The Global Education 2030 Agenda
UNESCO, as the United Nations’ specialized agency for education, is entrusted to lead and coordinate the Education 2030 Agenda, which is part of a global movement to eradicate poverty through 17 Sustainable Development Goals by 2030. Education, essential to achieve all of these goals, has its own dedicated Goal 4, which aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.” The Education 2030 Framework for Action provides guidance for the implementation of this ambitious goal and commitments.

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Education is UNESCO’s top priority because it is a basic human right and the foundation for peace and sustainable development. UNESCO is the United Nations’ specialized agency for education, providing global and regional leadership to drive progress, strengthening the resilience and capacity of national systems to serve all learners and responding to contemporary global challenges through transformative learning, with special focus on gender equality and Africa across all actions.
Short Summary

This report captures the proceedings of the 2nd virtual South Asia Regional Symposium on ICT for Education (vSARSIE) organized by the UNESCO Asia and Regional Bureau for Education and the New Delhi Office as an online symposium on 15 and 16 October 2020.

vSARSIE provided a platform for policymakers, field experts and practitioners to share knowledge and experiences, and reflect on future actions for building more resilient national education systems to cope with disasters or emergencies especially in light of the massive learning disruptions caused by the COVID-19 pandemic.

The two-day agenda featured five technical sessions that delved deeper into several critical issues. These included reviewing the progress made by Bangladesh, Bhutan, Maldives and Nepal in developing national ICT policies and master plans, use of ICT to overcome the digital divide including the use of open educational resources (OERs) in advancing technical and vocational education as well as the applications of ICT in teacher professional development, enhancing inclusion and for better skills anticipation to bridge the labour market gaps.

This report highlights challenges and possible solutions for scaling up quality distance learning programs including the need to shift focus from a human capital approach to a human flourishing one, the urgent need to mainstream Social and Emotional Learning (SEL) in education and why equity concerns should be front and centre of any digital learning strategy. It highlights how low and no-tech approaches can be used equally effectively to bridge the learning gaps, and how schools could be prepared to be ‘technology ready’ through a combination of content, technology, and human infrastructure. Session summaries also capture innovative case studies and approaches on personalized adaptive learning tools that can scale up quality education using data analysis and machine learning capabilities, using social networks and teacher-student communities as a platform for teaching learning processes, combining the use of community radio with technology enabled skill development programs to improve local livelihoods and how blockchain and artificial intelligence (AI) applications are supporting intelligent skills matching, micro-credentials and career progression.

While the resource materials used during the symposium including the session recording and presentations are available online for future reference, it is hoped that this summary report will provide a concise and crisp overview of the symposium proceedings to a range of interested stakeholders including government agencies, practitioners, academia and educational institutions.
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The inaugural South Asia Regional Symposium on ICT for Education (SARSIE) on 27–28 February 2018 was held in Colombo, Sri Lanka with the generous support of the Japan Funds-in-Trust. It provided an opportunity for six South Asian countries (Bangladesh, Bhutan, India, Maldives, Nepal, and Sri Lanka) to learn about a variety of issues including the role of information and communications technology (ICT) in achieving Sustainable Development Goal (SDG) 4 in policy development, teacher development, and equipping children with relevant skills for the future.

Since 2018, South Asian countries have made significant progress in national policies and activities that use ICT to support education. Bhutan drafted and launched iSherig 2 Master Plan 2019–2023 as their second ICT in Education Master Plan in 2019, and developed the Bhutan Professional Standards for Teachers. Sri Lanka has developed and launched its ICT in Education Master Plan 2019–2023. Bangladesh completed an internal review of their Digital Bangladesh 2012–2021 master plan for ICT in education with UNESCO’s support. Maldives has commenced the development of their second Master Plan and integrating ICT into their Maldives professional framework for teachers. Nepal has developed the ICT Competency Standards for Teachers and reviewed its first ICT in Education Master Plan and commenced development of its second Master Plan. India launched a series of initiatives for ICT-based application in school education and the use of education technology (EdTech) is on the rise with a large number of IT businesses in India.

In 2020, South Asian countries faced the COVID-19 pandemic with limited preparation with regards to public health infrastructure, basic sanitation facilities and access to broadband connectivity. South Asian economies are likely to shrink for the first time in four decades due to a drop in exports, return of migrant workers and adverse impact on MSMEs that could push an additional 132 million people into extreme poverty. Moreover, inequalities are likely to widen with women and vulnerable groups affected more adversely.1

In the education sector specifically, of the 1.5 billion students impacted across the world due to school closures from pre-primary education to university-level due to interruption of classroom-based learning, some 430 million students reside in South Asia.2 Without adequate ICT devices, internet/mobile network access, distance educational resources and teachers training, appropriate and quality teaching/learning resources and content, students simply cannot partake in distance education to continue their learning trajectories.

At the most risk of being left behind are students from resource-poor areas, remote rural areas, and low-income households. In addition, learners with disabilities or bilingual students who speak a different language in the home than in school may need extra support. Quality of education and learning which was already a major gap for many South Asian countries has been widened.
further due to the learning disruption. Technical and vocational education and training (TVET) programs have also been impacted by COVID-19 pandemic. While policymakers across regions are encouraging youth to embrace the idea of skilling, re-skilling and up-skilling themselves, considerable challenges remain on the ground with regards to the delivery of vocational training and skills development programs, entry into the labour markets and transition between jobs.

With appropriate policy support, ICT infrastructure investments, teacher capacity building and relevant curricula and contents development, ICT has the potential to improve the teaching-learning process, education management efficiency and ultimately enhance learning outcomes, so that South Asian countries’ quality education and skills development goals can be achieved.

In this context, UNESCO organized the virtual SARSIE (vSARSIE) on 15th and 16th October 2020 in the form of an online symposium. The symposium aimed to present various applications of ICT in improving the quality of education and skills training, bridging the learning disruption, while ensuring equity. The symposium intended to provide a platform for policymakers, field experts and practitioners to share knowledge and experiences, and reflect on future actions for building more resilient national education systems to cope with disasters or emergencies.

OBJECTIVES

• Share regional experiences of developing and implementing national ICT in education policy in light of COVID-19

• Discuss case studies on good practices of using ICT to bridge the digital divide, improve education and training delivery, improving learning outcomes and achieving inclusion, especially in light of COVID-19;

• Explore emerging and cutting-edge technologies in developing contexts to facilitate forecasting in emerging skills, transition to labour market etc.

• Launch the TVET Regional Knowledge Hub and provide platform to further discuss ICT in Education related issues

• Discuss actions to be taken to increase the education system’s resilience to future crises

SYMPOSIUM AGENDA

The symposium was organized virtually by UNESCO New Delhi and Bangkok offices. The detailed agenda is showcased on pages 52 and 53 (Annexure 1).

OUTCOME AND OUTPUTS

vSARSIE 2020 aimed to increase dissemination of knowledge on ICT applications pertinent to education and relevant to COVID-19 response. South Asian stakeholders and institutions actively engaged in this field are recognized for the efforts made in developing ICT master plans and policies. The expert input and subsequent discussions led to improved understanding of the array of activities and best practices that aim to integrate ICT for improving/tackling various educational challenges and the range of strategies and policies that underpin these activities. This outcome document of the proceedings of the seminar serves as a compendium of the sessions and discussions.

The recording of the seminar can be found at <https://www.facebook.com/watch/live/?v=443745226607425&ref=watch_permalink>

The various presentations can be found at <https://bangkok.unesco.org/content/virtual-south-asia-regional-symposium-ict-education-vsarsie>
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(VIRTUAL) SOUTH ASIA REGIONAL SYMPOSIUM ON ICT FOR EDUCATION PROCEEDINGS

REBUILDING TOWARDS ICT-ENABLED RESILIENT EDUCATION IN THE COVID-19 ERA
Welcome remarks

Shigeru Aoyagi
Director,
UNESCO Asia and Pacific Regional Bureau for Education

In 2018 UNESCO launched the SARSIE with the generous support of Japanese Funds-in-Trust (JFIT). Since then, it has been one of the key platforms which have brought together education policymakers, international experts, private sector companies and NGOs to address the unique education challenges in the region collectively.

South Asian countries have made commendable progress over the past two years in developing national policies and leveraging the power of ICT to support quality education.

With UNESCO’s support, Bangladesh completed a comprehensive level of its master plan for ICT in education. Bhutan and Sri Lanka both successfully developed their master plans in their countries. Maldives and Nepal are well on their way to complete their master plans. Significant milestones have been reached in developing professional ICT competencies among teachers. Bhutan has launched its professional standards for teachers, and the Maldives currently focused on developing its ICT competency frameworks and standards. India has launched a series of significant initiatives for ICT based applications in schools. Already considerable progress has been made to face a new environment in the light of COVID-19.

