

# Building Workforce Resilience in Disruptive Times



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Distinguished Colleagues, thank you for the invitation to the 6<sup>th</sup> International Conference on TVET in the Caribbean. My topic today is 'Building workforce resilience in disruptive times', a presentation I have prepared jointly with my colleague Robert Okinda.

This topic is of relevance not just here in the Caribbean but across the 56 member states of the Commonwealth that my organization the Commonwealth of Learning serves.

As you are aware, COL headquarters are in Metro Vancouver with a regional office in New Delhi. Our mission is to help Commonwealth member states and institutions to use distance learning and technologies for expanding access to education and training.

In this presentation, I will first look at the three major disruptions of our times and how these are changing the ways in which we work. I will then focus on how COL is addressing the issue of skilling and reskilling the workforce for resilience. This will lead to a reflection on how we can better prepare our learners for the jobs that do not yet exist.

We live in a disruptive age, where change is happening faster than ever before and in more unpredictable ways than we can imagine.

Three years ago, no one could have predicted the pandemic or foreseen its magnitude. Developments in technology are changing the ways in which we teach and learn and the ways in which we work. We are encountering the increasing impact of the climate crisis in our daily lives.

First, Covid-19 has caused the biggest disruption of education in human history where over 95% students worldwide were impacted. As per an ILO-UNESCO survey, 90% of the respondents from 63 countries reported complete closure of TVET schools and centres. Another report by Victoria Levin et al indicates that TVET students in Kenya and Ghana come from lower socio-economic backgrounds as compared to their peers in general education and struggle more than them.

The pandemic has deepened the existing learning crisis. A study in the Netherlands, records a learning loss of about 3 percentile points with higher losses among students from less-educated homes. How can we address the issue of growing inequality that is manifested in learning loss?

The second major disruption is the phenomenal growth in technologies. The Educause Horizon report sums up the findings of a survey where the results were not surprising with AI topping the list followed by blended course models, learning analytics, and micro credentials. AI is being mainstreamed in education. Intelligent Tutoring Systems use AI techniques to simulate one-to-one human tutoring, providing timely feedback. A popular example of AI in education is a Virtual Teaching Assistant that can offer personalized assistance to learners.

AI is being used for education but nothing can match the explosive interest that Chat GPT has aroused. This Generative Pretrained Transformer is trained on massive quantities of data to generate human-like text. It can generate content, courses, quizzes, video lectures within seconds. How can we seize the opportunities that this development offers and minimize the risks for our students? Print-based content can be uploaded to the AI platform which generates bite sized microlearning packages. There are any number of examples available.

This three dimensional image from aeronautics shows the cross section of a jet engine and demonstrates the possibilities for TVET teaching and learning. How can we use the technology to offer more simulations virtual and augmented reality for our students?

This would depend on access to devices and connectivity. Within the four regions of the Commonwealth, the Caribbean is the most highly connected. The number of internet users in A&B compares well with the global north and the Bahamas and Barbados are not far behind.

The use of mobile devices is even higher—with A&B leading the region followed by T&T and St Kitts and Nevis. While these are excellent foundations for using online and blended learning—how can we ensure that no one is left behind in remote and rural areas?

The third major disruption that we are witnessing is climate change. The climate crisis is one of the defining issues of our times, especially for the Commonwealth, with a disproportionate impact on its 32 small states. Hurricane Dorian destroyed 90% of the infrastructure in The Bahamas. We also know the devastation suffered by A&B, Barbados Dominica and SVG

How does the climate crisis effect the education sector? Climate-related natural disasters have major, detrimental impacts on education. Entire schools can be destroyed or irreparably damaged, leading to thousands of displaced students, unable to continue their education. Books, resources, critical data and student records may be wiped out entirely, leading to the collapse of entire systems.

How can we turn these challenges into opportunities? The world is learning to keep up with the phenomenal developments in technology. The jobs that exist today were unheard of ten years ago and the jobs of the future will need to be aligned to the green and blue economies. By 2025, 85 million jobs may be displaced but 97 million more jobs may emerge.

