartphones and have a basic understanding of technology. They use it for other things and now they have started to understand it as an educational tool. This is a shift of paradigm because now the smartphones that young persons use the most, not desktop computers, have become and converted into an educational tool. That alone, this shift, has been exciting for students.

**Julia Olesen:** How do you think digital skills and competences can and should be expanded in the future?

**Christina Boateng:** Teachers need to periodically update their knowledge of technology. The refreshing and further development of knowledge is very important for teachers. In a project like ours, we targeted just the teachers of public institutions, but as I have mentioned, there are more private institutions with trainers also requiring theses digital skills. However, our initiative is limited in its capacities. So far it has just been the tip of the iceberg.

**Julia Olesen:** In the bilateral workshop on the impact of COVID-19, you mentioned that some of the main challenges were connectivity and access to Internet and devices. How are these tackled in the project?

**Christina Boateng:** Yes, those are definitely big challenges. Even here at the university, earlier today we did not have Internet connection at all. It is a big challenge for the whole country, so it is also the same for TVET institutions. Of course, some schools are better endowed and have better resources than others, but in some places, connectivity is just bad most of the time. But even in those places, teachers find flexible ways, e.g. they switch between different places depending on their need for connectivity. They upload and download files in one place and then work with the materials offline.

Another issue is the cost of data, which usually have to be covered by teachers or students individually. For public institutions, it is not possible to provide mobile data to them. But the project has created the awareness and the excitement, so teachers and learners manage to get internet and the data when they want to.

**Julia Olesen:** After almost 10 months of school closures, what do you expect to be the long-term impacts?

**Christina Boateng:** Some students have not returned to school after they reopened. Maybe they have lost interest and exited education early. Some students also needed to start working or did not see the sense in waiting for schools to reopen. TVET is still not a popular form of education, you know. So if students do not benefit from it, because schools are closed, they direct their attention to something else.

Another long-term effect for our economy and country is the loss of skilled labour. Young persons rather go to do any job but remain unskilled. If people are leaving education so early, it can lead to streetism, roaming around without any fixed structure or work. The share of NEETs (Neither in Education, Employment, or Training) is expected to increase. Young people rather tend to hawk in the street. In their perception, they are working, but is it a stable, secure, and productive job? They do not have enough skills for anybody to take them into any good or regularized work. Generally, for young persons, it has a big impact on their biography if they leave the education system early and do not enter a stable workplace, whether formal or informal.

# Israel

*Benjamin Bental, Alex Weinreb, and Avi Weiss*

# Government involvement in Vocational Training during the COVID-19 pandemic – the case of Israel

Vocational Training in Israel is sponsored and monitored through a complicated web of government ministries and agencies. In response to the COVID-19 crisis, which dramatically increased the number of workers who were separated from their jobs, the government initiated a large programme that included, among other things, funds for Vocational Training. However, due to the complexity of the system, only about a third of the allocated amount was utilized, which is reflected in the small number of workers who have actually been retrained. Currently, an ambitious training programme of the Innovation Authority is underway, providing technical skills to about 6,000 workers.

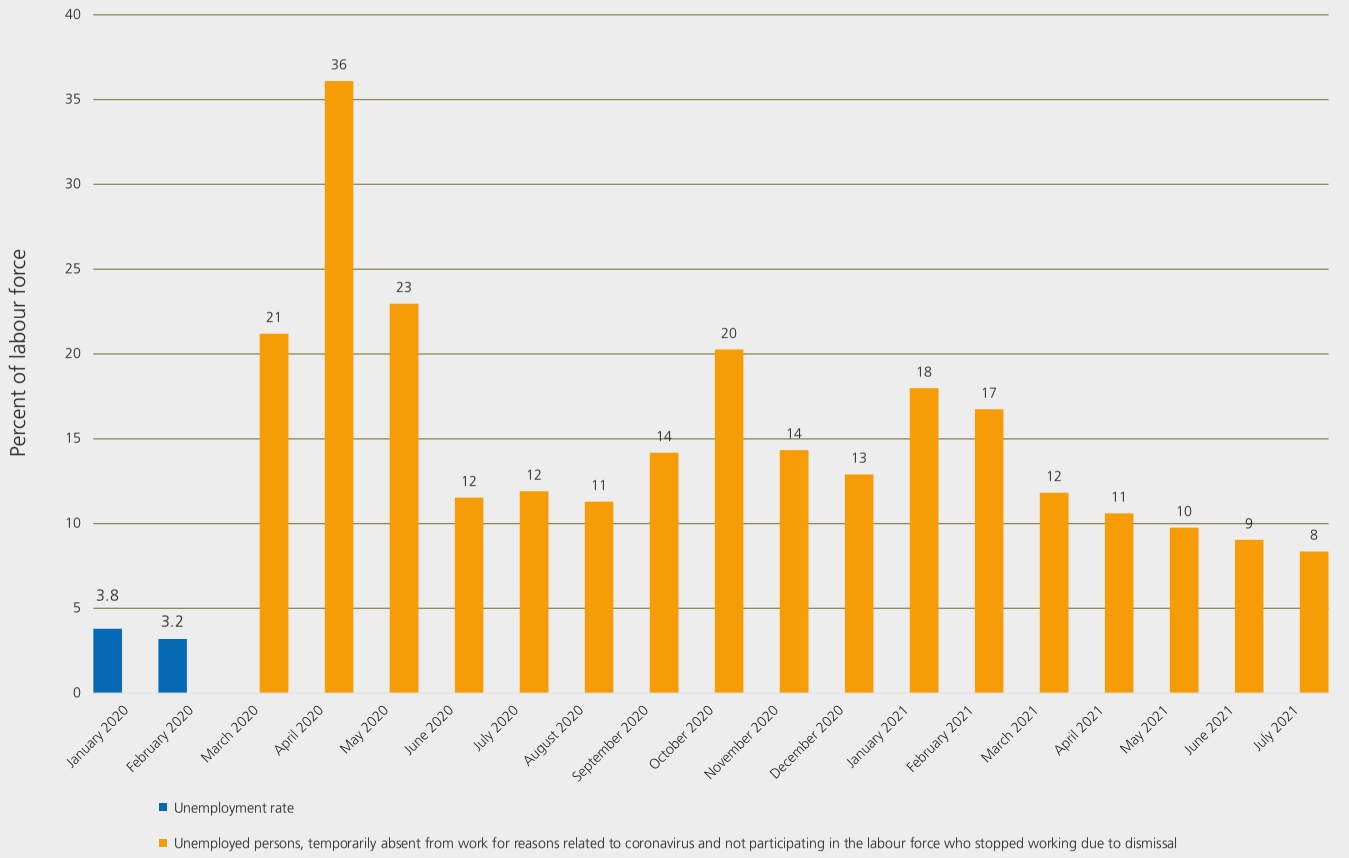
## Background

When the COVID-19 pandemic hit, the Israeli economy was strong, with unemployment at a record low. This situation changed overnight, with the first lockdown starting on 15 March 2020. As a consequence of the lockdown, 875 thousand persons out of a labour force of 4.1 million found themselves jobless. In April, that number rose to 1.5 million (see Figure 1). As in other countries, the hardest hit were young, less educated workers in the service-related sectors of the economy.

The government's response to the dramatic crisis was to adjust the existing unemployment compensation scheme which had been designed to address "normal" incidence of unemployment. The new scheme treated every worker who was "temporarily" laid off as unemployed, enabling them to collect unemployment compensation payments for as long as the worker remained out of job, through the end of June 2021.

Given the magnitude of the problem and the enormous costs the government faced, various active labour market policies were enacted, particularly in the field of Vocational Training. We begin with a short description of Vocational Training in Israel and then present the changes adopted.

## Figure 1: Unemployment and temporary leave of absence in Israel (in %)




Source: own representation

## Vocational Training in Israel

Israel's post-high school vocational system is complex, under-budgeted, and quite disorganized, being handled by several ministries (Labor, Education, Economic Affairs, and Defense). It is mainly carried out through formal and informal courses, with only 0.5 percent of the trainees being trained in workplaces compared to 50 percent in the UK and up to 80 percent in Germany (Porat/Kedar/Regev 2020).[1] The Ministry of Labor sponsors and monitors over 60 technical training colleges geared mainly towards individuals in their twenties (that is, after mandatory military service). This activity is budgeted at about NIS 160 million (roughly USD 50 million). During 2017/18, these institutions trained about 32,000 students.[2] The training lasts between two and three years. In addition, the Ministry of Education is responsible for one- to two-year practical engineering training programmes aimed at training high school graduates before their mandatory military service. Roughly 6,000 students were enrolled in that programme in 2017/18.[3] Finally, an unknown number receive some Vocational Training during their military service, although this naturally excludes most Haredim (ultra-orthodox Jews, roughly 13 percent of the population) and Israeli Arabs (roughly 21 percent of the population), who for the most part do not serve in the military.

## The coronavirus crisis

### 1. General governmental measures

The Israeli Government allocated a total of NIS 202.3 billion (about 14 percent of the 2019 GDP) to soften the blow of the crisis. Out of that amount, NIS 1.5 billion (0.7 percent) was allocated to professional (including academic) training. However, up to July 2021, only 36 percent of that sum was used.

### 2. The Israel Employment Service

The main body responsible for the implementation of the Vocational Training programme is the Israel Employment Service of the Ministry of Labour. This governmental service is operated through employment offices helping (in regular years) over 400,000 individuals find employment. During the pandemic, in April 2020, a peak of 1,350,000 workers were registered in the Service. This included everyone registered as out of employment and not only those actively looking for employment.

1 See also Kuczera/Bastianić/Field 2018.

2 The cohort of 18-year old numbers about 140,000.

3 Israel Central Bureau of Statistics.

The Service operates a variety of programmes to facilitate job search. Among others, it helps in writing job applications, improves Hebrew language skill, and provides some basic digital training. It also refers individuals to Vocational Training programmes.

According to its 2020 annual report, the Employment Service carried out 8,273 professional training programmes, almost 4,000 less than in 2019 – this decline was due to the lockdowns that closed teaching and training facilities. However, even with this decline, the Service provided 43,081 individuals with "workshops and occupational training." It referred 4,514 individuals to professional training courses, although only 33 percent of them actually participated in the courses. Another 2,599 individuals were given vouchers to participate in employer-sponsored training programmes. A special programme aimed at individuals characterized as high risk of becoming long-term unemployed sent 2,418 individuals to professional training courses. Twenty-five programmes that train unqualified individuals according to employers' requirements were operated (the number of participants was not reported). About 1,000 workers were retrained in collaboration with the Ministries of Health and Education to become pharmacists, laboratory workers, and teachers, respectively. Finally, 633 individuals were enrolled in programmes that used an employer voucher to subsidize employer-provided training up to NIS 2,500 (about USD 800) per trainee. The small number of trainees in this programme resulted from the fact that this programme was not budgeted during 2020.

This array of retraining initiatives sponsored by the Israel Employment Service sounds impressive. It sounds somewhat less so when we compare the enormous number of individuals who lost their jobs during the pandemic – from 875,000 to 1.5 million during the initial stages – to the number retrained through one of these initiatives. On the other hand, Figure 1 implies that most of the newly unemployed in April 2020 did not need retraining to find a job – by July 2021, unemployment had fallen to about 8.0 percent. Yet that was still far in excess of the 3.2 percent in February of 2020. And it was occurring alongside significant labour shortages in the tech sector, pointing to one inviting area for labour mobility. That is where the third initiative, to which we now turn, came into play.

## 3. The Innovation Authority

The Innovation Authority, which has been recently moved to the Ministry of Science and Technology, is responsible for the promotion of R&D in Israel through various programmes that help finance risky projects. The Authority has also become involved in training programmes aimed at training professionals for Israel's thriving hi-tech sector.

At the end of 2020, the Innovation Authority announced "an emergency program," budgeted at NIS 120 million (about USD 35 million) and aimed at subsidizing short training programmes for over 6,000 professionals in "development support and business areas." The programme is geared towards all industries, traditional as well as hi-tech. Firms could apply for the programme, provided they offered training to at least 10 trainees. The programme offers powerful incentives: NIS 5,000-11,000 per trainee (depending on the technological

sophistication of the training programme). In addition, the programme offers a grant of NIS 11,000-24,000 per every trainee who is hired at a sufficiently high salary and a bonus of NIS 5,000-10,000 if the hiring salary is especially high. Forty-seven organisations won the tender to participate in the programme.[4]

Clearly, the subsidy per trainee implied by this ambitious programme exceeds by almost an order of magnitude that of the Israel Employment Service. While its main goal is to increase the supply of technical personnel to the high-tech sector, it is also aimed at providing retraining to workers whose current skills no longer fit the labour market demand. Thus, the programme's impact on the unemployment rate is not likely to be significant.

## Summary

The COVID-19 crisis has exposed some of the weaknesses of Israel's Vocational Training programmes. The most striking one, relative to most developed countries, is the low involvement of employers in these programmes. This has made it very difficult to build a bridge between the high supply of ill-qualified individuals and the demand for professionally trained personnel and is probably the principal reason for the low exploitation of the budgets allocated for retraining.

The aforementioned weakness has been recognized by the OECD and Israeli research institutions. The consensus recommendation is to streamline Vocational Training in Israel, organize it under the Ministry of Education, improve monitoring of curricula, provide training centrer with the incentives that will depend on the placement of their graduates, and facilitate the flow between vocational and academic training. These are far-reaching reforms touching upon some deeply rooted vested interests. Therefore, their implementation requires governmental action. It remains to be seen whether such actions will take place.

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4 See https://innovationisrael.org.il/ef and https://innovationisrael.org.il/press_release/5299 (Retrieved on 01.12.2021) (both in Hebrew).

*Orit Vaknin-Shiloh and Shai Hen-Gal*

# The effect of the COVID-19 crisis on the mental health of students in vocational schools

The past year has been overshadowed by the coronavirus pandemic. Alongside far-reaching health and economic consequences, the pandemic also has significant psychological consequences for young people, and it is important to investigate these. This study attempts to assess the scope of the changes that have taken place in the past year in regard to suicidal behaviour, mental distress, and risk behaviours in at-risk adolescents studying at schools under the auspices of the Vocational Training Department. A longitudinal study was carried out for this purpose. This entailed the use of self-reporting questionnaires to investigate the frequency of suicidal thoughts, suicide attempts, depression, anxiety, and alcohol use in 6,500 students during the COVID-19 crisis in addition to a comparison with the data gathered in the previous year. The data comparison indicates a significant increase in the frequency of mental distress indicators and risk behaviours and in particular a dramatic increase in suicidal behaviour and depression indicators. This article describes the key points of the immediate intervention programme set up by the Vocational Training Department/Youth Department in the current academic year in light of the present data.