Globally 1.6 billion students have been affected by school closures. About 430 million are from the South Asia region; meanwhile, gaps & inequality of education persists for the most vulnerable populations from remote and rural areas, low-income households, learners with special needs and many others. In this region, we have already seen the widespread use of ICT in education, but now is a time to rethink ICT for the future to build resilient education systems to address the widening of existing inequalities.

In this context, we are gathered today to discuss the topic: Rebuilding Towards ICT-enabled Resilient Education in the COVID-19 Era. We hope that SARSIE 2020 will show how national ICT in education policies and the use of emerging technologies can assist the development of new skills for a new era. While also discussing good practices to bridge the digital divide and achieve the goal of inclusive education systems resilient to future crises. We hope that this platform continues to be used for Collaboration with other South Asia countries and mediate work on issues related to ICT. UNESCO will continue its effort to serve South Asia to overcome challenges together and build more resilient, inclusive, and innovative education systems.
Opening remarks

Yoshiaki Ishida
Director for International Strategic Planning, Office of the Director-General for International Affairs, Ministry of Education, Culture, Sports, Science and Technology (MEXT)/Deputy Secretary-General, Japanese National Commission for UNESCO

The COVID-19 crisis has accelerated the disruption of education around the world, and a large number of learners have been affected by school closure globally. Under this crisis, the world has experienced the potential of ICT based education, including distance or online learning. ICT enabled us to secure education continuity, especially during the emergency period of the pandemic. Simultaneously, planning the combination of face-to-face learning and distance or online learning should be prioritised considering the achievement of quality education for all.

A brief overview of Japanese educational policies and measures in COVID-19 responses:

- Providing financial & material support necessary for ensuring children learn nationwide.

- Starting a new program called Giga school program to provide one computer per student and high-speed internet for schools, i.e. for ensuring equitable and individually optimised learning (supplementary budget around $ USD 4.6 Billion).

- Providing convenient uplisting of educational videos on its website by collecting materials from government and private sources. This project increased learning for students from preschool to high school.

- Enabling exclusive use of ICT by developing and verifying prototypes for online learning assistance that will ensure learning as well as standardising educational data, including the compliance of the national curriculum standard.

This conference provides a precious opportunity to deliberate over experiences, good practices, national policies on ICT in education in the region. Especially in light of the COVID-19 crisis, we should learn from each other so that we can build a world leaving no one behind. Through mutual planning, a resilient society should be built, for which resilient education systems will play a pivotal role.
An unprecedented event such as the COVID-19 pandemic serves as a humbling lesson of how vulnerable we are as a species. Statistics project that early in the pandemic, 1.5 billion learners were out of school, as schools had to be closed to prevent the spread of the disease. The pandemic has also spotlighted the mental health concerns of our students.

The solutions presented by policy-makers around the world include:

- The power of online learning has been suggested as a quick win of a low hanging fruit, as several countries have already begun integrating ICT processes.
- The power of human flourishing and resilience is now emerging as an essential solution. Governments across the world increasingly recognise it. For example, the Ministry of Education in India has started a portal dedicated to the mental wellbeing of students.

Key constraining factors include:

- 50% of students are without internet connectivity in the Asia-Pacific region.
- Students lack hardware such as laptops, desktops and tablets.
- Poor quality of existing digital resources that are neither linguistically accessible nor culturally relevant.
- Lack of training and capacity of teachers in remote instruction or distance teaching.

It is critical to shift our focus from increasing human capital to human flourishing, to build the emotional resilience of our learners to be a part of the solution to the broader community. The grim reality of the pandemic has emphasised the need to mainstream Social and Emotional Learning (SEL) in education - a "whole person" approach to the solution.

Some examples of MGIEP’s work in this area includes:

- Digital pedagogy that enables storytelling of narratives with a significant impact on human behaviour, cognition and emotion.
- Lesson plans around games allowing children to achieve learning outcomes and competencies in a non-competitive immersive manner enabling continuous feedback assessments.
- A digital learning value-added chain analysis framework to identify bottlenecks in content, delivery at the school level, infrastructure, lacuna in policies, and human capacities.
• Move from ICT (transmissive) to digital pedagogies (transformative).

• Need to shift our focus from increasing human capital to enhancing human flourishing. At the core of human flourishing is the synergy between intellectual (cognitive) and emotional intelligence. Contrary to popular belief, blended forms of learning in a post COVID era have the potential to establish human flourishing. Urgent need to mainstream Social and Emotional Learning (SEL) in education. While doing so, it is important to not introduce a particular subject on SEL and make it a purely cognitive exercise. Students should be enabled to learn, experience and practice emotional intelligence.

• Also important to plan to shift from ICT (transmissive) to digital pedagogies (transformative). Digital pedagogies are much more engaging and allow for learners to connect across spatial boundaries to discuss and reflect through games, case studies and story telling.
Overview of project
to enable South Asian countries develop policy and resources for success in use of ICT in education

Toan Dang
Programme Officer, UNESCO-Bangkok

Out of the 1.6 billion children affected by COVID-19 globally, around 430 million are from the South Asian region. In response, the remote distance learning initiative implemented by countries has been an effective solution. However, there are still potentially 147 million children in South Asia who are lacking access to education.

With generous support from the Japanese Funds-In-Trust (JFIT), UNESCO Bangkok’s project titled “ICT to Facilitate SDG4 in South Asia” has been working with four Member States in the region since late 2017, namely Bangladesh, Bhutan, Maldives and Nepal, to strategically implement ICT in education for achieving the countries’ SDG4 targets.

SDG4 is one of the overarching goals that guide UNESCO’s work in education which seeks to ensure inclusive and equitable quality education and promote lifelong learning for all. To support the achievement of this goal, the project consists of three main components:

1. Supporting the review and development of national ICT in Education policies beginning with a comprehensive review of education policies and master plans. These plans strategically align with the country’s education goals and holistically covers aspects of infrastructure, teacher capacity, learning resources and human resources.

2. Strengthening teacher competencies and development of ICT competency standards for teachers. These provide the right development system and seek to equip teachers with the skills to teach in this new era.

3. Promoting dialogue and knowledge sharing to ensure that best practices for dealing with challenges are shared.
Session 1
National policy and resource planning for success in ICT in education

1.1 Bhutan

NATIONAL RESPONSE TO COVID-19
In Bhutan, COVID-19 has resulted in the closure of a total of 609 schools impacting around 170,000 students. This has led to the adoption of a reduced theme-based curriculum. The new approach has been adopted for the pre-primary classes up to class 8. For class 9 to class 12, offline classes have begun from 1 July 2020, and the focus of teaching is based on the key areas focused upon in the reduced curriculum.

REMOTE LEARNING TECHNOLOGIES
Lessons are being provided on National TV and are also available for viewing on YouTube and the e-Learning platform. Students from class 8 onwards who have access to devices are using Google Classrooms, while students from lower classes are using WhatsApp or Telegram for learning.

To tackle the digital divide in Bhutan, self-instructional materials in the form of textbooks have been created and classes are broadcast on the radio to improve access.

POLICY INITIATIVES
While the ICT competency framework of Bhutan is aligned with the UNESCO framework, the Master Plan is yet to be implemented.

CHALLENGES FACED
• Low ICT skills of students and teachers
• Insufficient online pedagogic skills
• Role of parents
• Lack of sufficient infrastructure in terms of devices and connectivity

NEXT STEPS
• e-learning platform launch by November 2020
• Capacity development of teachers on digital pedagogy
• Development of more e-content
• Enhancing cellular network

1.2 Nepal

NATIONAL RESPONSE TO COVID-19
In Nepal almost 9 million students have been affected by the pandemic. As a result, the academic calendar has been adjusted, although the recovery of learning may span a year or several years. Selective content focus is also being considered.

REMOTE LEARNING TECHNOLOGIES
A learning portal with complete course materials has been launched. Online classes and exams are encouraged. Virtual teacher training is conducted.

POLICY INITIATIVES
The draft of the new ICT master plan
needs to be edited to cover the impact of COVID-19. The Government of Nepal has set up a new committee to come up with alternative choices for education. The Alternative Education Directive and Immediate Action Plan proposed has been approved by the Cabinet to facilitate teaching and learning.