In these times of disruption, we need to look for alternative approaches to build a resilient workforce that is skilled and reskilled to respond to the evolving job market and national development.

The pandemic has resulted in higher levels of youth unemployment globally with the unemployment figures at nearly 21% in the Caribbean. How can our institutions respond?

The Caribbean is also dealing with the issue of migration where the skilled workforce is leaving for greener pastures resulting in brain drain. The silver lining however is that financial remittances contribute to the economies of the home countries both here and in the Pacific, which is facing a similar challenge.

Let me share some examples of how COL has supported Member States to address the challenges of skilling and reskilling the work force in these disruptive times.

COL's approach has been to leverage partnerships, use appropriate technologies to reach the unreached, provide free curated content that can be used readily and train teachers and instructors to adopt new methods and tools. COL also develops models which can be replicated in different contexts to achieve both scale and sustainability.

Since the pandemic, the COL-COURSERA workforce recovery project and partnerships with Google and Udemy, offered free skilling and reskilling opportunities to over 350000 Commonwealth citizens. Even though connectivity was often a challenge, learners used mobile devices or library facilities. COL supported the establishment of Help Desks in the Ministries to provide learner support, leading to high completion rates. The uptake has been particularly encouraging in the Caribbean where the government of Barbados has continued offering free online courses with Coursera even after the COL project was completed. In Guyana, the ministry of education signed an MOU with the Employers' Association to ensure that the certificates earned through these online courses were recognized for employment.

COL has partnered with the Caribbean Association of National Training Agencies or CANTA to develop online courses for the Caribbean Qualifications assessor, instructor and verifier training. In addition, there have been several courses on building capability in leadership for ODL in TVET, and integration of assistive technologies in TVET to reach persons with disabilities. This partnership has also resulted in the development of institutional strategies and action plans for nine institutions in seven countries.

COL's Virtual University for Small States of the Commonwealth, where all Caribbean countries are members, offered MOOCs on different aspects of the Blue Economy.

Another strategy has been to use technologies that can reach the bottom billion. COL's MobiMOOC is a platform that works in low bandwidth situations and has an interface with basic mobile phones. This has been deployed for training farmers during the lockdown and is an example of how to reach the last person in the queue.

COL developed AptusPi a low-cost offline virtual classroom that provides learners in remote locations with access to digital resources including simulations for training. It is a server that works with a solar charger and a wireless router and costs approximately \$ 150. Quality audio and video content has been developed in partnership with Kenya School of TVET to train master craftspersons in Kenya and loaded on Aptus for reaching remote regions.

COL has been supporting the use of Open Educational Resources or OER, which is free content available under an open licence. What are the benefits? A study in Antigua & Barbuda showed that not only did the use of OER save costs for the students but also improved learning outcomes. Today, there are hundreds of OER repositories for academic content but not enough available for skills development.

Courses in skills development that may be of interest are available on the COL website.

Additional OER for skills development are available on these platforms. Often teachers require support in identifying and using OER, where COL provides training opportunities.

In the Pacific, COL curated video content released as OER from around the world and aligned it to the secondary school curriculum in three countries: Fiji, Nauru and Samoa.

Because of the high dropout rates in TVET, the continuous professional development of teachers is critical. COL worked with Zambia's Technical and Vocational Teachers College to offer two courses on facilitating Online Courses and Flexible Skills Development to build the capacity of teachers. As these courses are OER, they are being adapted to train TVET teachers across the Commonwealth. Teachers simply did not have the capacity to use the technology and lack of appropriate training content for online delivery added to the challenge.

In order to address this, a TVET Professional Development Toolkit has been developed for the Pacific and can be adopted/adapted for the Caribbean since the content is OER.

COL supports the development of blended learning models to achieve scale and sustainability. Students at the Kenya School of TVET study theoretical content for three months off campus and come to campus for the next three months for the practical component. By using this approach the school is able to accommodate twice the number of learners within the same time and space.