## Introduction

### Vocational Schools

Managed by the Vocational Training Department, Vocational Training in Israel is a high school study programme which provides Vocational Training to students aged between 14 and 18. The system is based on the dual model which combines studies with practical paid work in the profession being studied.

The school programme lasts four years: 9th grade – general, 10th grade – specialised, and 11th and 12th grades – studies alongside paid practical work. Approximately 11,000 students study in 62 vocational schools.

The youth Vocational Education system is an excellent and thriving system which addresses the students' various needs while giving them space for expression, creation, and learning, thereby offering them an opportunity for personal development and self-fulfilment.

Graduates are awarded a professional certificate which is relevant to the changing world of work. The schools supervised by the Vocational Training Department are unique in that they provide practical training in the workplace as well as theoretical knowledge. The school is responsible for placing the student in a workplace and assisting them with the acclimatisation and integration process. The schools have students who wish to acquire vocational knowledge during their high school years as well as students who have problems in school and are at risk of dropping out of the normal study framework.

## The treatment system in the Youth Department

Most young people at the vocational schools are defined as being at risk of suffering from significant emotional, social, and family distress. The treatment system is responsible for treating the students who are in distress, increasing their mental resilience, and improving the educational environment in order to help them succeed in their studies, acquire a profession, do their military service, and take their place in Israeli society.

**The structure of the treatment system:**
Approximately 110 counsellors are deployed nationwide, and they receive in-work training throughout the year.

**Key services supplied by an external provider:**
A. Psychological intervention services in emergency student situations.
B. Training services for the counsellors and educational team.

Moreover, every year there are additional projects such as drug and alcohol use prevention programmes; training gatekeepers in the prevention of suicidal behaviour; system work, etc.

The ultra-Orthodox boarding schools have teams of social workers to respond to specific student anxieties. In recent years, the Vocational Training Department's treatment system is considered Israel's leading vocational setup for dealing with the mental distress of young people, and it is a leader in the development of treatment and research solutions in this field. In this context, the treatment programme in Israel is spearheading the implementation of the recommendations of the EU's SEYLE programme which is designed to tackle and prevent anxiety in general and suicidal risk among young people in particular. The programme has been launched in 11 leading European countries and it comprises three key components: 1. Use of questionnaires to find at-risk students in general and suicidal behaviour and thoughts in particular. 2. Assimilation of the school psychotherapeutic model in which each school has a clinical or educational psychologist who treats students known to be at risk, gives guidance to parents, and assists the educational team; 3. Gatekeeper training.

### Literature review: the effect of the COVID-19 crisis on the mental health of adolescents

Data collected by the Central Bureau of Statistics during the COVID-19 crisis reveal that approximately 25 percent of parents reported a deterioration in the emotional well-being of their children as well as a sharp rise in calls to mental health services (CBS 2020). Most of these calls had a background of sadness, isolation, and anxiety. A study of at-risk adolescents revealed a significant rise in mental distress experienced by adolescents expressed in percentages of anxiety and distress at least three times higher than in the previous year (ELEM Israel 2021). In line with the increase in mental distress, there was also a rise in self-harm attempts (1.5 times higher than in 2019). A study carried out by the Ministry of Health of mental health clinics for children and adolescents revealed that there was a significant to extreme rise in new calls for help during the second wave of COVID-19 (Budovsky/Sasar 2020). An especially significant rise was reported in calls with suicidal content. The clinic directors reported that long-term patients experienced a worsening of their anxiety, mood disorders, eating disorders, and behavioural disorders.

Global findings present data similar to the Israeli findings. In Australia, for example, adolescents experienced a significant rise in symptoms of depression and tension and a decline in general life satisfaction (Magson et al. 2021). In Sweden too, a study of adolescents found that during the COVID-19 crisis, there was a rise in suicidal behaviour, alcohol use, feelings of sadness, isolation, pressure, many conflicts with parents, and decline in social contact (Kapetanovic et al. 2020). An additional study of data from the United States and Europe found that the COVID-19 crisis resulted in a significant rise in reports of suicidal behaviour among adolescents (57 percent) (Manzar et al. 2021).

## This study

### Participants

Approximately 6,500 students aged between 15 and 18 from schools throughout the country participated in the study of the Vocational Training Department. All the students filled in a set of questionnaires – generated for each student – regarding many mental distress factors, the main ones being suicidal behaviour, depression, and anxiety. Professional recommendations for continued treatment are attached to the diagnostic report. Seven days after the questionnaires are filled in, the full diagnostic report is sent to the school psychologist who acts in accordance with its recommendations and continues to build a treatment programme for the students.

The students filled in the questionnaires at two different times of year: September–December 2019 (before the outbreak of the COVID-19 crisis) and September–December 2020 (at the height of the COVID-19 crisis). 78 percent of the participants were boys and 22 percent were girls. 42 percent of the students were from the Jewish sector, 53 percent from the Arab sector, and 5 percent from the ultra-Orthodox sector.

## Key findings

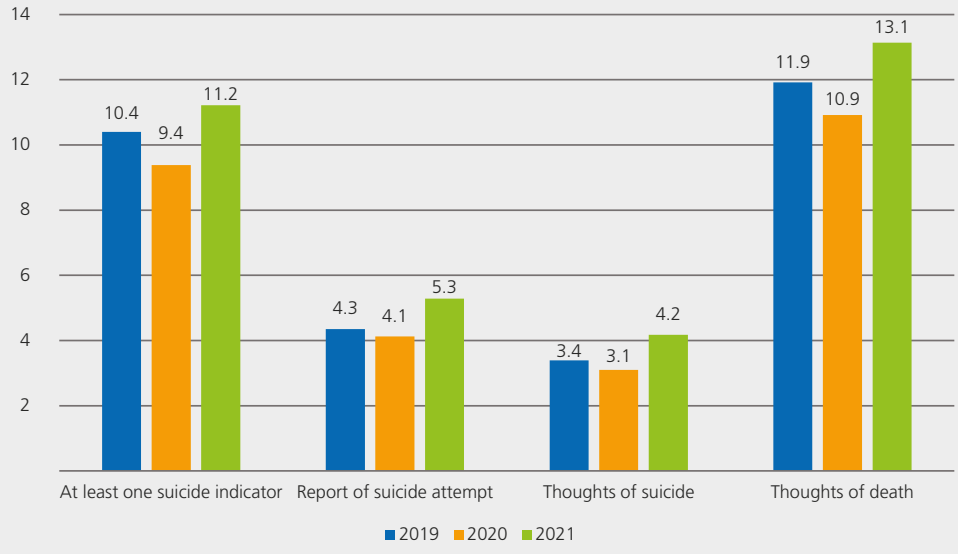
### Suicidal behaviour

On a national level, it is clear that this year there has been a significant increase, averaging 25 percent, in all suicide indicators in comparison with previous years. Approximately 900 students reported suicidal distress. The most worrying finding is evident in a rise of more than 30 percent in the number of students who have reported suicide attempts in recent months.

**Table 1: Suicidal behaviour data**

| | 2020 | 2021 | Change percentage | Test significance $X^2$ |
|---|---|---|---|---|
| **Thoughts of death** | 9.4% | 11.2% | 20% | p<.001 |
| **Thoughts of suicide** | 4.1% | 5.3% | 29% | p<.001 |
| **Report of a suicide attempt** | 3.1% | 4.2% | 31% | p<.05 |
| **At least one suicide indicator** | 10.9% | 13.1% | 20% | p<.001 |

**Figure 1: Suicidal behaviour data at the national level (in %)**




Source: own representation

## Severe psychological distress

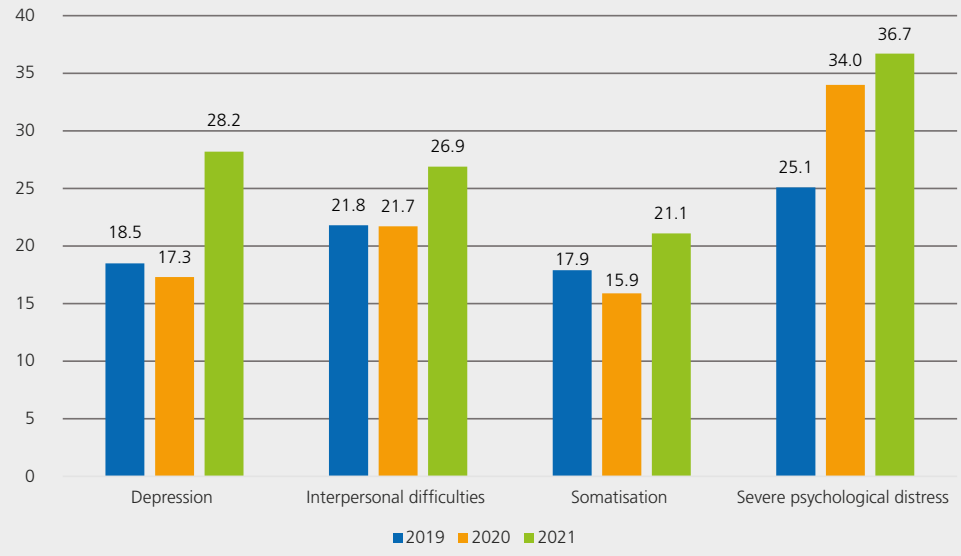
Approximately 2,380 students reported severe psychological distress, approximately 38 percent of the total number of students. This is an increase of approximately 11 percent compared with the previous year in which 34 percent of students reported severe distress.

It is evident that the rise in severe distress at the national level stems primarily from a significant increase in reports of: depression (increase of 65 percent), somatisation (anxiety) (increase of 34 percent), and interpersonal difficulties (increase of 26 percent).

**Table 2: Psychological distress data**

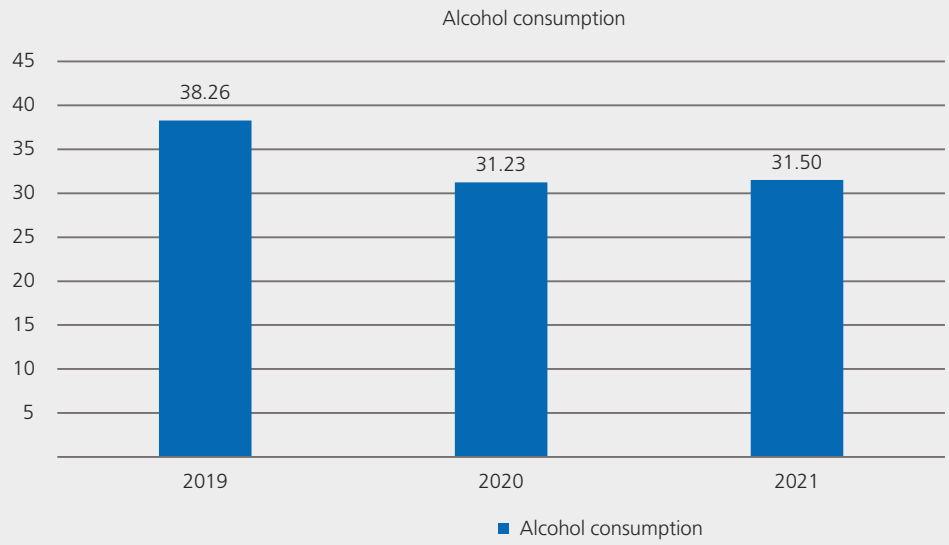
| | 2020 | 2021 | Change percentage | Test significance $X^2$ |
|---|---|---|---|---|
| **Severe psychological distress** | 34% | 37.7% | 11% | p<.05 |
| **Depression** | 17.3% | 28.2% | 65% | p<.001 |
| **Somatisation (anxiety)** | 15.9% | 21.1% | 34% | p<.001 |
| **Interpersonal difficulties** | 21.7% | 26.9% | 26% | p<.01 |

**Figure 2: Psychological distress (in %)**




Source: own representation

**Figure 3: Alcohol consumption (in %)**




Source: own representation

## Alcohol consumption

In 2021, there has been a significant increase in students' reports of alcohol consumption compared with 2020 ($p < .01$).

## Description of the intervention programme

In light of the findings indicating a dramatic increase in mental distress in general, and suicidal behaviour and depression among young people during the COVID-19 crisis in particular, the Youth Department of the Vocational Training Department has initiated and led an urgent, immediate treatment intervention programme. Launched in January 2021, the programme includes the following components:

1. *Reinforcing the psychologist system in red schools with a high percentage of students in suicidal distress.* Considering the significant increase in the number of young people reporting suicidal distress, it was decided to reinforce the psychologist system in schools in which the number of students reporting suicidal behaviour has risen sharply to enable treatment for all students reporting suicidal distress.
2. *Gatekeeper training.* In all schools, gatekeepers have been trained to help educational treatment teams find students in distress and initiate primary intervention.

3. *System work.* Every school received a data report on the educational environment, and a team of instructors led an intervention programme with the school director and the educational teams in order to improve the educational environment.
4. *Strengthening links with the welfare teams* and treatment at the national level in order to create treatment sequences between the treatment setup in school and the treatment setup in the community.
5. *Psychiatric centre.* The treatment teams have been instructed to consult with the special psychiatric centre set up by the Ministry of Health to assist the treatment teams in the schools as part of the national programme for prevention of suicidal behaviour. [sic]
6. *Parent resilience programme.* Many schools have put in place a parent resilience programme which is designed to strengthen cooperation and a feeling of empowerment in parents for the benefit of the students' mental well-being

This intervention programme has received much praise from the Ministry of Health and the National Council for the Prevention of Suicidal Behaviour in Israel, which emphasised the importance of the immediate, professional, and data-based action taken in light of the sharp rise in general mental distress indicators and suicidal behaviour in particular. The current situation shows that the programme has provided a treatment solution for approximately 2,400 students in distress and enabled them to successfully continue their studies, acquire professions, and increase their mental resilience.

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# Italy

*Alessandra Biancolini and Andrea Simoncini*

# Rethinking training and active labour policies in Italy: exercises in resilience in times of COVID-19

The pandemic represents at the same time a difficult crisis in the global economies and a challenge to innovate policies devoted to education and Vocational Training. The advent of distance learning and agile working, born in the first emergency period and rapidly accepted as solutions at hand, concretely boosted the development of digitisation in all the sectors, while the stop to mobility revamped the debate around the need for greener economies and protected environment. Despite of that, the current crisis in the short and medium terms represents a loss of competitiveness, from labour to education, if policies do not use the opportunity to reskill and upskill the parts of population at risk of social exclusion and if the school system does not integrate skills anticipation methods. To face this situation, Italy is exercising the resilience through a systemic approach outlined in the National Plan for Recovery and Resilience that is declining the Next Generation EU at the national level. In the next five years, investments are provided to revamp active labour policies and reshape lifelong learning policies with a focus on upskilling and reskilling in digital and green economy. Vocational Education and Training will be also supported through dedicated funding with the aim of consolidating the very positive trends noticed in dual education systems since their formal birth in 2015.