**CHALLENGES FACED**

- Economic and digital divide among students
- Availability and affordability of digital infrastructure including internet connectivity
- E-readiness of teachers and students for digital learning
- Monitoring of learning process (practical work for technical streams)
- Many schools were transformed into Quarantine and Holding areas

**NEXT STEPS**

- Grouping of students in 5 Categories done at the early stages of lockdown. Based on access to infrastructure to design relevant interventions - one size does not fit all.
- Subsidised mobile data, dedicated TV Channel, Radio education Channel and printing and delivery of self-help material has been identified for different category groups
- Establishing community learning centres with free internet
- Potential low tech option that includes forming closed user groups within schools with subsidised plans so that teachers and students can have unlimited conversations on phone and via SMS.
- Shared digital infrastructure, education cloud services, introduction of AI for personalised learning being planned
- Ensuring investment and intervention are complementary if and when normal education cycles resume

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**1.3 Maldives**

**NATIONAL RESPONSE TO COVID-19**

Maldives has seen around 90,000 students and 315 schools impacted due to COVID-19. The process of school closure in Maldives experiences complexities at multiple levels of difficulty with lockdown, opening up and a second lockdown. Schools have reopened recently and have had to adopt various administrative arrangements to cater to physical distancing norms, cleaning, disinfecting, etc. The academic calendar has been adjusted, and the academic year has been extended to the middle of 2021. Private Institutions are suffering major losses due to students discontinuing.

**SCHOOL MODALITIES**

Schools have reopened in multiple modalities. Face-to-face classes are conducted for kindergarten students. Google Meet and Google Classrooms are the main modes of online classes and student attendance records are maintained. A file portal has been developed as an online repository of resources to provide access to learning materials. The curriculum has been condensed by identifying the most critical elements.

**DIGITAL TRAINING AND ACCESS**

Teachers are being trained to use online pedagogies and assessment. Over 40% of the teaching staff have been certified to Google Certified Educator Level 1. All students attending public schools have been provided with tablets and during the COVID-19 period, students were provided with 5GB mobile data per month and teachers with 10GB data per month.
**CHALLENGES FACED**
- Ensuring access and engagement of every child
- Internet penetration is high in Maldives, cost-effective high speed is a huge challenge
- Teachers capacity for ICT pedagogy
- Measuring learning while teaching online
- Production of effective and interactive content

**NEXT STEPS**
- Finalise and endorse ICT master plan and competency standards and start implementing
- Prioritise the activities for sustainable internet solutions (working on establishing a local platform which will consume less bandwidth in comparison to Google classroom)
- Establish a robust mechanism for monitoring distance learning

---

**1.4 Bangladesh**

**NATIONAL RESPONSE TO COVID-19**
In Bangladesh, the COVID-19 Pandemic has affected around 39 million students, with schools being closed since 18 March 2020. A reduction in the curriculum to make up for time lost is being considered by the Ministry of Education.

**REMOTE LEARNING TECHNOLOGIES**
Efforts have been taken to develop high-tech and low-tech teaching-learning environments and resources. Online and offline classes have been started through TV, radio and other online platforms, for pre-primary to higher education, even teacher training is being conducted. Virtual platforms are also being used to conduct regular meetings for teachers. Measures to improve accessibility by bringing educational services to the doorstep of common people are underway.

**POLICY INITIATIVES**
As part of the Japanese Funded Trust Project, Bangladesh completed an internal review of the 1012-2021 master plan for ICT in Education along with UNESCO support and are creating a New Master plan for 2022-2030.

**CHALLENGES FACED**
- Developing a crisis response and recovery plan with the standard operating procedure.
- Developing online learning assessment system
- Maximising content available and reach through four platforms, i.e. online/ offline, TV, radio and mobile phone
- Developing low-cost learning packages
- Tracking and bringing children back to school to prevent dropout

**NEXT STEPS**
- Developing and implementing a phase-wise school reopening plan
- Integrating remote learning into regular school education
- Developing a sustainability mechanism for remote learning platforms
- Developing an online/remote learning assessment system
- Assessing student learning status and their mental health
- Ensuring smooth transition support for teachers
- Developing a sustainability mechanism for remote teacher professional development
Session 2
Using ICT to bridge the digital divide, overcoming learning disruptions and promoting innovation

Literature review presented by the moderator

Over the years, the discourse on digital divide has extended from access to the ability to use the Internet (e.g., digital literacy, language, differential abilities) to having agency (Competence, Confidence, Accountability & Autonomy) to control and adapt to the digital world.

ACCESS
SES impacts access to computers at home and school not only for students but for teachers as well (DeBell & Chapman, 2006; Dolan, 2016; Purcell et al., 2013).

USE
• Traditional literacy and numeracy a precursor to acquiring digital competence and future digital equity (OECD, 2015)
• High-SES students have better ICT literacy than their low-SES counterparts (Ritzhaupt et al. 2013).
• Children who lack digital skills or speak minority languages often can't find relevant content online (UNICEF, 2017)
• Teachers do not integrate technology into instructional tasks in the same way or for the same purposes across the continuum of SES (Hohlfeld et al. 2008; Reinhart et al. 2011).
• Globally, 12 per cent more men than women used the internet in 2017. In India, less than one third of internet users are female (UNICEF, 2017).

AGENCY
Curriculum that reflects research on current and future technology trends, respects local context and culturally sensitivities, provides digital competencies and attributes with a parallel emphasis on teacher professional development will allow students to benefit from digitally relevant pedagogies and exercise digital agency (Passey et al. 2018).

Due to closure of schools in the wake of COVID-19, worldwide 31% children did not have access to remote learning with minimum 38% (147 out of 391 million) children potentially not reached in South Asia. Globally, 3 out of 4 children who could not be reached belonged to rural areas and/or poor households (UNICEF, 2020).

REFERENCES

Continued on next page.
Session 2.1
Effective distance learning and tech-enabled open school systems

Fengchun Miao
Chief, ICT in Education Unit, UNESCO Paris

The education system was under crisis even before the COVID-19 as evident from the UNESCO Global Education Monitoring Report 2020 such as 258 million children entirely excluded from education due to poverty, while six out of ten children and adolescents globally are not achieving minimum proficiency levels in reading and mathematics. Furthermore, 50% of students dropped out before completing the full cycle of upper secondary.

In the region of South Asia, income inequality has exacerbated the digital divide. Digital readiness for distance learning is less than 25% for low-income countries such as Nepal and Bangladesh in contrast to high-income countries with 90% readiness. Therefore, it is highly critical for countries to consider how the different education approaches suit local conditions. Often, these approaches still fail to consider the marginalised, disadvantaged and students with disability. Even low-tech modes such as radio-learning are not effective with many student households lacking resources. For instance, in Nepal less than two percent of families have access to radio.
Four perspectives have emerged as crucial for distance learning readiness:

1. Technology and content readiness including platform and availability of content across all the subject areas and across all the levels.
2. Pedagogical readiness, including pedagogically appropriate content and teachers and parents support.
3. Monitoring and evaluation readiness including monitoring of learning and evaluation of national distance learning programs.
4. Policy planning and execution readiness. For example, countries like South Korea and Singapore that had developed ICT education policy masterplan and well-implemented, have been able to cope well to the COVID-19 crisis.

The effectiveness of distance learning needs to be evaluated in terms of:

- whether all the learners are being reached or not, as even with radio or TV, the data suggests that all students aren’t reached.
- how much the loss of academic semesters is being contained because if the academic semester is being lost, then it’s a failure and not a success.
- ensuring the quality of learning outcomes, which is a big problem.

Therefore, UNESCO has developed **Ensuring effective distance learning during COVID-19 Disruption: Guidance for teachers**. This resource provides an overview of all distance learning scenarios including online learning, TV, radio and print-based material. It provides a taxonomy to guide platform functionality evaluation focusing on courses, data management, supporting learners, supporting teaching and supporting formative and summative assessment. It posits possible actions by teachers to facilitate effective distance learning.

UNESCO is also developing a guiding framework for the technology-enabled open school system to reinvent in order to leverage the disruption caused by COVID-19. It addresses the following considerations that have been highlighted from the pandemic:

- School education should move beyond physical school spaces.
- Crisis resilience must be a consideration of future school systems since connecting schools is only a necessary but not sufficient condition.
- Education cannot wait until Hi-Tech solutions are onboarded to deliver quality education.
- Technology should be leveraged to make the learning space inter-switchable between school-based and home-based learning.

According to the framework, technology readiness in education requires creating neo-infrastructure including content, technology, and human infrastructure with adequate content-readiness. Additionally, it functions by providing access to learning using an inter-switchable function through creating open schools. This ensures that students have school-based blended learning when schools are open without crisis and when a crisis strikes, the home-based distance learning can be immediately switched on.
The need for different strategies in pandemic times is highlighted in the experiences of Mindspark, a personalised adaptive learning software from Educational Initiatives working in India and many other countries to improve learning outcomes using technology.