COL's e-apprenticeship model builds the capability of master trainers who then train master craftspersons leading to the training of apprentices. COL's online course is combined with technical skilling at the workplace and mentoring. Competency based assessments are provided by the qualification agencies, in Kenya, Nigeria and Zambia, where this model is being implemented.

COL has been working in this field for over 35 years and can confirm that – distance and online learning helps increase access, improve quality, reduce costs and support inclusion. When a typhoid epidemic broke out in 1910, Australia used distance learning to train health inspectors, while they continued to work. With all the technologies we have today, distance and blended learning is a viable solution to building resilient skills development systems. Blended learning refers to a

combination of distance and face to face learning and institutions can decide on the percentage of each component depending on the requirements of competencies being developed.

The road ahead is uncertain and how do we skill people for the jobs that do not yet exist? According to a recent report from Goldman Sachs, AI capable of content generation, can do a quarter of all the work, currently done by humans.

And AI is advancing at a pace which is generating alarm even amongst the leaders in the field. What can be done? Let us focus on three kinds of jobs where humans will continue to be in high demand: i) blue collar jobs, ii) jobs that need empathy and iii) jobs where creativity and innovation are the key requirement. Blue collar skills involve trades such as construction, manufacturing, and agriculture, where workers need problem solving skills in unpredictable conditions. Empathy skills enable the workforce to build strong relationships, provide effective care and support, and to work collaboratively with others, especially in professions like healthcare, education, and customer service. Creativity enables the workforce to generate new and original ideas, while innovation enables them to turn the ideas created into practical solutions for complex problems.

Is it possible to develop innovators? In their book *The Innovators' DNA*, Dyer, et al identify innovation skills that can be learned: questioning, observing, networking and experimenting—these skills can generate new ideas and promote out of the box thinking. How can we ensure that these skills integrated in TVET training?

The pandemic has provided an opportunity to pause and reflect on how we teach and learn. The Transforming Education Summit convened by the UN Secretary General last year sums up the key priorities that need to be addressed. There is an urgent need to address the learning loss, promote equity and inclusion, achieve digital transformation, review curricula and pedagogies and support psycho-social well-being.

Let us look at the four levers for implementing this transformation—the four Cs—connectivity, content, capacity and credentials—that would help us to effectively integrate blended approaches into the TVET system.

Countries need to invest in ICTs, which includes access to devices, connectivity and zero rating of educational platforms. New Zealand ordered devices for distribution and ministries in South Africa and Jamaica have provided free access to platforms by partnering with telecom companies. Any investment in ICT infrastructure must make provision for reaching the last mile so that existing inequalities are not exacerbated.

Online courses and learning modules for technical/vocational education and training have not been developed to the extent of other academic content. During the lockdown, Shanghai used simulation, 'demo videos, practical operations live and after-class practice'. Similarly in the US, virtual reality was introduced for training nurses. We need to find technology solutions that can work in low bandwidth situations and are available as OER.

There can be no resilience without the capacity of policy makers and practitioners at various levels. Governments can develop enabling policies and regulatory frameworks to promote blended

learning to make the skills development sector more flexible and resilient to deal with future challenges. For institutions, the top priority would be to build the capacity of its staff and students to become self-directed lifelong learners.

However, to make learning attractive and sustainable, there must be appropriate incentives such as accreditation of prior learning, recognition of qualifications and the ability to move between formal non formal and informal learning. Governments institutions and QA agencies all have a role in promoting quality skills development throughout life.

Whatever path we adopt, let us ensure that our learners have the three literacies that will prepare them for the road ahead. First, human literacy, prepares students to perform jobs that only human beings can do. Human literacy will help them to make ethical choices, equip them for social engagement through effective communication and empathy. Second, data literacy is essential in a world driven by data. Learners must be able to find meaning in the flood of information around us and separate the true from the fake. Third, technological literacy is essential if we are to understand machines and their uses. Learners must be able to deploy software and hardware in order to maximize their powers to achieve and create. If we can equip our learners with these three literacies, we will be investing in a resilient workforce ready to face the unpredictable future.