In more than a year that passed since the start of the COVID-19 pandemic, the lives of Italian students and workers have changed profoundly. Distance learning and agile working (i.e. remote working) is now a widespread reality in the country. These solutions were born and grew rapidly to stop the spread of the virus. Today, they pose significant technological challenges, while also representing great opportunities for the transition of systems as well as unprecedented scenarios in the context of lifelong learning policies. The current pandemic has fundamentally reshaped the landscape of lifelong learning policies, highlighting a need for new skills, from digital to "green". Furthermore, it has activated more coordinated and effective measures in terms of outreach. In the wake of the European policies of the Next Gen-

eration EU programme, Italy is also strengthening measures aimed at combating job losses and school and training dropouts.[1]

## 1. The context: the crisis sparked by the pandemic and the challenges in front of us

The "Next Generation EU" programme and the green and digital transition highlighted against the backdrop of the future European economies are a historic opportunity for Italy. The reforms outlined within the Italian PNRR place a strong emphasis on the digital transformation of the Country and involve both public administrations and companies, with major system repercussions on general competitiveness (Italian Government 2020). The health crisis has turned the spotlight on some pre-existing chronic problems of our economic system, exacerbating some systemic challenges for the world of education and Vocational Training and for the world of work. Dramatic youth unemployment and a significant proportion of inactive people[2] on the domestic labour market contribute to a very heterogeneous and destructured labour market. In general, human capital in Italy is characterised by low levels of qualification corresponding to limited mathematical and language skills with low overall competitiveness[3] and, despite Italy being Europe's second largest manufacturing economy, lacking policies for the structural consolidation of Technical Vocational Training. A truly "dual" system of education and training, comparable to that of other manufacturing countries, only began to take concrete shape in 2015, with the government's revival of Vocational Training – the "Italian approach to the dual system" (Bobba 2015). This has led to a reservoir of excellence and good practices in the regions with the greatest industrial and artisan vocations, resulting in a first generation of young people entering the dual system, which now totals an average of around 10,000 per year (Ministry of Labour and Social Policies 2021). The outbreak of COVID-19 has imposed restrictions on freedom of movement and led to the closure of production and commercial activities not considered essential, including the suspension of school and training services, professional training courses and

1 Although "official" data on early school leaving in the pandemic period are not yet available, it is estimated that the phenomenon is increasing to a worrying degree, especially in some regions. For a short regional overview see: https://www.tecnicadellascuola.it/con-la-dad-e-fuga-dalla-scuola-dispersione-scolastica-a-livelli-record (Retrieved on 21.05.2021).

2 About 1.2 million young Italians "under 35"are unemployed, while more than 6 million are inactive. Refer to: https://www.istat.it/it/files/2021/02/Occupati-e-disoccupati_dicembre_2020.pdf (Retrieved on 21.05.2021).

3 According to the 2012 OECD PIAAC survey of 16–65 year-olds in 28 countries, 54 percent of the Italian population has an educational qualification below the diploma, 34 percent has a diploma, and 12 percent a post-diploma qualification (the OECD average is 27, 43, and 29 percent respectively). OECD PIAAC country survey notes: https://www.oecd.org/skills/piaac/Country%20note%20-%20Italy%20(ITA).pdf (Retrieved on 21.05.2021).

workshops, including academic courses. In the first six months of the state of emergency (starting in March 2020), the suspension of classroom teaching and the widespread use of distance learning was not accompanied by a simultaneous resumption of production activities considered non-essential. It caused difficulties in rebuilding the links in the production chain on which the dual education and training experiences of young people were based.[4]

On the other hand, the public health situation undoubtedly affected the survival of some businesses, especially small and medium-sized enterprises – the core of our production system – which must now consider making substantial investments in digitisation and digital skills in order to ensure their survival.

## 2. Support for an economic upturn: short, medium, and long term

Today, the focus of the recovery on the policies that support employability and enhance Vocational Education and Training is central to the debate on the country's "restart". The issue is essentially split into two major areas of priority which are to be addressed in the short to medium and in the medium to long terms:

1. Support for corporate transition through the creation of a consolidated outreach network both in the short term, for workers who have experienced direct effects on their working status (terminations, transfer to other production sectors, drop in productivity for the self-employed, etc.), conveyed through a comprehensive reform of social shock absorbers; and in the medium to long terms through the support of mechanisms anticipating the need for new skills by strengthening the "New Skills Fund" already established in 2020 on an experimental basis to cover company investments in new skills.
2. In the medium to long terms and over the five-year implementation period of the National Recovery and Resilience Plan (NRP), a set of national structural reforms of active policies is to be launched, in coordination with a systemic strengthening of the National Network of Employment Services called "GOL: Guarantee of employability for workers" and together with the definition of a "National New Skills Plan" (PNC) promoted by the Ministry of Labour and ANPAL in agreement with the regions.

The resources earmarked for the two initiatives are substantial: EUR 4.4 billion, plus EUR 600 million to strengthen job centres, and EUR 600 million to strengthen the dual system. This is an important innovation for the world of active policies, which aims to overcome the logic of duality between Vocational Training and active policies and which will support com-

4 The dynamics of the percentage changes in the activation of new contracts broken down by type of employment contract, recorded on an annual basis by the system of Compulsory Notifications of the Ministry of Labour and Social Policies, shows that the "Apprenticeship" type recorded the worst decrease compared to other types of contract: -31 percent in 2020 compared to -11.9 percent for permanent contracts and -18.8 percent for fixed-term contracts (Ministry of Labour and Social Policies 2021).

plementarity, the integration of measures, and the cooperative method of shared governance between the state and the regions.[5] The GOL programme will finance upskilling and reskilling measures for about 800,000 people, paying special attention to the demographics particularly affected by the pandemic (women, young people, and those at risk of exclusion from the labour market) and focusing systematically on Vocational Training in synergy with the dual system and emphasising the consolidation of the highly specialised tertiary technical education sector.[6]

## 3. The importance of Vocational Training in active labour policy revival programmes and the revival of the support of the Italian dual system

The pandemic has certainly caused disruptions not only in the economic cycle but also in education and training policies. The launch of distance learning has been an emergency within an emergency, highlighting the need for infrastructural investments (patchy network and connectivity across the country, difficulty of access in inland and mountainous areas, lack of affordable high speed internet for the less well off, etc.) and also a strong demand for digital skills, especially on the part of school teachers, educators in Vocational Training, and tutors. That is also why the European Commission has adopted a new Digital Education Plan 2021–2027 which aims to create "high-performance digital educational ecosystems", i.e. systems equipped with infrastructure and connectivity but also with human capital having high digital skills and capable of supporting training for trainers and future sustainability (European Commission 2021).[7] It is clear from the policies highlighted that the scenario of digital teaching in all areas of learning is a point of no return and, therefore, needs consolidation and strategic strengthening around ambitious objectives in the near future.[8] Italy's National

5 The scenario to which the programme refers is that of the National Recovery and Resilience Plan (PNRR), Mission 5, Component 1, where the envisaged GOL programme is defined as the pivot of active labour policies accompanied by a National Strategic Plan on New Skills (PNC), combined in an integrated logic and in synergy with the Extraordinary Plan for strengthening job centres which are also part of the PNRR.

6 4.2. Public–private cooperation, i.e. institutions and industry, is a virtuous synergy in the creation of innovative training ecosystems, as recently highlighted by the OECD: "Fostering ecosystems: Cooperation between industry, institutions and academia can also incentivise investment in human capital within the private sector, and promote the transfer of knowledge. In this context, various programmes and policy strategies have been used to ensure partnerships that involve stakeholders from all relevant sectors" (OECD 2021, paragraph 4.2 – p. 38).

7 For more details, see the survey conducted by Inapp during the first lockdown in March 2020 (Ferritti 2020).

8 In drawing up their National Next Generation EU Plan, Member States will have to define reforms and investments up to 2026, taking into account the priorities identified by the EU on the basis of the national contexts for each individual country. Among these recommendations, each country will have to devote at least 20 percent of its budget to digital transition.

Digital School Plan put in place before the pandemic[9] will have to undergo a systemic shift in perspective and, progressing beyond the emergency mindset,[10] will have to take into account the lessons learned during the spring 2020 emergency while simultaneously supporting the opportunities that will arise in the new context of lifelong learning and the relaunching of active labour policies.

As for the dual system, it is worth noting the government's renewed commitment to supporting the Italian system, which in the three-year period (2016–2019) has triggered a major start-up strategy. This is particularly the case in regard to the organisation of apprenticeship courses for obtaining vocational qualifications, diplomas, and higher technical specialisation certificates (so-called "first level")[11] which proved extremely successful in many Italian regions with a strong industrial vocation. The freeze on non-essential economic activities and the slowdown in some sectors of the economy clearly had negative repercussions for apprenticeships, although all the Italian regions have put in place a series of initiatives aimed at safeguarding the validity of the experiments under way: from remote laboratory teaching to the biannual rescheduling of examination calendars for vocational qualifications and the possibility of making up for lessons traditionally held face to face by means of distance learning. Within the framework of the National Reform Programme, and again as part of Mission 5, EUR 600 million will be made available, in addition to the state resources already allocated, to strengthen the dual system which aims to involve about 135,000 young people by 2025. Lastly, in order to support business with up to 9 employees, which were hit hardest by the pandemic, a reduction in social security contributions was financed for employees with a first-level dual apprenticeship contract (initially provided by the budget law for 2020 and extended until end of 2021).

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9 See the website dedicated to the Digital School Plan envisaged by Law 107/2015: www.miur.gov.it/scuola-digitale (Retrieved on 01.12.2021).

10 The PNRR Italy, Mission 4 "Education and Research", among other things, includes the wiring of 40,000 school buildings and the transformation of 100,000 classrooms into "connected learning environments" (Italian Government 2020).

11 Leg. decree no. 81/2015, art. 43 "Apprenticeship for professional qualification and diploma, the higher secondary school diploma and the higher technical specialisation certificate".

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# Russia

*Vladimir Blinov*
The impact of the COVID-19 pandemic on the practice-oriented education sector and assessment methods

*Natalya Victorovna Lomovtseva*
The impact of the COVID-19 pandemic on further learning in Vocational Education: analysis and best practices

*Igor Sergeev*
Career guidance in times of pandemic

*Oksana Sidorenko*
Digital competencies of educators. Before and after the pandemic: experience report from Chita Pedagogical College

*Vladimir Blinov*

# The impact of the COVID-19 pandemic on the practice-oriented education sector and assessment methods

Although the process of digitalization of the intermediate Vocational Education and Training (VET) in Russia began before the COVID-19 pandemic, the usage of distance and blended learning technologies was rare during the crisis. The study identified the main weaknesses of intermediate VET which came to light during the pandemic as well as the barriers to distance learning both for teachers and learners. Therefore, the study emphasises that the problems identified need to be addressed in order to ensure a successful digital transformation process of the intermediate VET.

1. Being a practice-oriented education system, intermediate Vocational Education and Training (intermediate VET) experienced particularly severe limitations between March and June 2020. According to the usual schedules, this is a period of educational and work placement internships as well as of practical examinations in all courses. The unexpected transition to distance learning and the inability to change schedules for graduation courses posed particular difficulties.
2. Surveys conducted in the individual regions of the Russian Federation by the Federal Institute for Education Development of the Russian Academy of National Economy and Public Administration under the President of the Russian Federation revealed the peculiarities and difficulties of the operation of the intermediate VET system during this period. They established that the digitalization of the intermediate VET process began before the pandemic. Many regions (in particular the more industrially developed and financially prosperous ones) created digital platforms for intermediate VET; large colleges (those with more than one thousand students) developed their own digital resources. Electronic educational resources for colleges have begun to appear on the educational software and publications market over the past 4–5 years. However, distance and blended learning technologies were used rarely and in isolation, and there was no corresponding training of intermediate VET teachers.

3. The emergency transition to distance learning has caused an increase in the labour intensity of teaching of approximately 50 percent. Teachers had to master new tasks associated with the processing of digital content, distinctive class planning, online interactions with students, etc. When working during periods of self-isolation, teachers also incurred new expenses, e.g. for remote workplace equipment, high speed Internet access, or software.

4. Many publishers of electronic educational resources and textbooks for intermediate VET provided all colleges with unlimited free access to their digital libraries during the period of restrictive measures. At the same time, analysis of the surveys' results showed that only about 10 percent of Vocational Education programmes have electronic educational resources available to them (in particular, for their theoretical parts). The teachers and masters of Vocational Education/intermediate VET do not independently develop textbooks and manuals for their courses, since, unlike the teaching staff at universities, they do not have the appropriate qualifications.

5. The survey found that the main means of learning were non-platform solutions (Skype, Zoom, social networks, messengers, Google tools, email, etc., as well as individual MOOCs – massive open online courses).

6. The practice-oriented nature of intermediate VET programmes requires students to be ready to apply knowledge and skills in practical professional activities as a result of learning; as a rule, this is not required for more academic disciplines. The surveys showed that, in particular, the "university resources" (MOOCs) were least frequently used for distance learning in the intermediate VET programmes.

7. If the practice-oriented education institution did not have either a single educational platform or available online courses, each teacher developed their own distance learning course using any ICT tools known to them, available methodological recommendations, and their own teaching experience. As the surveys showed, this was the approach used on a mass scale in the intermediate VET system after the introduction of universal distance learning in a self-isolation environment.

8. Currently, distance learning in the intermediate VET system is carried out mainly using disparate, non-platform means, which raises the question of the didactic quality of such an educational process.

9. There are several main barriers to distance learning.
   The group of obstacles identified in the survey as "insurmountable by one's own efforts" includes:
   - technical problems (poor Internet connection, overloaded servers and/or online learning platforms, etc.)
   - general lack of time
   - lack of material and technical resources

- unpreparedness of students
- unpreparedness of teachers to work effectively with distance learning.

10. The intermediate VET students had to face serious challenges as well. An analysis of their study and leisure time in self-isolation revealed two problems: massive disruptions in the daily routines and insufficient technical equipment for learning at home. Breakdowns of the students' daily routines occurred due to the lack of self-organization skills outside of face-to-face contact with teachers as well as a comparatively low learning motivation.

11. An important problem, predicted from the very beginning of the epidemiological restriction measures, was graduates' unemployment risk. As early as in March and April 2020, the vast majority of colleges surveyed potential employers about their intentions to hire graduates. Concerns were raised about vocational areas such as services, catering, hospitality, and culture.
    With the support of government agencies of the subjects of the Russian Federation, branches of the Russian Union of Industrialists and Entrepreneurs, and the Chamber of Commerce and Industry of the Russian Federation, Vocational Education organizations began (and continue) to seek vacancies for their graduates during the period of the pandemic. As a possible solution, some graduates are offered free additional in-demand qualifications as part of the federal "Re-training Programme for Persons Affected by the Effects of the New Coronavirus Epidemic."