Many South Asian and African countries, including India, are facing a learning crisis as verified by multiple independent studies. The observation on the ground is that children are:

- Unable to read in any language whether it be mother tongue or English.
- Unable to apply simple functional math in everyday interactions.
- Rote-learning, such that children are memorising without actually understanding how to apply those concepts.

This learning gap has been accelerated and accentuated with respect to learning loss in COVID-19 times. In this context, Ed-Tech and ICT need to be leveraged to enable children to be involved in meaning-making opportunities instead of merely rote-learning.

Working in this field since 2001, EI has identified three major aspects to focus its work upon.

- Large scale assessments across multiple states in India and in countries like Maldives and Bhutan.
- Learning solutions that deliver personalised teaching such as Mindspark.
- Capacity building using the science of learning in a collaborative effort with government bodies in Indian and elsewhere to deliver 21st century learning outcomes. The paradigm of science of learning is applying principles similar to that of medicine to solve the learning crisis. This cycle begins with a detailed diagnosis that may involve testing, a deep dive into lifestyle and past history to prescribing a course of action to monitoring progress to evaluating success of implementation of the recommended course.

Deriving from this ideology, the data-driven, research-based Mindspark present in more than 10 countries as it works with Grades 1-8 to improve skills in mathematics and language.

- Has developed pedagogy-based personalized adaptive learning software which uses data analysis and its machine learning capabilities to be adaptive to each and every child.
- Maps languages and learning to the children’s contexts.
- Works on child-response data and on how the child reacts and interacts with the system.
- Has multiple types of questions which assess a child’s ability to do things to inform pedagogical practice.
Gives immediate feedback to students using its intelligent response system.

Provides a strong governance system such as a mobile dashboard to allow stakeholders like policy officials, to evaluate if a program is achieving the set targets based on topics being covered and the learning occurring per child, per concept.

Transparency in data aids streamlining processes and this system has been tested with multiple efficacy trials. In one such study spanning 4-5 months, the learning level of students who used Mindspark doubled in Mathematics and more than doubled in language (Hindi) as opposed to the cohort of students from the control group.

DATA-DRIVEN MITIGATION STRATEGIES
A digital profiling of students across 10 states of India found a wide spectrum of access possibilities including geographical inequities. It is for these reasons that EI is choosing several pathways to enable student learning even though schools remain closed.

- Students with smartphones and internet connection accessed Mindspark with very low data consumption.
- Students with a feature phone accessed learning through IVRS technology.
- Students with no-tech access received worksheets from volunteers once lockdown measures were eased.

The data on access to and progress in learning is available to parents and teachers to learn from and improve upon.
Session 2.3
Myths of technology for learning: Overcoming learning disruptions and promoting innovation

Frank Van Cappelle
Education Specialist, UNICEF ROSA

There are six myths about technology for learning that are important in the context of South Asia with the purpose of initiating reflecting on different aspects of using technology for learning, its potential and possible challenges.

MYTH NO. 1
Digital divide is mostly about access
Introducing free access to technology in communities without considering digital literacy will actually widen the disparities between the haves and have-nots.

- The digital literacy divide, which is to know how to use and benefit from ICT, is at least as important and arguably a much more challenging thing to address.
- The linguistic divide with softwares, Apps and internet resources predominantly available only in a few languages, especially English needs to be addressed.
- Socio-cultural factors, power structures within society, makes it very difficult for the poorest and the most marginalized to become digitally literate. Research in India reflects that the boys especially who are higher in status especially in terms of caste, class and so on, have far greater opportunities to become digitally literate including through their social network which plays a major role.
- The overarching gender digital divide especially in South Asia where girls tend to have much less access to devices and opportunities to become digitally literate.

MYTH NO. 2
Access means one device per child
The one laptop per child, 1:1 global initiative highlighted the unaffordability and ineffectiveness of this proposition even with economies at scale. So, other models need to be considered especially in South Asia,

- Sharing devices could lead to acquisition of 21st century skills such as collaborative problem-solving and socialisation. With relaxations in physical distancing such models can be again explored.
- One device per teacher is a really powerful model that needs to be explored further. UNICEF is looking at it in a range of refugee camps with refugee teachers and it promises a lot of potential there for formative assessment, differentiated instruction, for professional development and so on.

MYTH NO. 3
Access = Usage = Learning
UNICEF has preliminary results from the household and teachers surveys on learning continuity during COVID-19 in the 7 countries in the region that shows that access does not necessarily lead to
learning and can be determined thus:

- **Level 1** is the number of households with access to some device whether it is internet, radio or TV. For South Asia, the estimated figure is 66% with not all having internet but at least TV/radio.

- **Level 2** is the share of students with regular access to devices. Data for Level 2 isn’t available yet but it is known that if there is a device in the household not every child would have access to it, especially girls in South Asia, with other sets of issues like connectivity that might prevent regular access.

- **Level 3** is the percentage of children actually using devices for learning. The preliminary data from Nepal suggests only a quarter of children are using devices for distance learning whereas a greater number has potential to do so.

- **The final Level 4,** is the number of children learning effectively that depends on many factors like approach and relevance of the learning modality and materials. This is a general challenge as this learning crisis existed even when schools were open. Children with disabilities are much more likely to have difficulty using and benefiting from technology-based learning. Simultaneously there is a lot of potential to rejuvenate adaptive technology for students with disabilities.

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**MYTH NO. 4**

**Teacher interaction is not necessary**

‘Guidance on different learning modalities’ presents a matrix to reach the most marginalized.

The bottom of this matrix focuses on high-tech, internet enabled solutions that were often the first ones to be rolled out in countries. In the COVID-19 response the focus has been too much on the left hand side of Fig 2.3.1, whereas the need of the hour are low-tech and no-tech modalities with teacher involvement. Although no one

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**FIGURE 2.3.1**

Home Learning Modalities

- **Low/no tech, offline**
  1. Printed materials, books
  2. Radio
  3. TV

- **Main focus for reaching disadvantaged children and youth**

- **High tech, online**
  4. Home visits
  5. Calls
  6. SMS
  7. Digital (audio) books
  8. Feature phone apps
  9. Other apps/platforms
  10. Digital classrooms
  11. Video conferencing
  12. Social Media

*Ideally supported by parents/caregivers*
denies the critical role of teachers, this is listed as a myth because it has not been happening in practice. The role of teachers is too often forgotten in the rush towards developing tech solutions.

MYTH NO. 5
Internet is necessary and is always better

The internet does have enormous potential enabling opportunities for learning, virtual collaboration, peer interaction and communication with teachers. However, it only works under the right conditions. Research findings from dozens of kiosks in remote areas consistently suggest that internet access with no supervision leads to children playing games online. In stark contrast, internet-free educational games lead to better engagement with learning.

MYTH NO. 6
Innovation in education requires technology

Many innovations that do not require technology. Quite a few of them are also cost-effective. Also, technology is not the only solution to all problems and challenges in education.

OVERALL TAKEAWAYS

- Not to jump on technology or particular solution first and consider what are the challenges that are to be addressed.
- Equity consideration should be front and centre of any strategy otherwise it would lead to wide equity gaps.
- Technology is one component of the bigger picture. We should always first focus foremost on the learning
- Follow the digital principles
- Address the different digital divides not just the access digital divides otherwise our initiatives would widen inequalities
- Monitor and evaluate reach and effectiveness.

Session 2.4
Advancing learning in TVET with OER: Findings from the UNESCO-UNEVOC Global Grant Program

Max Ehlers
Associate IT Officer, UNESCO-UNEVOC International Centre for TVET

UNESCO-UNEVOC found TVET to be a neglected area in the OER space. Interviews with institutions and people in TVET indicated the enormous potential of OERs to contribute substantially in the task of skilling people, better access, better equity, higher quality and improved efficiency of TVET.

Grant applications from across the world were invited for $5000 for 5-year projects to make the concept better known and to get institutions to develop open materials. However,
most applications reaching by January 2020 made it clear that many do not understand the concept of OER and mistake it for online education.

As per the OER Recommendation adopted by UNESCO in 2019, Open Educational Resources (OERs) are described as:

- Are learning, teaching and research materials in any format and medium
- Reside in the public domain or are copyrighted materials released under an open license
- Permit no-cost access, re-use, repurpose, adaptation and redistribution by other
- Adhere to the 5R requirement i.e. retain, re-use, revise, remix, and redistribute freely

As per the recommendation of OER adopted by the general UNESCO conference in 2019, if they satisfy this criterion then only they will be truly open.