12. The main problems of distance learning in intermediate VET and approaches to solving themare:

    A. *The problem of the quality of education.* Distance learning in the intermediate VET programmes does not allow for the effective teaching of all students at the level corresponding to the conditions of traditional (face-to-face) and blended learning. With distance learning, the educational process turns into *de facto* self-education. Students who do not possess a sufficient level of learning independence cannot engage in such a learning process without the involvement of parents, who act as "external motivators."

    B. *The problem of time.* In any of its forms (distance or blended), online learning significantly increases the teacher's working time as their day becomes even more irregular. The accustomed format of traditional teaching helps to save a lot of time due to frontal forms of work. By contrast, distance learning is organized based on an asynchronous model and requires individual work with each learner, even if the individualization is purely technical rather than substantive in nature.

    C. *The problem of practice orientation.* Given distance learning conditions, it is impossible to arrange either full-fledged work placements under intermediate VET programmes or demonstration exams. Work placement plays a special role in the sys-

tem of intermediate VET; it is a final, holistic stage of training which involves not only practicing professional skills but also participating in a real professional environment and being part of a work team.

The problems we have focused on will not solve themselves. On the contrary: if organizers and managers do not pay them close and scientifically supported attention, the problems will be felt more and more strongly, hindering the process of digital transformation of intermediate VET (even if this process is evolutionary in nature).

13. Work under conditions of limited face-to-face education allowed us to see where support for the development of intermediate VET is most needed.

    A. Intermediate VET teaching staff needs systematic scientific and methodological support of their teaching activities, especially in the area of blended learning technologies.

    B. Measures are needed to develop modern digital educational resources in order to provide online courses for Vocational Education programmes, possibly as part of the "Education" and "Digital Economy" federal projects.

    C. At the level of educational standards, the minimum amount of practical work (in particular, work placements) should be regulated in order to prevent the substitution of practical training with other forms. Of course, this measure will not solve the problems arising under strict quarantine measures, but it will force practice-oriented education institutions to comply more strictly with the requirements for the practical training of students.

    D. New standards for the remuneration of teaching staff in intermediate VET institutions should be developed, taking into account the new realities of teaching in a digital educational environment.

*Natalya Victorovna Lomovtseva*

# The impact of the COVID-19 pandemic on further learning in Vocational Education: analysis and best practices

The College of Electric Power and Mechanical Engineering (CEM) is part of the structure of the Institute of Engineering-Pedagogical Education of the Russian State Vocation Pedagogical University (RSVPU). The College carries out educational activities based on educational programmes of intermediate Vocational Education. Adapting to the new reality showed that bite-size learning can be called one of the most successful approaches to solve the problem of students' scattered attention. Virtual/augmented reality and immersive technologies have become a powerful and promising tool in education thanks to their unique technological characteristics that distinguish them from other IT applications. However, the forced transition to a distance mode of operation was a serious challenge for all participants in the educational process and was associated with great difficulties for the administration of the institutions and for teachers as well as for students.

During the pandemic, total digitalization was one of the most important topics throughout the world, and the most acute and important subtopic was the digitalization of the educational process. Unlike in higher education, a so-called electronic informational and educational environment (EIEE) is not a mandatory requirement in the intermediate Vocational Education system in Russia. Therefore, the complete and forced transition to a remote mode of operation was a serious challenge for all participants in the educational process and was associated with great difficulties for the administration of the institutions and for teachers as well as for students.

The College of Electric Power and Mechanical Engineering (CEM) is part of the structure of the Institute of Engineering-Pedagogical Education of the Russian State Vocation Pedagogical University (RSVPU). The College carries out educational activities based on educational programmes of intermediate Vocational Education.

In April and May 2020, the RSVPU conducted a survey of both students and teachers on the topic of "E-learning and Distance Educational Technologies (DET) Assessment by Students and Teachers."

In this survey conducted immediately after the start of the pandemic, 43 percent of students reported that the effectiveness of their educational process had decreased, 12 percent said it had increased, and 45 percent said it had not changed. When asked to "Specify your preferences for the mode of education," 49 percent of students expressed a preference for a combination of in-person and e-learning, 33 percent for traditional in-person education, and 18 percent for e-learning and DET only.

We also surveyed students about their opinions on the benefits of e-learning and DET. 65 percent said that with this type of training, "There is no need to spend time traveling to the place of study," 61 percent mentioned "Saving money on transportation expenses," 44 percent mentioned a "More flexible daily schedule," and 28 percent said they liked "The ability to perform other tasks while studying online." Teachers, on the other hand, noted the following advantages of switching to distance learning:

1. Complementing educational materials with interactive tools: 54.4 percent
2. Development of skills and knowledge in accordance with the latest modern technologies and standards: 48.9 percent
3. Update of educational materials: 42.2 percent
4. More flexible daily schedule: 32.2 percent
5. Convenience of monitoring the level of achievement through a system of tests and quizzes: 24.4 percent
6. Providing assistance for the in-depth study of issues of interest to students: 12.2 percent
7. More time for online professional development: 11.1 percent
8. Ability to make learning materials more accessible for students: 6.7 percent

The information systems that teachers used for e-learning and distance education varied and included MS Teams, Skype, the Mirapolis LMS, and Zoom.

As V. Grishin, Rector of the Plekhanov University of Economics, notes, "...If you don't have problems, you don't have remote learning" (Zernov et al. 2020). Our problems were solved in stages, since the problems themselves were multifaceted.

At RSVPU, all the problems related to the transition to distance education were systematized (Figure 1).

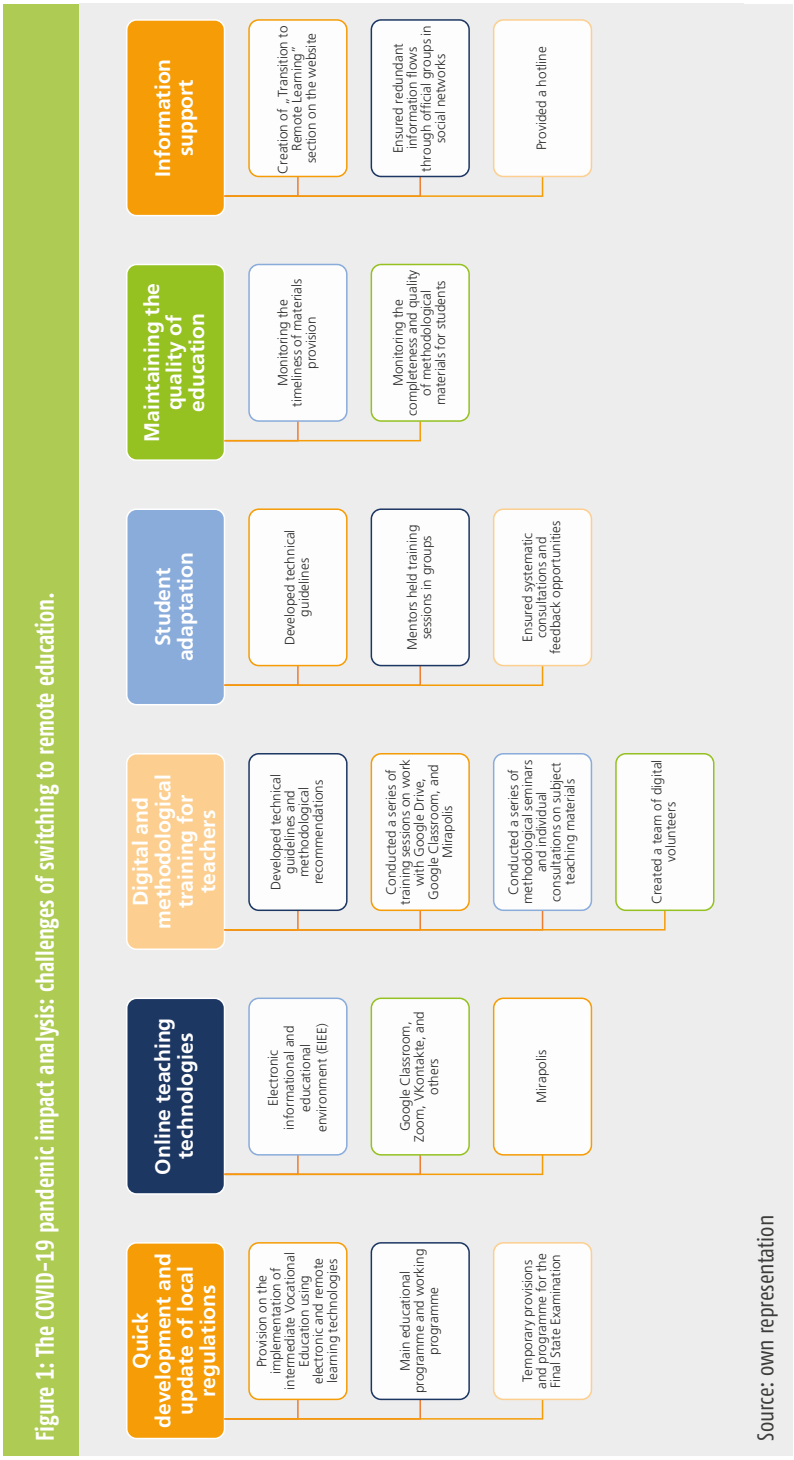


Figure 1: The COVID-19 pandemic impact analysis: challenges of switching to remote education.

Source: own representation

The first set of problems was organizational; it was necessary to quickly develop and update local regulations for the implementation of the educational process using e-learning and DET.

The second set of problems was methodological and tool-related. The university administration and the teachers held a series of joint methodological and informational seminars and trainings as well as intensive courses on conducting online classes. Also, technical and methodological recommendations for the use of DET were developed. A team of digital volunteers at RSVPU was trained to support the online classes. The digital volunteers assisted with simultaneous classes, helped teachers master digital tools, and facilitated the creation of electronic content. In addition, the students also needed to adapt. Now, they needed instant feedback from teachers on their assignments. A section called "Transition to distance education" was added to the website of the university. It included a hotline for both students and parents who were concerned about the implementation of the educational process.

The third block of problems was informational. The heads of structural units had to continuously monitor the timeliness, completeness, and quality of educational and information materials.

During the pandemic, the question of which principles and approaches are best applied to online education has become quite acute. SberUniversity's *EduTech* magazine lists the following approaches to engaging learners in the educational process, which in our opinion are also applicable to online education (SberUniversity 2020):

1. Personalized learning: learning designed around the interests, experiences, methods, and the learning speed most suitable to a particular learner
2. Problem-based learning: an approach that immerses students in a real situation even before they acquire knowledge about the object being studied. They need to analyze the problem, examine additional information, form a hypothesis, choose the best solution, and achieve a specific result
3. Learning through experience: a set of educational techniques that involve the participation of students in an activity and the acquisition of relevant experience, as well as the evaluation of this activity and acquired experience and the identification and acquisition of new knowledge and skills
4. Challenge-based learning: students are challenged to autonomously solve a real problem encountered by an existing company
5. Social learning: sharing information and experiences, collaboration between learners and external participants, and the joint creation of content within social networks

Of course, the pandemic has shown the need to use modern digital technology as part of the educational process. Currently, the most relevant technologies in online education are gam-

ification technologies, video content, technologies of virtual and augmented reality, digital twins (simulators), and smart assistants (chatbots).

Let us examine some of them. *Gamification* allows you to motivate and stimulate learning through game thinking and game techniques. Teaching material that incorporates gamification techniques should be clearly structured, lead to a positive attitude for the learner, and contribute to a competitive spirit. It spurs an individual to be a better learner, and at the same time it improves the team spirit.

It was recently, during the pandemic, that the availability of instructional videos increased significantly. According to researchers, the viewers' maximum level of concentration is in the first 5–8 minutes; thus, in order to maximize the acquisition of knowledge, the *video content* should be delivered to the learner in portions, and the learning results evaluated. Bite-size learning can be called one of the most successful approaches to solve the problem of students' scattered attention. For learning in "small chunks," modules of up to 15 minutes in length are created using a variety of tools (videos, blogs, and games) and tests. As a result, a person receives specific and targeted information, thereby significantly saving their own time. In addition, all modules can be studied repeatedly. When combined, they can be used to introduce broad topics and provide a more detailed view of the subject matter than traditional linear presentations.

*Virtual and augmented reality* and immersive technologies have become a powerful and promising tool in education because of their unique technological characteristics that distinguish them from other IT applications. Some experts talk of a radical change in the familiar world, a coming revolution that will affect learning as well (Kornilov 2019). In this process, one major challenge is changing educational technologies and creating promising integrated learning systems where the immersive approach, a set of progressive techniques implemented under fundamentally new conditions, will play a key role. It should be noted that most teachers are not ready to implement new methods and technologies, including innovative approaches such as the immersive approach.

*A digital twin* is a virtual computer model of a production line or another physical piece of equipment that displays the actual state and operational parameters of its twin. It includes the exact geometry of the equipment with the possibility of element-by-element study (three-dimensional atlas), as well as databases containing technical and operational documentation, equipment characteristics, and basic parameters. The digital twin enables an interaction with real equipment at all stages of its life cycle. At the manufacturing stage, the developed model will help in determining the required tolerances and manufacturing accuracy to maintain the performance characteristics and resilient operation of the equipment during its entire service life, as well as allow to quickly identify the causes of failures during the testing process. At the operation stage, the digital twin model can be refined and used to implement feedback, to diagnose and predict failures, to improve performance, as well as to recalibrate the machine, and identify new consumer needs and required upgrades (Expert 2021).

The pandemic has accelerated the transition to the new digital world. Technical, methodological, and psychological practices were also needed to regulate the relationship between the learner and the faculty.

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*Igor Sergeev*

# ▸ Career guidance in times of the pandemic

The challenge of the pandemic concerning career guidance turned out to be a serious problem since in recent years the emphasis has been on practice-oriented forms of work.

Under these conditions, each region and each organization independently built a strategy for transforming their career guidance work in the face of the pandemic. Only about one percent of those surveyed completely ceased career guidance activities. The pandemic did not so much exacerbate the problem of youth unemployment as it brought to light its specific characteristics.

The period of remote learning showed that the vast majority of young people is not ready for productive self-study in a digital educational environment. Neither schools and colleges, nor universities prepare students for continuous, effective online self-education, despite such readiness becoming one of the leading requirements of modern employers, especially in the cutting-edge technology sectors.