Five winners were selected of the 61 proposals that met the criteria. The selection was based on their conceptualisation of a clear product, a well-defined target, open license, realistic and with potential for creating a lasting impact. Some of the other submissions that were impressive in their quality led to UNEVOC persuading other funding organizations to invest in open TVET projects in the future so that more number of projects could be supported.

The five selected projects are based in:
- **India**: developing open materials that can be used in a MOOC to develop school leadership capacities.
- **Paraguay**: developing videos for learning in three different languages. These videos can also be used in rural contexts even where no technology is available and the teacher can teach offline.
- **Germany**: making existing digital materials available for the OER world so that others can adapt them to their needs and share in their own learning management systems.
- **Kenya**: reducing the post-harvest losses in agriculture.
- **Philippines**: studying aquaponics, an important area in the agricultural sector.

Participants have reported obstacles in OER implementation in pandemic times. They opine that OER requires a huge paradigm shift and attitudinal changes in society. The participants report that many stakeholders do not...
understand the potential and feel that it threatens their ownership of intellectual property.

On the other hand, participant feedback indicates that developing OER materials led to eye-opening realisations such as OERs:

- Benefit institutes with a fresh perspective on the future of learning.
- Offer drastic savings.
- Help prepare better for the realities of the workspace.
- Help raise quality standards.
- Lead to increased access.
- Are updated easily as compared to traditional copyright materials.

UNEVOC considers that the creation and use of OERs make the institutes part of an ever-growing global community.

**LEARNING FOR UNEVOC**

- Quality of the material and quality of education are all that matter.
- Encouraging results seen in the development of educational material that did not use copyrighted material from the start but produced materials that can be very openly and freely uploaded and shared in all kinds of context, that can be used digitally and can be printed and are not restricted by any existing copyrights.
Session 3
Using ICT for development of teaching/training resources and aids and preparing teachers/trainers post-COVID-19

Literature review presented by the moderator

• Access to ICT tools and infrastructure is not useful without a strong pedagogic approach (UNICEF, 2017).

• Teacher pedagogical beliefs have the potential to hinder the process of adoption of ICT tools as it is their beliefs that will expand their skills and knowledge (Guskey, 2002).

• Teacher Professional Development is not limited to imparting technical skills, it must also help teachers develop strong pedagogic practices and an opportunity to practice the skills they have learned (Trucano, 2015).

• To effectively use ICT in classrooms a strong collaborative effort is required on part of both students and teachers to build communities of practices (Kozma, 2011)

• Many teacher competency frameworks exist which can be used to guide the policies on TPD (e.g. UNESCO 2018).

• Teachers who had prior experience of using ICT in a project based learning were able to adapt to the distance mode of teaching during the COVID-19 pandemic (Charania et al. 2020).

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Session 3.1
Innovating teacher professional development & professional learning

Riina Vuorikari
Research Fellow, European Commission

This talk focused on Teacher Professional Development (TPD) based on a study that examined new models and features in TPD and professional learning conducted for the European Commission.

Organisation for Economic Co-operation and Development (OECD) has identified:

- Half the teachers have a conflict with the classroom schedule to participate in Professional development activities.
- Often teachers receive no support from their employers to participate in TPD activities or these activities are not properly incentivized.
- A high demand for training in areas such as ICT for teaching and teaching in multicultural classrooms.

Studying 30 TPD models, the study concluded that TPD models need to be integrated into policy programs and incentivized to be accepted by teachers. The study also highlighted that teacher competency frameworks like that of UNESCO help facilitate ICT-supported pedagogies by creating a shared vision and sharing best practices. The European Commission has a Teacher Competency framework of their own similar to that of UNESCO in the European context and countries who have implemented these frameworks have fared better through the pandemic.

It is important to marry the innovative features in TPD with the ways they respond to the teachers’ needs. It is crucial to be research-based to have evidence of what really works. Darling-Hammond lists seven features of effective professional learning that also has an impact on student learning outcomes.

1. Focus on content
2. Support collaboration in job embedded context
3. Use models and modelling of effective practices
4. Provide coaching and expert support
5. Offer opportunities for feedback and reflection
6. Should be of sustained duration
7. Incorporate active learning

There are many examples of emerging trends in education from the study including:

- The standard TPD model of 27 to 30 hours is difficult for teachers to fit into their schedule
- New learning models allow for the combination of individual reading, watching films, meetings with colleagues and tutor to discuss new concepts
- Professional learning among peers in familiar settings is more effective
- Using social networks as a platform for teaching-learning processes as in Iceland, lead to good results
The study though done earlier identifies outcomes that are relevant in even current contexts.

In the beginning of September 2020, the European Union released a new Digital Action Plan which will run from 2021-2027. It includes many new actions taken to make the situation created by the pandemic better.
Session 3.2
Facebook supporting education

Adam Seldow  
Director of Education Partnerships, Facebook

This talk centered on the contribution of Facebook in supporting learning communities worldwide.

Facebook for Education: Indian Central Board of Secondary Education (CBSE)

Facebook partnered with CBSE to provide Digital Safety and Online Well-being courses along with augmented reality curriculum for teachers and students. This was CBSE’s first attempt to introduce an augmented reality curriculum.

- Helps students express their understanding and explore different perspectives by augmenting the real world.
- **Phase 1**: Trained 10,000 teachers to create these effects.
- **Phase 2**: Include over 30,000 students who will undergo the same training for 3 weeks to learn how to use Spark AR Studio that augments the real world through camera effects.

![Facebook for Education: Indian Central Board of Secondary Education (CBSE)](image)
28

FIGURE 3.2.2
Teacher and Student Communities: Department of Education Gujarat, India

Teachers and students came together for strategic teaching and learning.

- The Department of Education provided an 8-week-long curriculum called 'Study from Home' through Workplace to all the teachers and then the teachers created over 3200 WhatsApp groups with students to share the curriculum and educate more than 3.5 million children across the State of Gujarat.

This is an example of how communities of practice starting with the educator going to the doors of learners are combining with Workplace to bring scale to operations.

3 SCHOOL LEADERSHIP TRAINING
Bangladesh Department of Primary Education

The Ministry of Primary and Mass Education Bangladesh, mandated that all government schools use Facebook groups as the primary platform for exchanging curriculum and progress during the pandemic.

FIGURE 3.2.3
School Leader Training: Bangladesh Department of Primary Education
TEEN WELLBEING
Guides on Instagram
Due to school closure and lesser time with friends many students are struggling with mental health problems. Guides is a tool introduced on Instagram as a new way to access mental wellness content, created by mental health experts, content creators and organizations.

CERTIFICATION COURSE
Digital Marketing Skills
Facebook offers a program that includes different resources like, in-class presentation materials, case studies etc, which culminates into a certification in Digital Marketing skills indicating that students are prepared to serve their local communities.

This use of such collaborative platforms is likely to continue post-COVID-19 as well.

FIGURE 3.2.4
Teen Well-being: Guides on Instagram

FIGURE 3.2.5
Certification course: Digital Marketing Skills
Session 3.3  
Journey of three interventions in TPD: The evolution of RTICT

Anusha Ramanathan  
Centre for Education Innovation and Action Research,  
Tata Institute of Social Sciences, India

This presentation focused on the journey of three interventions in Teacher Professional Development at the Centre for Education, Innovation and Action Research (CEIAR) in Tata Institute of Social Sciences (TISS) and focused on insights gleaned from the COVID-19 intervention phase.

A robust INSET design for CPD needs to be informed by certain key principles:
- Practice-based
- Relevant to teacher contexts
- Focused on the social nature of learning
- Sustainable
- Transformational

This belief guided the team’s offering to enhance teachers’ practice and teacher agency by:
- Adopting a learning-with iterative approach
- Ensuring opportunities for reflection
- Enabling teachers to nurture active learning spaces and work with local ecosystems
- Focusing on collaboration, authentic learning and learning from mistakes

FIGURE 3.3.1  
The Evolution of RTICT
The Reflective Teaching with ICT (RTICT) intervention traces its roots to two award-winning action research projects that highlighted the need for an offering

- Grounded in practice
- Enabling teachers to discuss, share experiences and strategies
- Developing active communities of practice (CoPs).

**The RTICT case study showcases:**

- Needs of teachers and teacher educators to find solutions to cope with online and remote learning during a long lockdown
- Need to offer a variety of courses in a modular fashion that teachers can choose to opt for based on interests, convenience
- Leverage offered by MOOC platforms, such as TISSx, to adapt courses rapidly change components of the face-to-face engagement sessions to the online mode using webinars to supplement the learning
- Need for mobile-based apps such as the TISSx App enabling teachers to access courses since cellphones are often the only device available to access the internet

**Learner feedback informs future course offerings to focus on**

- Quality content, especially videos and case studies
- 'Active learning' formats with assignments and discussions
- Opportunities for reviewing peer work and self reflection
- Robust engagement in Communities of Practice (CoPs)
- Flexibility in completing the courses
- Direct connect to University faculty
- Online platforms such as Telegram to share in a safe space.

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**FIGURE 3.3.2**
The post COVID-19 scenario:
Teachers moving from a no-tech use to producing content

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**The Post Covid-19 Scenario**

- First offered in select states in blended model
  - Assam, Chhattisgarh, Himachal Pradesh, Jharkhand, Mizoram, Rajasthan, Telangana, West Bengal
  - 1136 schools, 90326 students, 5939 teachers. Of the 387 KRP's who undertook certificate courses, 310 have earned course certificates as of June 2019.

- Trialled online modular mode of select courses in November 2019
  - 55 teachers enrolled.
  - Blended Model still continued for cohorts.

- MOOC Offering of Select Courses post Covid-19
  - 892 teachers enrolled in June 2020.
  - Pass rate over 50%
The impact of the intervention on teachers has seen

- Increasing motivation to develop practice
- Sustained sharing by teachers of their learning with other teachers
- Commitment by teachers to provide active learning opportunities in their classrooms through research projects, use of discussion, etc
- Increasing use of technology and OERs
- Zest for more CPD

CHALLENGES AHEAD

A key is to bridge the digital divide to make learning more inclusive. Select solutions proffered by teachers based on their practice include

- Using postal services
- Accessing CSR for better student reach
- Activating the community to co-teach
- Supporting parents in facilitating learning
- Changing class timings to when students can access their working parents’ devices

NEXT STEPS

These ideas are now being taken to Bhutan and African nations as a part of the KIX-GPE funded program, scaling proven innovations relevant to pre-service and newly qualified teachers.
Session 4
Use of ICT for enhancing inclusion of the marginalized

Literature review presented by the moderator

- Digital communication offers children with disabilities a way to express themselves, make their own choices and participate in decisions affecting them (UNICEF, 2017).

- Universal Design principles should inform the design and development of new tools as well as pedagogy for use of ICT in education for children with disabilities (UNESCO, 2011).

- Access to appropriate ICTs in education is hindered by various barriers: physical cognitive, content, didactical and financial (UNESCO, 2014).

- Disability and access to assistive technology are often heavily gendered, and may also reflect other inequities such as wealth, age, ethnicity or geographical factors (MacLachlan et al, 2018, p.458).

- Root causes of digital gender divide include hurdles to access, affordability, education (or lack thereof) and lack of technological literacy, safety issues as well as inherent biases and socio-cultural norms that lead to gender-based digital exclusion (OECD, 2018).

- Connectivity can be a game-changer for some of the world’s most marginalized children, helping them fulfil their potential and break intergenerational cycles of poverty (UNICEF, 2017).

- Lack of access to computers and internet hampers effective use of OERs by marginalized (UNESCO, 2019).

REFERENCES


Session 4.1
Use of ICT for enhancing inclusion of the marginalized

Madhu Parhar
Director,
Commonwealth Educational Media Centre for Asia,
Commonwealth of Learning

This talk focused on the work done by Commonwealth of Learning (CoL), an intergovernmental organisation, created by the Commonwealth Heads of governments in 1987 to promote access to quality lifelong learning and learning opportunities for achieving sustainable development goals.

CoL established Commonwealth Education Media Centre for Asia (CEMCA) in 1994 in response to the needs of the Asian countries for the better utilisation of resources for open and distance education.

CEMCA is today working in 8 Asian countries, Bangladesh, Brunei, Malaysia, Maldives, India, Pakistan, Singapore and Sri Lanka with the objective of cooperation and collaboration in the use of electronic media resources. This work is under three major heads.

1. COURSES
   • Certificate courses on Capacity Building and Professional Development of Teachers and Teacher educators for successful implementation of inclusiveness has 700+ learners enrolled. All the textual and video material for this course is in the repository maintained by the Open University, working in collaboration for the development of this course.
   • Another course on Tailoring and Dress Designing running for the last three years which has provided livelihood to almost 80% of the 5000 learners the majority of whom are women.
   • Another course on the Handset Repairing has been jointly prepared with the Telecom Sector Council of India. The material for the course is available on YouTube.
   • CEMCA has also been developing courses using ICT for inclusion. It has 11 agMooc, 32 technology-enabled learning, and 17 technical skill development courses.
   • CoL has collaborated with almost 11 open and regular Universities to create MOOCs on web application development, mobile application, animation, and multi-media that can help to earn livelihoods. These courses have been taken by learners from rural communities, women, and other marginalized groups.

2. USE OF MEDIA
   Under skill development, CEMCA has created courses in text and video format for the bamboo craft to move away from plastic. CEMCA is also utilising community radio for this course. It has created audio programs that are broadcasted in regional languages. CEMCA aims to develop entrepreneurship and technical skills through this course.
   Almost 10,000 artisans, mostly rural, from 9 states of India including all the North-Eastern states where bamboo grows in abundance have enrolled for this course.
CAPACITY BUILDING FOR INCLUSION

CEMCA does capacity building for various trainees under different themes by utilising open-source software.

- Course on Academic Counselling for ODL learners that reaches a large number of teachers and teacher educators such as those from National Institute of Education, Maldives.

CoL is also involved in a project called ‘Girls Inspire’. The initiative is to use ICT to provide distance learning to the most vulnerable girls and young women. To ensure that they have access to educational opportunities for skill development, CoL is using a new low-cost innovative device called Aptus which caters to low broad connectivity.
Session 4.2
Education and empowerment: Digital Empowerment Foundation

Osama Manzar
Founder & Director,
Digital Empowerment Foundation

The talk presented an overview of the work done by the Digital Empowerment Foundation (DEF), a 20 year old organization, to live up to its motto to bring education to the marginalized but from an experiential perspective using ICT. The mission is to reach those who do not have devices and are not connected and empower them to live life on a day-to-day basis in the digital world. This includes access to educational content, use of computers and mobiles to earn livelihood, access banks, and access entitlements.

There are four areas in which DEF works for Education and Empowerment:

1. **Digital curriculum development**
   - Curriculum is experiential
   - Curriculum focuses on people lacking reading and writing skills but are aurally knowledgeable and well-informed
   - Emphasis is on learning to use digital tools for information, livelihood, financial and entrepreneurship requirements

2. **Digital literacy and skilling**
   Making learners proficient in use of digital tools to achieve a larger purpose
   - During COVID-19, a STEM learning project for girls reached 15,000 girls at home through videos on experiments, WhatsApp and so on.
   - Similarly, for learning English, digital tools are employed

3. **Infrastructure and connectivity**
   DEF works on providing connectivity and building infrastructure to reach the most marginalized. ‘National Digital Literacy Mission’ program with the Government of India that benefitted millions to become digitally literate.

   With 3 million elected members to the Panchayats or village council who look after village administration, but are not digitally literate, DEF plans to develop pertinent content and curriculum for such stages in life.

   At the same time, DEF works on providing required infrastructure. Around 320 million children go to public schools in India and 70-80% of such schools are in rural areas that do not have proper labs or are not open to access.

   DEF through its digital enabled centers creates a culture of accessing digital content. The learners then take this culture to their household to access their own rights and entitlements. For example, in India, the poor cannot get ration (basic food supplies) unless they know how to get their biometric checked or know how to check their details online.
Training and capacity building

DEF looks at every digital tool as an enabler useful to access opportunities online. It has provided digital training to the weaving community comprising 2000 artisans who wanted to do business online, especially in COVID-19 times. It has worked on mobile literacy of 2 million women and has also built digital skills of 5000 rural women to make them entrepreneurs.

COVID-19 DIGITAL EMERGENCY RELIEF PROGRAM

During COVID-19 times, migration has been a huge problem. DEF has started Digital Daan, a crowd sourcing initiative, under which old phones and devices are collected, refurbished and supplied to poor rural people who don’t have access. The attempt is to democratize giving of old devices and using them for a larger purpose. DEF is also building a digital academy which is going to be an online destination for digital skilling, training, capacity building and curriculum and development for rural communities.
Session 5
Leveraging ICT for skills anticipation and bridging the gap between education/TVET systems and the labour market

Literature review presented by the moderator

A global labour income loss of US$3.5T has been incurred as 94% are employed in countries with workplace closures due to COVID-19. There is a critical degree of labour underutilisation as one-fifth of young people worldwide (pre-pandemic) are not involved in employment, education, or training.