The digital transformation of education is one of the federal priorities of the Russian Federation. Its implementation in the system of Vocational Education is designed to provide effective training for the digital economy. The study of the process of digitalization of Secondary Vocational Education (SPE) and the identification of organizational and pedagogical conditions of its effectiveness are carried out on the basis of an interregional network of experimental sites – professional educational organizations which have been implementing online learning programmes for several years. The problems and limitations associated with the introduction of online teaching in the system of SPE, as well as possible solutions, are considered. It is shown that distance learning technology can be used in the implementation of SPE programmes only in force majeure circumstances (forced self-isolation under pandemic conditions) and is accompanied by a significant loss of quality of education and its practice-oriented nature. Forced self-isolation revealed the main problem of digital transformation of Vocational Education: the lack of general competence of teachers, students, and parents. The optimal form of introducing online courses into the SPE educational process is blended learning technology which combines online work with contact forms of learning. The key condition for the effectiveness of digital transformation of the educational process is teachers' mastering of a set of general competencies, including self-organization, remote management of motivation, and work with granular learning content.

## I. Changes in career guidance work with students

The pandemic situation required switching to a remote format of career guidance work with students in colleges, universities, and specialized career guidance centrer (both state and private). This challenge turned out to be a serious problem since in recent years the emphasis in the development of early career guidance in Russia has been on practice-oriented forms of work (vocational tryouts, enterprise visits, meetings with specialists, master classes, open days, etc.).

Under these conditions, each region and each organization independently built a strategy for transforming their career guidance work in the face of the pandemic. A typical example is the region Kemerovo Oblast which has a well-developed system of career guidance with a regional coordination and a methodological centre. In this region, a survey of specialists organizing and directly performing career guidance work with students was conducted during the pandemic; the question was: "What career guidance activities do you perform online?" The answers were distributed as follows: online career guidance counseling: 54 percent; virtual excursions: 45 percent; online vocational tryouts and master classes: 40 percent; distance learning (lessons) on career guidance: 37 percent; online marathon, open day, quest, seminar, quiz, etc.: less than 15 percent for each item. Only about one percent of those surveyed completely ceased career guidance activities because of the pandemic. At the same time, respondents noted that while online career guidance counseling and classes can, in general, achieve their goals (and can continue in this format after the pandemic), conducting vocational tryouts and master classes online significantly reduces their effectiveness.

Similar results were found for the Samara region. According to a survey of teachers responsible for career guidance at educational institutions, 30 percent transferred their work to a remote format quickly and without loss of quality; 42 percent organized the remote process of career guidance with some loss of quality and educational effectiveness; 21 percent of respondents reported great difficulties in transferring work to a remote format; and 7 percent could not move to a remote format and ceased their career guidance work during the period of restrictions. Assessing the results of career guidance work during the pandemic, 59 percent of respondents said they were able to adapt previously used forms of work to the remote format. 64 percent noted that they have mastered new forms of work (online vocational tryouts, etc.). In contrast, 36 percent "lost some of the effective forms" (meaning primarily events for career guidance networking which are popular in the region and are associated with the work of communication platforms providing "live communication" in the "student – parent – employer" triad).

As the analysis of specific practices shows, "online" vocational tryouts actually refer to blended vocational tryouts (the name is based on an analogy with blended learning). Blended schemes of vocational tryouts for students were conducted during the pandemic, for example, in Moscow ("Professional Environment" project) and Kazan ("Online Professional Tryouts of the Talent University" project). They used a single model:

- During the first stage, online lectures and/or master classes on the given type of professional activity or competence are held
- During the second stage, students receive instructions and conduct a vocational tryout on their own (offline), according to a given algorithm and making a video recording
- During the third stage, an expert evaluates the completed vocational tryout on the basis of the video posted online and provides recommendations for constructing the further route of professional self-orientation during the webinar

One might have expected that the pandemic period would prompt the development of full-fledged online trials, e.g. using virtual reality tools, at least for some professions and specialties, but this did not happen (such vocational VR tryouts are still exotic exceptions in Russia and exist only in some corporate models of early career guidance, for example, in JSC Russian Railways. But even in this case, they were developed before the pandemic).

Full-fledged online vocational tryouts were only developed for IT professions and competences as part of the federal early career guidance project for students in grades 6–11: "A Ticket to the Future." It included, for instance, performing programming or technical design tasks in specific online environments. Of the 103 professions and competences for which the "Ticket to the Future" vocational tryouts were developed, 19 included the option of online participation. The rest were conducted in person during the relaxation of anti-pandemic measures in the fall of 2020. In 2020, 166,000 students were enrolled in vocational tryouts as part of the "Ticket to the Future" project; this constituted 1.7 percent of students in grades 6-11.

Thus, the pandemic period had the following effects on changes in career guidance work with schoolchildren.

- Firstly, the availability of career guidance services has decreased slightly, but their quality has decreased markedly. As a consequence, the quality of professional self-orientation of first-year students who entered colleges and universities in 2020 has declined (along with a significant deterioration in their general education in a remote learning environment). Compared with previous years, the proportion of first-year students who chose a profession or subject under the influence of random circumstances and did not have a sufficient general education for mastering that profession or subject has increased markedly.
- Secondly, the pandemic period did not lead to the emergence of fundamentally new (digital) tools for organizing career guidance work. However, it has somewhat intensified the work that was already being carried out earlier in this direction (the development of tools and platforms for online career guidance diagnostics; online games for the early career guidance of students).

## II. The impact of the pandemic on the situation of the Russian youth in the labour market

In general, the pandemic led to a significant increase in unemployment in the Russian population. While the unemployment rate for people aged 15 and older hovered between 4.3 and 4.8 percent (of the total labour force) in 2019, it reached a value of 6.4 percent in August-September 2020 (the highest one for many years) before beginning to decline slightly. At the same time, according to the Russian Ministry of Labor and Social Protection, the number of Russians receiving unemployment benefits in 2020 increased fivefold compared to the previous year.

However, the general problems of the labour market in Russia during the pandemic do not affect young people more than other groups. The share of young people (15–29 years old) among the unemployed in the Russian Federation was 34 percent at the beginning of 2021; this is even slightly less than the share of young people among the working age population of Russia as a whole (35 percent). The pandemic did not so much exacerbate the problem of youth unemployment as it brought to light its specific characteristics.

- As a result of forced remote learning, the quality of the practical training of graduates of Vocational Education organizations, which was not always sufficient in the best of times, has decreased. This negatively affects the ability of graduates to work at a formally set level of qualification and contributes to them being forced into the shadow labour market (according to the Higher School of Economics, 28 percent of graduates at the intermediate VET level are employed in the shadow economy).
- The labour market in the Russian Federation does not meet the demands of the younger generation for flexible forms of employment (telecommuting, freelancing, flexible schedule, "gig economy", etc.), which was pointed out by Deputy Prime Minister Tatyana Golikova in her speech on 16 March 2021.
- Lastly, the period of remote learning showed that the vast majority of young people are not ready for productive self-study in the digital educational environment. Neither schools and colleges, nor universities prepare students for continuous effective online self-education (this is not provided for in any educational standard), despite such readiness becoming one of the leading requirements of modern employers, especially in the cutting-edge technology sectors. This is another challenge, a qualitatively new demand of the labour market to the education system: enable graduates to learn on their own in the digital educational environment and prepare them for continuous vocational online self-education. By not responding to this challenge, the education system aggravates the risks associated with a decrease in the competitiveness of young people in the labour market.

*Oksana Sidorenko*

# Digital competencies of educators. Before and after the pandemic: experience report from Chita Pedagogical College

The Chita Pedagogical College has focused early on the development of digital competences. At the core of all innovation are the digital didactics of Vocational Education. An educational communication network was established in order to create an environment which encourages teachers to enhance their digital competences. The transition to remote learning due to the COVID-19 pandemic went smoothly at the Chita Pedagogical College.

The development of digital competences has been one of the priorities of Chita Pedagogical College for many years. In September 2012, the college-based regional resource centre (RRC) "ICT in Education" was created as part of the regional programme of modernization of Vocational Education. The Centre has taken on the role of an aggregator and promoter of the digitalization of the educational process. The college staff had a high level of ICT competence and a willingness to work flexibly in a fast-changing environment.

Corporate training is gradually shifting from eliminating basic digital deficits to group training and meeting individual needs. The main issues concern the introduction of computer technology in the educational process.

The change is driven by the activities of the experimental site "Innovative model for the implementation of formal, non-formal, and informal education based on media didactics (in a regional resource centre)." The discussion on corporate training in teams is changing. The college teachers broadcast their own experience in advanced training courses for educators in the Zabaykalsky Krai and act as facilitators and experts.

The established educational communication network and the high level of digital competence of the teaching staff allowed the college to win a grant totaling RUB 42 million. It also enables the creation of new, innovative IT laboratories and simulation rooms for the "Teaching in primary classes," "Pre-school education," and "Physical education" disciplines. Currently, all college classrooms without exception are equipped with interactive white-

boards and projectors. The digital didactics of Vocational Education is at the core of all innovations, and almost all the teaching staff is involved in innovative activities.

This presents us with new challenges in improving teachers' digital competences. The teacher is immersed in a continuous process of renewal:

- Updating the content requires a mastery of the technology of creating and presenting multiformat electronic content
- In solving the above task, the teacher learns the basics of pedagogical design and content curation
- The organization of the educational process in a remote format during the pandemic allowed teachers to master the roles of the navigator of the online environment and the designer of the digital trajectory, both for groups and individual students
- A continuous analysis of educational activity makes current trends and requirements for the teacher the norm
- The role of the teacher changes from accompanying to environment-forming.

Improving digital competences no longer requires specially organized activities; the environment of the educational communication network itself does not allow the teacher to remain at a low level of digital competence development. All of the college's activities are permeated by digitalization. Thanks to this, the transition to 100 percent remote learning in March 2020 went fairly smoothly for the Chita Pedagogical College.

The emergency training was more about organizational issues and algorithms for living and working under new conditions: connecting to college resources via remote access (algorithms and video instructions, set-up of devices); designing new communication events and online meetings (seminars, professional development); multiformat electronic content, netiquette rules, maintaining eye contact (24/7 control and support), etc.

It was during this period (April 2020) that the Pedagogical College participated in the Day of Digital Technology Readiness of the Higher School of Economics' Education Innovation Lab. All teachers underwent online testing, and a digital profile of the organization was created based on the results. The team showed a high level of technological readiness for digital innovation (74 percent of technological optimists, 74 percent of pioneers, but also 12 percent of technological pessimists).

Both the current challenges and the outlook show that improving educators' digital competences will remain a priority for our College for years to come, given the volatility of the COVID-19 situation. And by solving these issues, we will be fully justified in saying that the digital didactics of Vocational Education has become a reality.

# South Africa

*Stephanie Allais*
Embedding skills policy in economic development policy: reflections on the COVID-19 skills strategy adopted in South Africa

*Carina Adam*
Effects of the COVID-19 pandemic on Vocational Education and Training. Best practice example: lecturer development project TRAINME

*Stephanie Allais*

# Embedding skills policy in economic development policy: reflections on the COVID-19 skills strategy adopted in South Africa

In South Africa, the COVID-19 pandemic induced ruptures aggravated the systemic problems of TVET and in particular that of work-based learning. National COVID-19 responses as outlined in the Economic Reconstruction and Recovery Plan (ERRP) provided an opportunity for shifting away from simple supply–demand dichotomies regarding skills. Rather than skills being instrumental to the demand of the economy, skills development is considered an integral and mutually beneficial part of economic development. Thus, the COVID-19 skills strategy advocates skills policies, planning and provision as embedded in economic development, to support economic growth and development interventions. The text highlights how the crisis-induced new approach may be transferred into mid-term strategic alignments and describes the core interventions.

The COVID-19 pandemic has affected how we live, how we think, and how we work. It has also affected the ways in which skills are produced. Here I am referring to skills in the broadest sense of knowledge and ability to work. In South Africa, COVID-19 hit the Technical and Vocational Education and Training (TVET) system hard. TVET colleges were badly affected by the lockdown, with few having the necessary facilities for online learning and few students having the prior educational background that makes this solution viable, never mind access to devices and data and a quiet place to participate in a class (Allais/Marock 2020).

Workplace experience and workplace-based training have been long-standing challenges for South Africa and in the current context have become even more difficult. In employer-based programmes, including apprenticeships, there was obviously no teaching and learning during the lockdown period. As the economy opened up, employers were reluctant to take on trainees because of the restrictions on the number of workers allowed in different work spaces. Another crucial factor affecting workplace-based training, work experience, and other vocational skills development programmes is funding. The skills levy which em-

ployers pay to the government was suspended for four months, making the funding of workplace experience programmes difficult.

But one thing has not changed: the hope that Vocational Education can fix the economy. In many countries we see an emphasis on Vocational Education as necessary to support economic recovery and individual livelihoods (World Bank 2020). Linked to this is a set of "rules and tools" which are supposed to facilitate better analysis of demand for skills and, therefore, better production of appropriate skills. In South Africa, since 1994, a range of policies, systems, and institutions have been created aimed at improving skills anticipation so as to ensure that skills "supply" is meeting demand in the economy. We have many years of attempting to analyse skills demand mainly through aggregation of employer-specified vacancies, which has its own specific problems. We have a strong emphasis on the production of lists of skills that are in demand or are scarce. And we have many structures and systems for formal engagement with stakeholders, including a National Human Resource Development Council, a National Skills Authority, Sectoral Education and Training Authorities, and a national forum for engagement between employers and unions, including on skills issues (Nedlac) (Allais 2013; Allais et al. 2017).

All of this has born little fruit. While there are improvements in pockets of the system, many systemic problems remain. Most worryingly, the idea that the skills system is not producing the skills required by the economy persists. Of course, our systems for determining what skills are in fact required by the economy are weak and very dependent on employers specifying current vacancies or gaps, which makes it a weak system for analysing future requirements as well as limited by employers' analyses.

I suggest that among the various problems with our skills system, the one problem which persists is a strong separation between thinking about "supply" through the skills system (including schools, universities, public TVET colleges, a range of private providers, and programmes to support training in workplaces) and thinking about "demand"in the economy. The COVID-19 skills strategy, a strategy born out of a crisis, provides some important insights in how to start shifting away from simplistic ideas of supply and demand.

The COVID-19 skills strategy aims to make sure that the Economic Reconstruction and Recovery Plan[1] (ERRP) is supported and that no aspect of it is compromised by skills shortages. The ERRP was passed by the South African Government in October last year. It is a short-term strategy designed to actively change the economy by focusing on aggressive infrastructure investment; employment-orientated strategic localization, reindustrialization, and export promotion; energy security; tourism recovery and growth; green economy interventions; mass public employment interventions; and strengthening food security. The COVID-19 skills strategy was designed to create a balance between the short- and long-term

1 See https://www.gov.za/sites/default/files/gcis_document/202010/south-african-economic-reconstruction-and-recovery-plan.pdf (Retrieved on 15.09.2021).

skills needs of the country and ensure that the skills system is strengthened with its implementation.

The policy offers some insights in how as educationalists we can start shifting away from simplistic ideas of supply and demand, and start seeing economic development and skills development as mutually embedded, as opposed to separate, processes.

The first point here is that the Economic Recovery and Reconstruction plan is specifically focused on creating demand – on structural economic change. To date, skills policy has often been seen as a policy to lead to economic growth or to catalyze economic growth. For the first time, with the COVID-19 skills strategy, we have an economic development policy that is explicitly aimed at generating economic growth and development, and the skills policy has been developed as part of this and in support of it. This alone is new in South Africa and worth noting. Whether or not the ERRP itself will be successfully implemented is a different question, but the point is worth highlighting because we will never build successful Vocational Education if we do not have policies for structural economic change.

The policy does not have an embedded consideration of skills. But when we at the Centre for Researching Education and Labour were asked to work on the skill strategy associated with the ERRP, we set ourselves the task of considering what could be done in the education and training system as part of this strategy to support it but also to use it to build the education and training system.

Therefore, the COVID-19 skills strategy consists of a set of core interventions as well as a set of systemic interventions, and they give some ideas of how we could think differently about skills supply and demand – to see skills policy, skills planning, and skills provision as embedded within economic development, instead of either as an add-on, or a catalyst to, or a prerequisite for economic development.

There are six interventions focused on the immediate provision of the skills required by the ERRP, or the skills which will be required if the interventions of the ERRP are successful.

The first one is access to targeted skills programmes. This does not sound new – the development and provision of short-term relevant training programmes is a long-standing policy goal. What is different here? The COVID-19 skills strategy proposes two specific short-term adjustments to quality assurance requirements for qualifications and programmes in targeted sectors as well as short-term adjustments to funding mechanisms to ensure funding is directed at immediate training needs (related to demand). The idea is that these models will only be implemented for required skills associated with specific ERRP sectors and interventions, where there is support from industry bodies or government departments, so the initial focus of this intervention is primarily on the digital space (and within this, those related to the global business service industry). These will not destabilize the quality assurance system but will ensure that there is faster responsiveness together with quality assurance in targeted sectors. If these alternative quality assurance approaches work, they could be scaled up in the medium to long term.

The second intervention is updating or amending small components of existing technical and Vocational Education programmes to demand in key sectors within the ERRP. Here we see an intervention focused on programmes that are currently being offered in the TVET colleges and in some targeted instances, universities, especially Universities of Technology and Comprehensive Universities, where they offer relevant certificates and diplomas that relate to sectors within the ERRP. The intention of the intervention is to ensure that the existing programmes that can be better aligned to stated priorities and are assisted in making required adaptations and to better ensure work readiness – e.g. the installation and maintenance of ventilators as part of a new and urgent short-term skill requirement within broader qualifications.

The third intervention supports access to workplace experience. It focuses on occupations in which sectors indicate that the reason for the skills mismatch is an absence of experience. The fourth intervention is retraining and up-skilling to preserve jobs. Again, this is not new, but in the COVID-19 skills strategy, it is built into the specific mechanisms of the ERRP. As part of the job summit held in 2019, the Temporary Employment Relief Scheme (TERS) was introduced. A new funding window was created through the Sectoral Education and Training Authorities to support retraining for workers who lost their jobs. An intervention of the COVID-19 strategy, therefore, builds on this to align skills training and efforts to grow firms and sectors.

The fifth intervention is increased access to programmes resulting in qualifications in priority sectors (increasing enrolments to meet medium-term skills needs). This intervention consists of directing short-term urgent funding towards increasing enrolment in specific qualifications and occupations in sectors and areas selected for intervention through the ERRP. The sixth intervention supports existing policies to import skills identified on the List of Critical Occupations.

Furthermore, there are four enabling interventions which aim to support the system as a whole to make the short-term interventions in ways that contribute to it, not compromise it, in the long term. Of these, the most important for the current analysis is the intervention eight, "Embedding skills planning into sectoral processes". The essence of the intervention is ongoing focused engagement to determine, on a regular basis, skills required for growth and recovery. This could be achieved thanks to Masterplan structures in the industries where they exist; where they do not exist, DHET and SETAs will engaged with industry to identify the most appropriate structure. These are the examples of looking at actual sectors, actual workplaces, and ensuring that policy is responsive, that skills needs are determined based on collective analysis over time by employers and educationalists, and that provision is jointly planned and implemented.

This is a moment for thinking about all the moving parts of the economy, and the institutional configurations and systems that shape skill formation as we move forward with a COVID-19 overlaid on a weak economy. We need to build and support institutions that are capable of meeting demand. This means institutions that can offer broad vocational quali-

fications that include components of general education and components of locally needed skills, shorter accredited programmes that are recognised by employers and professional associations, and less formal, responsive short courses. Building institutions that can offer this range of programmes in dynamic and meaningful partnerships with employers and communities which requires long-term funding and a focus on institution-building as opposed to regulating and quality assuring.

We need skills to be incorporated in the industrial policy process instead of them being considered as an add-on or something exogenous. One implication of this is the need for industry or sector specific, as opposed to general, strategies. In South Africa, for example, we have so many funding and incentive mechanisms, but they are blunt and one-size-fits-all not taking into account specific needs of different sectors and industries.

We need to think about the quality of work and organisation of workplaces as well as skills development in industrial policy and in different economic sectors' strategies.

Partnerships are critical, especially the role of employers, because skills are built and developed in the economy and society and not simply supplied exogenously to the economy or to the labour market by educational institutions.

This, in turn, requires a better balance between coordination and supporting a flourishing of provision as well as a more flexible system that also supports institution-building, and finally, more holistic TVET that focuses on occupational streams and clusters with strong qualifications that allow some local flexibility rather than only narrow job preparation while supporting companies in developing highly specific skills and *also* TVET institutions in offering short training programmes. This needs to be done in line with an economic recovery plan focused on jobs.

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*Carina Adam*

# Effects of the COVID-19 pandemic on Vocational Education and Training. A best practice example: lecturer development project TRAINME

Not only did COVID-19 have an impact on Vocational Training in the TVET colleges directly but also on continuous professional development of the lecturers. Classes had to be held online; distance learning and remote teaching were the buzzwords. An entirely new structure had to be designed, both for teaching and learning. TRAINME is a BMBF-funded project for further education of South African TVET lecturers that was hit by the pandemic in the middle of the programme. The project reacted to challenges with great flexibility and substituted large parts of the training with virtual offers.

## 1. Introduction: what is TRAINME?

TRAINME stands for "Modular Training and Further Education of South African TVET lecturers in Mechanical and Electrical Engineering". It is a joint project of the Inter-Company Training Centre in Eastern Bavaria (UEBZO) and the University of Stuttgart, funded by the German Federal Ministry of Education and Research (BMBF). The project was initially designed for a duration of 36 months (1/2018-12/2020) and was to cover two test runs of the developed modules and contents.

## 2. The TRAINME concept

In the first step, the University of Stuttgart identified and analysed the specific needs of lecturers at TVET colleges before the exact training content was defined in close cooperation with the South African Department of Higher Education and Training (DHET).

To ensure a smooth start of the training, the UEBZO invited training participants to a kick-off meeting to introduce the training concept, clarify any technical issues, and answer initial questions.

Since the participating lecturers came with different preconditions and a varying knowledge of the specified topics, a self-study phase guided by the TRAINME team of online coaches was set up before the first practical training.

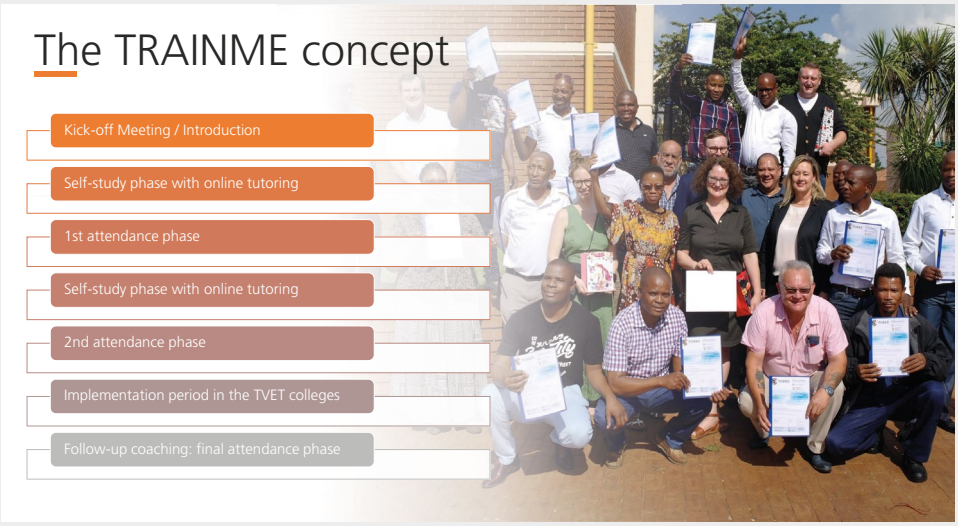
In the one-week attendance phase, the contents of the preceding self-study were reviewed and put into practice. Equipment was handed out, existing material was discussed, and pedagogical as well as practical lessons took place.

This practical training was followed by another self-learning phase, using a learning management system (LMS) with corresponding tasks and again with the participation of the TRAINME mentors.

A second attendance phase was carried out before introducing the newly gained knowledge at the lecturers' colleges.

A few weeks later, the participants met again for a follow-up coaching session where their experiences with implementation were discussed in order to close gaps. The entire training was then concluded with a graduation ceremony (figure 1).

**Figure 1: The TRAINME concept**




Source: UEBZO

## 3. Master Trainer approach

To ensure the sustainability of the training, the participants of this first cohort could apply to become Master Trainers, i.e. learning how to teach the TRAINME contents to their fellow lecturers. These Master Trainers should then function as multipliers at the college level and in regional support teams.

The plan was to offer them a course on Adult Education, involve them in the development of the training for the second cohort, and have them teach in the practical phases of the second cohort under the supervision of the TRAINME team.

## 4. Plan vs. reality

### Plan

The initial plan for 2020 was to carry out a workshop with the designated Master Trainers and prepare them for teaching the second cohort with an improved schedule and revised content. An extended kick-off week was planned for March 2020, followed by the usual self-study phase, two practical training weeks in May and June, an implementation phase at colleges, and the final follow-up coaching week in September. In this way, the entire course could have been handed over to the DHET in December, fully evaluated and transferable.

### Reality

The abovementioned workshop with the Master Trainers was supposed to take place exactly when the pandemic started to spread on different continents. Accordingly, the first steps were to cancel the Master Trainer workshop and the kick-off meeting for the second cohort. Although in the beginning we thought that we might just have to postpone the programme by a few weeks, it was foreseeable that the project would not be finished in time, so we requested an extension of six months from the funding organization. However, as agreed before, this extension had to be cost-neutral, so the project members decided to temporarily reduce their working time within TRAINME in order to save funds. In the remaining project phase, several adaptations and changes to the initial planning were made.

### Adaptations made to the initial planning

A new concept for the training of the second cohort had to be developed.
First of all, the Master Trainer workshop was redesigned into a blended learning format. The contents were made available online, and virtual classroom sessions were scheduled. This change of the plan brought up several challenges:

#### Participation and access

Not everybody interested in the programme could easily participate as some of the lecturers had only limited Internet access.

### Adjustments

The existing online contents (a classic "Train the Trainer" setting) had to be adjusted to the requirements of the South African setting and suitable media had to be selected. At the end, we mainly used WhatsApp, Zoom, MS Teams, and the ÜBZO Learning Management System. The newly emerged problems needed to be addressed first, so we added a module on remote teaching since this was the challenge our participants were most confronted with due to the pandemic and the resulting distance learning.

### Motivation

While initially participation and motivation were high, the level of enthusiasm sank as time passed by and the end of the new training arrangement due to the pandemic was still not in sight.

### Schedule

At the start of the COVID-19-pandemic, we were still hoping to carry out the second testing of our modules in September 2020 at the latest and finish it accordingly by Easter 2021. However, in September we could not travel or meet in a large group.

### Further adaptations and changes

Plan B was to start at a later date with a probably compacted schedule. All arrangements were made for a kick-off meeting with the second cohort in January 2021, but just a few days before it would have taken place, the COVID-19 situation worsened again and everything had to be cancelled.

The worst-case scenario would have been to annul the second testing, close the project, work with the data gathered so far, and offer flexible support to the lecturers.

As the South African lockdown level was reduced again a bit later, another start of the second trial was planned for May 2021. However, with the German travel restrictions still in place, it did not make sense to carry out the training in South Africa.

### Further adaptations and changes

In April 2020, only eight weeks before the end of the project, we asked for another three-month extension (until September 2021), which was granted. The current plan (as of July 2021)[1] is to meet with the Master Trainers in September and prepare them to teach the next cohort.

1 The text was written in July 2021. As the project planning is dynamic, please refer to the website for current updates: https://www.uebzo.de/forschung/trainme (Retrieved on 29.11.2021).

### In the meantime...

Although we were not able to travel and had to spend fewer hours on the project, TRAINME did not stand still. In the end, we even gained valuable time from the effects that the COVID-19 pandemic caused. This additional time was used to revise the teaching contents and the material. Since a good relationship with the first cohort participants had been established, the TRAINME team was asked for support with remote teaching, which we happily provided. The University of Stuttgart took the chance to collaborate with the Technical University of Munich (TUM) and their GIZ project VET College Leadership for Transformation. The TRAINME team had been asked to proofread the Trends Mapping Study on TVET by UNESCO–UNEVOC, which we also accepted. An interactive image brochure of the TRAINME programme was designed by the University of Stuttgart[2]. Another big task was to keep the designated Master Trainers up-to-date and, after some time, also back on track. Arrangements were made for a revised second trial, and a more compact schedule was put together. As was already mentioned, this face-to-face training session scheduled for January 2021 could not take place, so it was moved to an online setting on the UEBZO LMS that had to be continuously taken care of.

With the second extension and still slim chances of holding presence training, we started creating a study book and a teacher's manual for each TRAINME module to be handed out to the lecturers in September 2021 (see Figure 2 on page 125). With the help of this material, the Master Trainers should be equipped to teach the TRAINME contents on their own.