In this age of disruptive technologies, integration of ICT in TVET systems has proven to have the potential to enable the unemployed & underemployed youth (and other workers) acquire the necessary academic and occupational skill set. (ILO, 2020)

Successful Strategies identified for skill anticipation & bridging the education - labour market gap

- Job matching & micro-credentialing using Blockchain enables an efficient recruitment process for employers & employees alike.
- A dynamic labour market information system developed using AI & Big Data helps workers & students keep up with the fast-changing skill requirements of the market. Flexible access to Lifelong learning systems (OER & MOOCs) helps workers stay competent.
- ‘Earn while you learn’ apprenticeships, and granular level credentialing of skills avail immediate business value & enables social mobilization.
- Through Teacher development, pedagogy needs to be enhanced with ICTs using an integrated instructional system.
- A Student-centred learning environment with a strong industry-focused learning needs to be fostered, via a combination of content & process-oriented delivery.
- Harnessing the power of hybrid learning sites through distance & blended learning models, the gap between supply and demand needs to be bridged using an ICT-enabled career guidance and job-matching system.

REFERENCES

Session 5.1
Use of ICT in the TVET sector of Sri Lanka

Janaka Jayalath
Director General, Tertiary and Vocational Education Commission (TVEC), Sri Lanka

This talk presented an overview of the crucial work being done to bridge the gap between TVET and the education systems in relation to the labour market in Sri Lanka. It highlights the efforts needed to fill the gaps between the labour market and demand-supply side. There are four areas in which DEF works for Education and Empowerment.

Brief Introduction to the Education System in Sri Lanka

In 2004 Sri Lanka introduced the National Vocational System through a skills development project. Lateral linkages were developed to nurture different pathways to obtaining a qualification in the TVET system.

FIGURE 5.1.1
An Example of the Education System in Sri Lanka: Vocational Stream
Key objectives of the programme

- Provide qualification for ones who are currently practising jobs
- Incorporate informal labour market into the mainstream
- Facilitate progression to a higher degree qualification
- Facilitate provision for job opportunities by connecting professional organizations with the labour market

Emerging practices in TVET blended learning

During the closure of institutes due to the COVID-19 pandemic, digital learning achieved 50-60% coverage. The teaching community succeeded in establishing digital connectivity for various learning processes during the crisis.

The methods include:

1. Competency-based training is the centre based training provided by the mainstream TVET system
2. Recognition of prior learning provides qualifications for people in the industry by recognising their current abilities, skills, knowledge, and attitudes.
3. Enterprise-based training is a dual training through which the student is attached with an enterprise for practical learning, and an institute to garner theoretical knowledge.
4. Apprenticeship-based training enables learning wholly in industry.

These four categories are encouraged in the Skills passport approach, which is entirely a digital online system, that can be accessed at www.nsp.gov.lk.

The state has also collaborated with the Employers Federation of Ceylon for managing the certification process by verification of experience using system records. Once issued, the digital smart card being QR code enabled, could be verified from anywhere using a mobile application.

Benefits to NVQ holders

- Recognize and to qualify skills obtained, especially through informal learning
- Assess and certify skills and experience obtained through overseas employment
- Promote entrepreneurship and higher learning
- Promote upward mobility in employment, leading to better wages and working conditions
- Better career development opportunities

Benefits to employers

- Recruit the right person for the job with specific skill set
- Retain employees for longer periods - enable efficient recruitment

Skill recognition through skill passport

Sri Lanka aims to provide its returning migrants employment. Since most of these workers do not have qualification, there has been a need to devise a mechanism to recognize prior experience and integrate them with the labour system.
Engaging with employees to identify up-skilling needs through appraisals
Support employees career development - motivated employees increase productivity

Benefits to the Government
Assist the government with long term skills planning for the economy; facilitating the easier matching of skills to opportunities for future employment creation

Track employability of the NVQ holders and Up-to-date LMI Database
Streamline migrant workers and returnee workers by skill-type, and bridge the gaps in the labour market both locally and overseas.
Help attract migrant returnee workers to industries such as construction, which are currently facing high demand, with no local workers to bridge the gap.

Session 5.2
Blockchain and AI for the TVET Sector
Timothy Miller
Founder & Managing Director, Certif-ID

This talk focused on the pressing challenges that TVET is facing, particularly those concerning the outcomes that TVET delivers.

An overview of the challenges faced by TVET
Desire to derive social mobility creates a disproportionate supply-side push
TVET training and assessment is more complex than academia
Qualifications may have no cross border value

The mechanics of TVET
To bring equitable economic growth, which drives investment and creates jobs.
To enable people to earn while they learn.
To provide opportunities to move into higher education.
Certif-ID works towards recognition of prior learning, as well as formal recognition of skills passed down intergenerationally, granular credentialing, credit accumulation and other important links that drive the industry’s accreditation standards. This leads to
Enabling access to aspirational careers and learning pathways
Making the skills landscape visible to non-local recruiters and investors
Enabling geographic mobility and filling the skills gap that has emerged all over the world.

Roadblocks include:
The complexity and cost of implementing training centres
Developing assessment structures and bridging the lack of transparency & trust within the TVET systems.

KEY COMPONENTS OF CERTIF-ID
1. Work with vocational education institutions to digitise the process of certification
Digitizes all the data the certificate of credential encompasses, such as the
cost, competencies and skills an individual has, learning pathways, nature of curriculum etcetera.

- Provide transparency and instills trust by using blockchain technology for instant verification of authenticity of data.

2 Support individuals in developing a skill passport

- Enables individuals to get information on their career journey in terms of routes to progress in career, seek digital credentials, record videos, curate interviews and develop a digital profile.

- Provide digital wallet enables the uploading of videos and documents that support one’s abilities and learning achievements both past and new.

- Integrates data gathered across multiple different platforms to provide information on future job requirements.

- Ensures transparency of data enabling recruiters to make faster and better informed decisions as they recruit.

- Provides labour market information to the individual to chart new paths and adopt apt skills.

- Bring consistency in grades by building bridges across qualification frameworks.

- Enables a seamless process of education to employment

- Supports the process of lifelong learning.

With over 30,000 users spanning 27 countries, Certif-ID has been actively working on building the skill component of the platform during the pandemic.

The platform is built on the European Skills, Competences, Qualifications and Occupations (ESCO) framework, which has enabled access to interesting occupational insights. The platform has over 300,000 data points which guide users understand the trends, and equip their journeys.

The digital solutions in unlocking the benefits of TVET include

- Intelligent Skill Matching
- Dynamic Labour Market Information
- Micro-Credentials
- Career Progression
- Dynamic Labour Market Information
- Labour Market Relevance
- Transparency & Trust

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- Micro-Credentials
- Career Progression
- Dynamic Labour Market Information
- Labour Market Relevance
- Transparency & Trust

FIGURE 5.2.1
Mapping Certif-ID and ESCO
Closing remarks
and way forward

Nyi Nyi Thaung
Programme Specialist, UNESCO Bangkok

Mame Omar Diop
Head of Education, UNESCO New Delhi

Within education systems, teachers are the front line workers who are relied on to ensure continuous maintenance of high-quality education during the COVID-19 crisis. The key elements for use of ICT to support teacher capacity development have been identified including:

- Proper facilitation of ICT-supported pedagogy;
- Establishment of virtual teachers for the student community;
- Adaptation or change to suit the evolving need of the teachers;
- Prioritisation of supporting teachers during the digital transformation.

Reaching every child is a realistic goal, however it remains a common challenge globally. Useful information for bridging the digital divide for the remote rural population, students with disabilities, and other marginalised learners have been also shared.

The emerging area of using ICT in connecting education and TVET systems with the labour market has been discussed. An interesting case of skill passports and application of cutting edge technology like blockchain and AI presents us with new pathways to enable learning. The integration of ICT to address the challenges in the education system would be interesting to further explore. Hopefully, continually emerging solutions will support learners in the transition to the labour markets.

The way forward to remain connected and continue to collaboratively work in this space include multiple pathways:

- Participants are encouraged to remain connected to UNESCO Bangkok and Delhi teams, through social media channels as well, to share their ideas and work so that teams can further support them.
- UNESCO, New Delhi in partnership with Facebook India has launched a community of practice for all education stakeholders where they can connect.
- Interest among the participants regarding the TVET issue has been noted and a knowledge hub for discussion about the same will be created.
- South Asian countries would be able to come together to share their knowledge and conduct policy reviews and advocacies for TVET priorities.
- UNESCO can be reached by those interested to develop TVET systems in their countries.
The presentations and content from vSARSIE were rich and traversed diverse contexts. The common thread that bound them all was the commitment to ensuring inclusivity. Many of the initiatives took the scope of ICT in education and focused on far-reaching goalposts such as livelihoods, leadership, mental well being and so on. It was highlighted that the focus of ICT in education needs to address not only the immediate education goals but also the long term improvement of the quality of life.