## 5. Lessons learnt, further challenges, and current status

### Trial and error

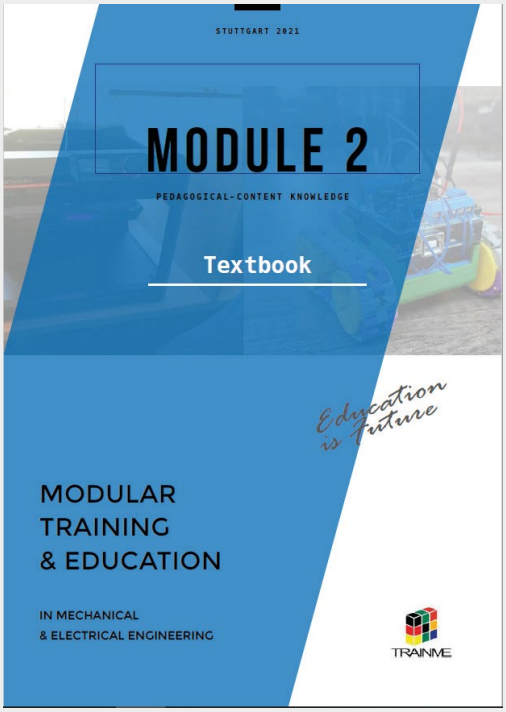
The first phase of our substitution strategy regarding the changes brought to learning by COVID-19 was marked by the trial and error principle. When it came to remote teaching, one simply had to test what worked and what did not. We had to find out the best time slots for online classes, the best provider of video conferencing solutions or virtual classrooms, the most suitable format for study material, the ideal duration of lessons, a good way to keep conversations alive, and the means to stay in touch.

### Technical issues

One of the biggest challenges was technical issues. As mentioned above, Internet access could not be taken for granted. Some participating TVET lecturers, or their students, did not have a computer but had to work using their smartphones. Accordingly, the format for provided information had to be chosen carefully with regard to its usability on a mobile phone.

2 See https://indd.adobe.com/view/19d26479-e832-4f44-8268-3170221fbea4 (Retrieved on 29.11.2021).

**Figure 2: A textbook to accompany the course**




Sources: pictures and graphs by TRAINME (UEBZO and University of Stuttgart)

## Personal contact

A very important issue was, and still is, the prior personal contact. We were lucky to know the designated Master Trainers personally as we met several times in 2019 and could establish a good relationship. This trustful basis made communication much easier lowering the inhibition threshold considerably. The participants knew that they could contact us any time without being afraid of asking silly questions.

In contrast to the lecturers of the 2019 cohort, the second group of participants had not met us before they were supposed to start the online seminar in preparation for the practical training phase. As a result, some of them lost their motivation quickly, stopped working on the tasks, and did not respond to any communication by email.

### Expectations

Another lesson we have learnt in the last year is not to expect too much from replacing practical training with online or blended learning. There are too many external influences that have to be considered and that are beyond our control. Even for those who were enthusiastic about participating in an online class, the possible learning contents are limited or are at least more difficult to handle than in a face-to-face seminar.

### Flexibility

Flexibility is another keyword in this context. You have to be able to react in a flexible way to whatever challenge. It is always useful to have a Plan B, Plan C, and to be spontaneous enough to handle unexpected situations.

### Motivation

Another big issue, especially when it comes to distance learning and teaching, is motivation. As mentioned earlier, it is rather challenging to keep your students/participants motivated and to encourage them to continue learning. This requires a lot of pedagogical knowledge, enthusiasm, and varying methods.

### Current status of the TRAINME project

We are currently working on a study book and a teaching guide for each TRAINME module. The designated Master Trainers are still in touch with the TRAINME team and are eager to start teaching the contents by the end of this year. We have planned a trip to South Africa in September 2021 to finally carry out the Master Trainer workshop, during which the procedure for teaching the second cohort of TVET lecturers will be discussed and determined. The corresponding kick-off meeting for this second group will take place right after the Master Trainer workshop and will be held by the Master Trainers under the guidance of the TRAINME team.

We are also planning a new set of modules with a focus on digitization for in-service TVET lecturers. The teaching mode of these new modules should again be a blended learning course with self-study phases and live practical training sessions. However, this time we work with a backup solution in case of further restrictions due to the COVID-19 pandemic.

# USA

*Robert B. Shepard, Li Zhao, and Randall Denison*

# Comparative discussion on apprenticeships before and during the COVID-19 pandemic

The COVID-19 pandemic has resulted in significantly increased U.S. Department of Labor (USDOL) communication with apprenticeship sponsors, educational entities, and wider stakeholder groups. Apprenticeship programs adapted quickly to the pandemic by using web-based tools to provide online-related instruction and distance learning, which has now greatly expanded in response to the COVID-19 pandemic. Throughout the pandemic, schools and training centres focused on the conditions at hand, how to open safely with new protocols, and how to comply with pandemic-related mandates. The situation remains fluid in the U.S. regarding ongoing fears of resurgence, new COVID-19 cases, and shifting protocols for education and training institutions in line with the state and local conditions and subsequent regulations.

In the past five years, the U.S. has undertaken a new effort to develop national occupational competency frameworks in conjunction with the Urban Institute, a nonprofit research organization. The U.S. has developed Competency-Based Occupational Frameworks for Registered Apprenticeships in approximately 30 occupations.

In regard to the effects of the COVID-19 pandemic on the U.S. apprenticeship workforce, we will discuss the current status and trends of apprenticeships in the U.S. and then bring in the context of the massive changes that we have been going through in the past few months with the significant disruptions to the economy that COVID-19 has caused. USDOL has remained fully operational during this time, committed to fulfilling critical workforce needs and addressing the workforce-related impacts of the COVID-19 public health emergency.

An integral part of our job at USDOL's Office of Apprenticeship is to promote Equal Opportunity in Employment and this is particularly needed to increase opportunities for women, minorities, and underserved populations in lucrative skilled apprenticeships, where the average wage at completion in the U.S. is approximately USD 70,000 per year.[1]

1 Registered Apprenticeship Partners Information Data System (RAPIDS), Fiscal Year 2020 data.

Please note that U.S. apprentices have historically been much older than apprentices in Germany, starting apprenticeships in their mid-20s. While competency-based apprenticeships and hybrid approaches are becoming more popular in the U.S. over the past few years, the traditional time-based apprenticeships in construction are typically four-year programs or longer. Our theoretical instruction component is typically about four hours per week, which is about one-third of the German school-based instruction for apprentices, who are largely teenagers.

Since approximately 2014, the rapid growth in U.S. apprenticeships have increased the availability of cost-effective and high quality learning opportunities to hundreds of thousands of workers. Before the COVID-19 pandemic hit the United States, a tight labor market along with new government initiatives not only increased the number of apprenticeships but also extended the range of apprenticeship training well beyond construction occupations:

- Since the start of 2017, there have been more than 740,000 new registered apprentices and there are now more than 24,000 Registered Apprenticeship Programs across the nation.
- As of early 2020, more than 600,000 civilian and military workers were learning an occupation through registered apprenticeships, up from only 410,000 in 2014. Although the percentage of the population engaged in apprenticeship in the U.S. remains well behind Germany, the recent increases have raised hopes for a robust U.S. apprenticeship system. The House passed, with strong bipartisan support, the National Apprenticeship Act of 2021. With Senate approval pending, this would be the first reauthorization of the National Apprenticeship Act of 1937.
- The gains for the apprenticeship system are particularly notable for non-construction industries. Using data from the RAPIDS system that includes most states, we find non-construction industries have accounted for a rising share of new apprentices, increasing from 26 percent in 1999 to 41 percent in 2019.[2]
- During 2020 and 2021, USDOL's Office of Apprenticeship has and continues to make strategic investments to support the expansion of apprenticeships, strengthen the capacity of states and territories, create opportunities for youth to access pre-apprenticeships and apprenticeships alike, and diversify apprenticeships in industries.

## Apprenticeship trends in the U.S. since the COVID-19 pandemic

USDOL's Office of Apprenticeship has been fully operational and staff have been mostly teleworking since the COVID-19 pandemic started. The COVID-19 pandemic has resulted in sig-

2 RAPIDS and historical Office of Apprenticeship USDOL database files from federally supported U.S. states, 1999 through 2019.

nificantly increased communication with our apprenticeship sponsors, businesses, industry associations, labor unions, training centers, intermediaries, colleges, and schools. Through virtual methods, there has been much collaboration taking place with our sponsors and partners as we supported the apprenticeship system and determined how best to navigate through the COVID-19 pandemic and its challenges.

From the U.S. experience:

1. Employers largely held onto their current apprentices, although that trend ranged from difficult to impossible for some industries like hotel and restaurants. The restaurant industry, for example, saw a 25–30 percent drop in number of registered apprentices in the first six months of 2020.[3]
2. Many apprenticeship programs adapted quickly and figured out how to use web-based tools and provide online-related instruction, to the extent feasible. Schools and training centers spent a significant amount of time evaluating to what degree that they were able to open safely with new protocols and to comply with pandemic-related mandates. To support this trend, the Office of Apprenticeship issued Circular 2021-01 ("Flexibilities Available for the Delivery of On-the-Job Learning and Related Instruction by Registered Apprenticeship Programs") on 16 December 2020. In adapting to the current public health emergency, this guidance document encouraged registered apprenticeship program sponsors to consider the feasibility of utilizing electronic media as a vehicle for delivering safe, high quality related instruction (as well as the use of such media in connection with the delivery of on-the-job learning and in the assessment and evaluation of apprentice competencies, when and where practicable).
3. Many programs opted for online-related theoretical/technical instruction. Most employers, training centers, and schools adopted online strategies to the extent possible. This entailed more online learning for apprenticeships, increased blended learning with smaller class sizes and new safety protocols for in-person instruction. Those students and apprentices with little or no access to technology or the Internet were the most negatively affected.
4. Government agencies provided leeway and flexibility to businesses and educators collectively to keep apprentices attached to their programs. Many states and localities provided wider access to technology to assist those with limited or no access to technology or the Internet.

3 National Restaurant Association Education Foundation apprenticeship data 2020–2021. Note that as of this writing in 2021, the industry has rebounded and picked up much of those losses in apprenticeships from the initial drop in 2020.

U.S. apprenticeship data (for states managed by the Federal Government) show that the total number of apprentices remained flat-lined from our fiscal year-end numbers of 2019 (30 September 2019) to our mid-fiscal year numbers of 2020 (30 June 2020), which largely means that our active apprentice numbers were very similar to where they were nine months prior. New apprenticeship registrations, however, remained a fraction of what they were in the prior year. Apprenticeship training starts are largely dependent on economic conditions, which changed significantly during the COVID-19 pandemic.

We interpret the flat-line total number of apprentices experience during the early phases of the COVID-19 pandemic in the U.S. with two major assumptions:

1. U.S. employers tried their best to hold onto their apprentices, despite massive unemployment, the likes of which we have barely seen prior to COVID-19.
2. There were fewer U.S. employers willing to onboard new apprentices during these uncertain times, except for apprentices in critical industries.

These assumptions are consistent with our experience from the 2008-2010 economic downturn and how it affected apprenticeships actions in the U.S. Registration data trends during the initial COVID-19 job market disruption indicate that while new registrations slowed down, apprentice cancellations also declined. We interpret this to say that during major economic downturns employers generally try to keep their skilled workers in training, and the apprentices remain because they have fewer options for better jobs. Even during the period 2008-2010, cancellations declined, implying apprenticeship sponsors generally retained their apprentices. In stark contrast, new hires fell dramatically between 2008 and 2010.[4] The situation remains rather fluid in the U.S., with continuing fears of resurgence, new COVID-19 cases, and shifting our protocols for education and training in line with the state and local conditions. This is best reflected in the many changes that educational institutions face as they prepare and gear up with the necessary protocols for the start of the new school year.

## Increased use of distance learning during the COVID-19 pandemic

Distance learning greatly expanded in response to the COVID-19 pandemic. As noted above, the Office of Apprenticeship issued Circular 2021-01 in December 2020, which reminded program sponsors that, under § 29.5(b)(4) of the Department's regulations, the use of distance learning for theoretical instruction in apprenticeship was permissible. Specifically, Circular 2021-01 highlighted the language contained in the foregoing regulation that "instruction in technical subjects may be accomplished through media such as classroom, occupational or industry courses, electronic media, or other instruction approved by the Registration Agency." The Department encouraged program sponsors to consider the use of

4 RAPIDS Office of Apprenticeship USDOL database files from federally supported U.S. states, 2008 through 2010.

such electronic media as a vehicle for delivering related instruction and on-the-job learning (when and where feasible) in light of the current COVID-19 pandemic.

Many of our registered apprenticeship sponsors quickly pivoted towards online-related instruction where that was possible. Subsequently, there have been studies published to assist those sponsors and programs better prepare for distance learning, such as CPWR – The Center for Construction Research and Training's *The Use of Distance Learning in Occupational Health and Safety Training: Assessing Effectiveness and Sustainability in the Context of the COVID-19 Pandemic.*[5] The CPWR study compared safety training delivered in a face-to-face versus synchronous online format, measured the effectiveness of newly developed online COVID-19 trainings, and shared best practices and lessons learned for occupational health and safety training delivered in distance learning format.

USDOL remains adaptable to ever-changing situations with the COVID-19 pandemic. We have increased the use of our website – www.apprenticeship.gov – to provide as much information as possible for our program sponsors, apprentices, and partner organizations throughout the country.

Thank you for the opportunity to contribute to this valuable bilateral discussion and shareing of experiences between Germany and the United States on apprenticeship and the COVID-19 pandemic.

5 PWR – The Center for Construction Research and Training, The Use of Distance Learning in Occupational Health and Safety Training: Assessing Effectiveness and Sustainability in the Context of the COVID-19 Pandemic, January 2021.

*Miriam Farnbauer and Diana Elliott*

# The impact of the COVID-19 pandemic on VET in the U.S.

In spite of the crises, apprenticeship models continue to develop, especially in the sector of information technology and communication. Cooperation between employers and community colleges remains a challenge for small and medium-sized businesses. Apprentices also need tutoring and coaching in person in order to encourage and increase the finishing figures of the apprenticeship programms. Miriam Farnbauer and Dr. Diana Elliott reflect with GOVET team spokesperson, Dr. Hannelore Kress on these and other aspects in an interview.

The Urban Institute is based in Washington DC, USA. It employs a staff of more than 550, including social scientists, economists, communicators, mathematicians, demographers, and data scientists. For 50 years, the Institute has been developing evidence-based insights on socioeconomic fields and has published policy and strategic papers.

One focus is also the monitoring and implementation of different apprenticeship models. In their understanding "Rigorous apprenticeships" – the ones that combine structured work-based training, jobs with wages and contributions to production, and related classroom instruction – cost-effectively prepare workers for rewarding careers and upgrading jobs. With funding from the U.S. Department of Labor's Office of Apprenticeship, the Urban Institute is building national frameworks for registered apprenticeships in a wide array of occupations. The frameworks are consensus based, meaning they are drafted in cooperation with employers, educators, and other workforce and training experts. The goal is to broaden the country's number and scope of registered apprenticeships. The DIAG USA Foundation is a training provider and intermediary. The organisation joined the new Interagency Advisory Committee on Apprenticeship and its sub-committees to provide guidance based on the successful German Dual Education System.

Employers and others can use the frameworks to fast-track the development of their own registered apprenticeships, with assurance that they are well researched and consistent across national programmes. The frameworks are competency based rather than time based, meaning that "*abilities*" are emphasized over memorized knowledge and skills and are more important than the number of hours spent working on tasks. The fields are already

developed include mechatronics, electrical infrastructure and maintenance, insurance, registered nurses, cooks, database tech/cloud administrators, generalists in IT, and a broad field in transportation services and maintenance.

GOVET team spokesperson, Dr. Hannelore Kress, spoke with Miriam Farnbauer, Project Director of the California based DIAG USA Foundation[1] and Dr. Diana Elliott, a principal research associate in the Center on Labor, Human Services, and Population at the Urban Institute.

**Dr. Hannelore Kress (GOVET)**: How is COVID-19 affecting educational systems and Vocational Education in the USA?

**Miriam Farnbauer (DIAG USA Foundation)**: In general, the COVID-19 pandemic's effect on the national economy resulted in a twelve percent decline in the number of new apprentices in the fiscal year 2020 compared to the fiscal year 2019. However, even though there is a decline, it is to mention that the numbers of 2020 are the third highest ever for registered apprenticeship programmes. Therefore, even though there was a decline, at least for the State of California, we had a rise in active programmes. And that shows to me that we might not have hired as many apprentices as before, but employers, educational institutions, and intermediaries are very interested in building these programmes because everyone sees their benefits. In fact, we had a rise of eight percent of new active programmes from 2019 to 2020. I find that very remarkable given that we had an economic downturn.

**Dr. Diana Elliott (Center on Labor, Human Services, and Population at the Urban Institute)**: Apprenticeships in the U.S. are a very small component of the labour force. They are a quarter of a percentage point to maybe a third. Most of our apprenticeships here in the U.S. are still in the fields of construction and the trades. An uptake of programmes outside these areas is still very rare. Nevertheless, there has been a steady rise over time. What I have observed as well, and this is anecdotal, with the programmes I work in, is that because this pandemic was really about a transition to virtual environments, tech apprenticeships did not necessarily slow down as much as other areas. There was actually an increased need we were hearing from clients in cyber security because so much moved to that sphere. There was a rise in tech apprenticeships and a decline in manufacturing, like the traditional trade apprenticeships. A lot of manufacturing slowed down because of the impersonal nature of work, but a lot of the tech employers, the IT employers we work with, were able to transition to 100 percent virtual. We still had some tech employers who had higher increases in apprentices, and this was sort of a company-wide decision.

**Miriam Farnbauer**: Regarding the best practices, when it comes to IT, it was a fairly easy transition. Our employers returned to digital formats like webinars, e-learning, and other

1 See www.diagusa.org (Retrieved on 07.12.2021).

video conferencing tools. However, if I talk to either the supervisors or even the CEOs who hire these apprentices, they say, "we cannot keep it that way only." Because soft skills are something that is never really been taught over a digital format, and it is a hands-on component which is so important to the apprenticeships, and that rather gets lost. If we look at software developers, they can do their task on their laptops at home. Nevertheless, it is as good, or necessary, to have this one-on-one component in between. I do not think they will fully go back to in-company training, but they will try not to only be digital. Now when we talk about a maintenance technician, for example – a different sector where there was a decline in the number of apprentices – they had a hard time adjusting. In one of our programmes, we gave students those virtual reality glasses and they were able to see what the technician, the instructor, who was at the college by himself, was doing below the car's hood. Like this, we tried to make it as hands-on as possible. When I talk to our apprentices, they tell me it is great what we can do with technology but if they do not touch the tools and cars, it is just not the same. And let's keep in mind that to stay focused for like four hours straight on a screen is really difficult. We divided our cohorts, mostly up to ten people or less and then had them rotate. One day cohort one is at home and looks through the virtual reality glasses, and then the second day they go into the classroom or to the employer.

**Dr. Diana Elliott**: I see too, that at least in the U.S., people who are drawn to apprenticeships are hands-on learners. So this virtual environment did pose a real challenge. Now again, in IT that is a bit easier because people are coding, often in teams, which can be done virtually. But regarding Miriam's point, when you need to have your hands on something, it becomes much more of a challenge. In addition, some of the things that we heard from some of the intermediaries that we work with was that mentoring and coaching became a challenge. Again, that built up to what Miriam was saying, you could not just mentor and coach online. There needed to be some in-person component. And a lot of that includes simply building up personal connection, keeping the apprentice feeling like there is somebody who is helping them, who is there with them. Because we have many people who start apprenticeships in the U.S., but we do not have as many completers. Mentoring and coaching are really important to keep them engaged. About 221,000 people have entered registered apprenticeships in the financial year 2020. There were overall 636,000 students across all programmes, not just people who started. Only 82,000 graduated from programmes in the financial year 2020. That is a big difference considering that most of our apprenticeships are fairly short. They are one to three years long. With the trades maybe being a little bit longer. But yes, there is a high dropout rate. There is a really big focus on starts of apprenticeships and not as much of a focus on completion and successful completion. And it is something that some of us, who think and work on this, have been worrying about. But again, because the U.S. system is just so focused on boosting those numbers, we have not been able to really think about what does it take to have a high quality, successful programme where people complete.

One of the challenges during COVID-19 is that people had childcare issues, and may have had transportation issues. If their family was running into financial difficulties, the apprentice cannot necessarily pay very much at the start. Therefore, I think there were many pandemic considerations that were operating as well in the background. Now that said, we work with some intermediaries that work hard to keep the apprentices in the programmes, but I do not know if that is everyone. Once employers realise what an important solution it is for their workforce issues, they basically stick with it. Nevertheless, it is getting over that hurdle of getting them to try it that is the challenge. Now that said, they are not always willing to invest in it in the ways that they should. We work with intermediaries, and they are constantly trying to find money to offset the training, or the childcare, or ways to support the apprentices. It still is surprising to me that the employers are not willing to invest more training dollars in doing that. They want essentially people trained for free. They want to put very little money into it. However, a few employers are willing to invest in it. We work with Google, Microsoft, and Cognizant, who are these big named organisations and who understand. You know, their apprentices are a small fraction of their workforce, but they understand that they need to spend some money training them; they need to spend money on mentoring them. But it is harder for small and mid-level organisations to kind of understand that.

**Dr. Hannelore Kress**: When you say intermediaries, are these training providers or colleges? Who is the intermediary?

**Dr. Diana Elliott**: Sometimes they are organisations like DIAG, who are working to help employers getting started, help employers figure out how to register or how to move forward with the programme. Other times, they are training providers, so they seek to make some money from the training they offer. They are not necessarily community colleges. We have worked very rarely with community colleges; they do not always see the value of starting an apprenticeship programme. It is often this real barrier in the U.S. to getting community colleges to see that their purpose can be getting a student into a successful occupation and career, rather than just educating them for a degree.

**Dr. Hannelore Kress**: And when you reflect on the dynamics of the pandemic's effects on the U.S. educational system starting from March 2020 up until now, what effects do you see?

**Dr. Diana Elliott**: Well, there was a lot of drop-off in students, not just in apprenticeships, but students overall. And community colleges are often the first to feel those effects because their students have lower income; they are often first-generation students. Therefore, I wish that were a motivation for community colleges to get more interested in doing apprenticeships because their students often need to work at the same time that they are in school. It would be a real asset to everyone to have them engaged in work while they are in school. But it has been frustrating, honestly, having conversations with community colleges. Some of them are

terrific and they really understand it, but others do not understand that they need to be talking to employers or they need to be helping their students get into a job and a career.

**Miriam Farnbauer**: What the government did was to issue USD 3.8 billion in grant funding for expanding apprenticeships over the next five years. That is not referring to general student numbers, but this is something where I am thinking the government tries to help colleges, intermediaries, and employers to get started again or to continue working on this and expand programmes, and help with transportation money and childcare money. That was the National Apprentice Act of 2020. And that is double of the current grant funding. There is a lot of money that is being invested from the government to get those programmes expanded.

**Dr. Diana Elliott**: About half of the states in the U.S. are part of the national system. The other half, each of them, has their own state systems and do not participate in the national system. There are states that really do a great job. South Carolina has had a reputation for a decade or more of being very good at this. They have this initiative called "Apprenticeship Carolina", they know how to talk to employers, they have community colleges and technical schools who are really engaged in this and are doing a terrific job. California had set a high bar for the number of apprenticeships that they are going to achieve in the next ten years. That came all the way from the top, from the governor.

**Miriam Farnbauer**: Yes. We even had during COVID-19 a rise of 20 percent of apprentices, right now we have 96,000, and the goal is 500,000 by 2029. It is quite a goal, but the governor initiated this Interagency Advisory Committee on new Apprenticeships (IACA). This committee works on solutions on how we can expand apprenticeships and how the government can help schools and employers alike. For example, we create minimum industry training criteria so that companies have something to orient themselves on. So yes, California is definitely one of the states that really wants to expand the apprenticeships.

**Dr. Hannelore Kress**: Diana, you mentioned the vulnerable groups that were affected by COVID-19, do you see others? Do you see any effect on educators as well, and trainers?

**Dr. Diana Elliott**: Yes, I think the vulnerable groups are the groups that are always vulnerable in the U.S. They and their communities were the ones who were the hardest hit. People of Colour, higher poverty areas. I think one of the other dynamics that we confront here in the U.S. is the rural and urban divide. We have many people living in rural areas who do not have training or employment opportunities nearby. Actually, having a switch to virtual formats has been advantageous in some regards. Similarly, people with disabilities; they might have trouble with getting to a workplace, depending on the nature of their disability. Or people who are neuroatypical may have problems with working in an office environment, and having a switch to more virtual opportunities, at least in IT, has been helpful. Some people do not necessarily want to swing back to all in person. I think the hybrid approach is what many

people see as being the future. I think for connecting at least those groups who typically have not had as many opportunities, it has been really advantageous.

**Dr. Hannelore Kress**: That is a very interesting point. Are there plans to roll that experience out to others, so more people also see these advantages? Especially, you mentioned the rural–urban divide.

**Dr. Diana Elliott**: Yes. At least in the Department of Labour, they have been thinking more about what can we do to better connect these communities to the training opportunities. Even before the pandemic, they were trying to think about what virtual environments or virtual learning we could implement to make sure that we connect rural populations. One of the challenges with rural populations is that if you do not have a job, you do not necessarily have money to buy a car, which you need to get to the training opportunity. One youth programme in Indiana that I have had conversations with, the first thing that they have there, they figure out school bus transportation, and it is sort of a complicated network to get students to their opportunities. As soon as students have enough money, they help them buy a car. It is just so important in the U.S., in those rural communities, for people to be able to have transportation. And our public transportation system is just not there.

**Dr. Hannelore Kress**: And we found in many countries that in regard to teachers and trainers, also in Germany, their media or ICT competences were not sufficient to implement instantaneously didactic innovation with a pandemic hitting the system unpredictably.

**Dr. Diana Elliott**: One of the things that we hear in our conversations is that the training provided, for example, at community colleges is not cutting edge. I think, Miriam, we had this conversation in terms of mechatronics. There has to be a lot of training for the trainers in these different facilities. I certainly hear that in IT, much of what is taught in the classrooms is actually out of date. I work with people who have several training organisations whose instructors are people working by day and teaching in their off hours and who are basically able to teach the apprentices the cutting-edge information that they need. In this way, the apprentices are often coming out with better experiences than people coming out with degrees from community or even four-year computer sciences programmes.

**Miriam Farnbauer**: Which goes back to the perception that has to shift. It has to be communicated that there is this big divide between an outdated curriculum and the "you have to go to college" thinking.

**Dr. Diana Elliott**: That is exactly right. We hear this a lot; employers and their HR departments and IT are still focused on hiring people with computer sciences degrees when in fact what we have heard from people who have apprenticeship programmes is that those four-year computer science degrees still need to spend the first six months learning what to do

in the actual workplace. I think more and more people in IT are starting to have their eyes open to the fact that you can teach this on the job and not necessarily need somebody with a four-year degree.

I will say the other best practices/lessons learned is that we still need a way to better assess quality of programmes in this country. We do not necessarily measure quality, nor do we insist on quality or a standard of quality across programmes. You can have some apprentices going through one programme and not necessarily being trained as well as a competing programme in the same city even. And the focus in the U.S. at the Department of Labour has been on increasing the numbers of apprentices, which I think is the right phase to be in. You need to make it more of a presence in the United States, but we are going to start transitioning to the point where we need to start thinking about quality, too.

One of our intermediaries is working with IBM. They are training mainframe technicians.[2] Everyone thinks that mainframes do not exist anymore, that they are those large computer rooms of the 60s, but many of our financial transactions still run on mainframes at banks. Also the government systems. Some of the unemployment insurance hiccups that we had here in the U.S. were because States did not have people to accommodate the mainframes when they had all of these requests for it. They have seen that nobody is teaching these qualifications in the colleges anymore. Their apprenticeship programme has really taken off in the last couple of years. They have all these terrific success stories of people who were laid off during the pandemic. There was the story of one person who was working at a sandwich chain here in the U.S., who had all of the capabilities to do this work but was stuck in this job and later got laid off in the pandemic. The person found this apprenticeship programme and is now making double what he was making before in less than a year's time. So I think the pandemic also presented a lot of opportunities to kind of expand some of this work as well.

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2 A mainframe is the central data repository, or hub, in a corporation's data processing center, linked to users through less powerful devices such as workstations or terminals. The presence of a mainframe often implies a centralized form of computing as opposed to a distributed form of computing. Centralizing the data in a single mainframe repository saves customers from having to manage updates to more than one copy of their business data, which increases the likelihood that the data is current. See http://www.ibm.com (Retrieved on 07.12.2021).

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# Abstract

In a series of virtual bilateral workshops held from February to April 2021, the German Federal Ministry of Education and Research (BMBF) and their partner ministries in seven countries – Costa Rica, Ghana, Israel, Italy, Russia, South Africa, and USA – discussed the effects of the COVID-19 pandemic on Vocational Education and Training (VET), employment, and youth. GOVET (German Office for International Cooperation in VET) asked policy makers, researchers, and practitioners to share their experiences, first lessons learned, best practices, and response strategies. This publication documents the outcomes. The contributions range from hands-on practical reports to in-depth VET research findings, from rather analytical perspectives to policy consultancy and strategic ideas.

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