Ensure sustainability, scalability and a wider community engagement. These qualities have been a hallmark of the multiple projects and programs highlighted by the speakers. All the initiatives sought to be sustainable ventures and not be merely limited to an intervention during the pandemic.

Digital pedagogies have the ability to connect people across spatial or cultural boundaries has been proven by many of the projects mentioned. That the tools and the applications used by the various institutions helped change the educational landscape during the pandemic and will continue to do so is also clear. However, the issue of digital divide becoming a larger challenge to tackle was also a recurring theme.

Movement from traditional modes of achievement to more competency based assessment frameworks of skill development was echoed by the speakers. There is a need to contextualise learning at all levels - be it a child, a teacher or a professional was a recurring theme.

Bridge the digital divide and bring devices to all people and largely to create an environment where the marginalised population rural areas can use digital technology to access education that are aligned with their contexts. There is a strong need to empower women and girls to access resources and education. These imbalances in society need to be redressed.

Increase cross-cultural and multinational collaboration. Many of the speakers frequently alluded to learning from past projects and to achieving targets through partnerships. It is desirable that there be forums such as vSARSIE for regular sharing of knowledge and ways and means be established within the channels to find synergistic partnerships that can be cross-cultural, multinational and inclusive of the marginalised.

Lack of focus on aid for disabled and population with special needs. While there were mentions of the disabled populations in the talks, there was no major activity that was focused on aiding this segment of society. The concern is clearly present, perhaps focused calls for working with the disabled and leveraging technology to help them could be provisioned.

Channels for staying connected was vividly expressed by all the participants. ‘Corridor talk’ communication channels could be established to enable more information flow, especially in this age of physical isolation.
Key Takeaways from vSARSIE 2020

1. Regional dialogues such as the ones at vSARSIE will strengthen learning to cope and respond to the challenges of COVID through thoughtful use of ICT. Education systems need to be resilient to cope with such challenges and realise the transformative potential of education.

2. Equity considerations should guide the design of solutions, keeping the focus on learning, and in relation to that thinking on how technology is best deployed. There is a need for greater investments in pedagogically appropriate content.

3. Strategies and implementations will need to overcome the digital divide in the South Asia region. It is likely that educational inequalities will be exacerbated on account of the pandemic. More investments are required in terms of devices and connectivity.

4. Hybrid solutions and localised innovations will be required in order to overcome the problems of digital divide. Older forms of technology such as radio and TV should be combined with newer forms such as mobile phones and computers.

5. ICT skills of teachers are low and this needs to be enhanced. Teacher interaction is essential for effective learning with ICT. Teachers need to receive support from their management to participate in CPD activities. Building professional communities of teachers that can interact over social media strengthens peer supported learning and motivation.
Participant feedback
An overview

Overall 152 participants submitted feedback for the sessions they attended across the two days.

FIGURE 6.1
Summary of the satisfaction level of the participants

152 responses

The response has been overwhelmingly positive and they have certainly exhibited the desire for more such sessions and for longer and more interactive engagement.

FIGURE 6.2
Taking the learning forward

152 responses

The most encouraging sign is that the participants have overwhelmingly stated that these sessions were helpful and that they would implement the learnings in their own work contexts.
### Agenda

**DATE:** 15-10-2020  
**VENUE:** ONLINE (ZOOM/TEAMS)

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker/organization</th>
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</table>
| 12:30 – 12:35 | Welcome Remarks                               | Shigeru Aoyagi  
Director Asia and Pacific Regional Bureau for Education, UNESCO Bangkok            |
| 12:35 – 12:40 | Opening Remarks                               | Mr. Yoshiaki Ishida  
Director for International Strategic Planning, Office of the Director-General for International Affairs, Ministry of Education, Culture, Sports, Science and Technology (MEXT)/Deputy Secretary-General, Japanese National Commission for UNESCO |
| 12:40 – 12:55 | ICT Keynote Presentation                      | Anantha Kumar Duraiappah  
Director UNESCO Mahatma Gandhi Institute of Education for Peace and Sustainable Development |
| 12:55 – 13:00 | Overview of Project & SARSIE 2020             | UNESCO Bangkok                                                                      |
| 13:00 – 13:45 | SESSION 1                                     | Presenting countries:  
1. Bhutan, MOE  
2. Nepal, MOEST  
3. Maldives, NIE  
4. Bangladesh, MOE  

**SESSION 1**  
National Policy and resource planning for success in ICT in Education.  
- Overview and country presentations  
- Highlight how national ICT policies have played a role in responding to COVID-19  
- Q&A (10 min)

| 13:45 – 14:30 | SESSION 2                                     |  
1. Fengchun Miao  
Chief, ICT in Education Unit, UNESCO Paris  
2. Ritesh Agarwal  
Lead - Growth and Partnerships, Educational Initiatives, Mindspark  
3. Frank van Cappelle  
Education Specialist, UNICEF ROSA  
4. Max Ehlers  
Associate IT Officer, UNESCO-UNEVOC International Centre for TVET |

**SESSION 2**  
Using ICT to bridge the digital divide, overcoming learning disruptions and promoting innovation.  
This session focused on international best practices for the use of ICT/EdTech for improving access to education & training, and ensure continuity of learning during COVID-19  
- Highlight and share COVID-19 specific examples  
- Q&A (10 min)

| 12:40 – 12:55 | Wrap up of the sessions                       | UNESCO New Delhi                                                                  |
### South Asia Regional Symposium on ICT for Education

**DATE:** 16-10-2020  
**VENUE:** ONLINE (ZOOM/TEAMS)

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Speaker/organization</th>
</tr>
</thead>
</table>
| 12:30 – 12:35 | Introduction  
Review of Day 1 and Brief  
Introduction to the Day 2 Program | UNESCO Bangkok                                             |
| 12.35 – 12.40 | **SESSION 3**  
Using ICT for development of teaching/training resources and aides and preparing teachers/trainers post COVID-19.  
This session focused on use of ICT/mobile technology for creating engaging teaching aids and teacher training/development; also showcase how teachers are being supported to tackle an increasingly digital/virtual teaching environment.  
• Highlight and share COVID-19 specific examples  
• Q&A (5 min) | 1. Riina Vuorikari  
Research Fellow, European Commission  
2. Adam Seldow  
Director of Education Partnerships, Facebook  
3. Dr. Anusha Ramanathan  
Tata Institute of Social Sciences |
| 13:15 – 13.45 | **SESSION 4**  
Use of ICT for enhancing inclusion of the marginalized  
This session focused on various uses of ICTs for ‘building back equal’ to promote education and training of girls, remote rural populations, persons with disabilities and those with special needs  
• Q&A (5 min) | 1. Madhu Parhar  
Director, Commonwealth Educational Media Centre for Asia, Commonwealth of Learning  
2. Osama Manzar  
Founder & Director, Digital Empowerment Foundation |
| 13:45 – 14:25 | **SESSION 5**  
Leveraging ICT for skills anticipation and bridging the gap between education/TVET systems and the labour market  
This session focused on cutting-edge technologies applications and best practices in skills anticipation, enabling entry into and transition within the labour market, particularly in light of COVID-19.  
• Q&A (5 min) | 1. Janaka Jayalath  
Director General, Tertiary and Vocational Education Commission, Sri Lanka  
2. Timothy Miller  
Founder & Managing Director, Certif-ID |
| 14:25 – 14:35 | **Closing Remarks and Way Forward**  
• Summarise take away points and closing | Summary: Nyi Nyi Thaung, Programme Specialist, UNESCO Bangkok  
Closing: Omar Diop, Head of Education, UNESCO New Delhi |
Annexure 2
Speaker profiles

ANANTHA DURAIAPPAN

Anantha Duraiappah is Director of UNESCO MGIEP since 2014. A science-policy pacesetter, with over 33 years’ experience, he now plays a key role in positioning UNESCO MGIEP as a leading research institute on education for peace, sustainable development and global citizenship. Anantha is presently focusing on strengthening the science-policy guide in Education by researching and exploring how the neurosciences of learning can contribute to developing emotional & intellectual intelligence through innovative digital pedagogies. He received his PhD in economics specialising in mathematical and computational modelling from the University of Texas in Austin, USA. Dr. Duraiappah has authored numerous peer-reviewed books and journal articles and presently sits on the editorial boards of a number of international peer reviewed journals. He is a Fellow of the World Academy of Arts and Sciences (WAAS), a Fellow of The World Academy of Sciences (TWAS) and a visiting Professor at the University of Tokyo, Japan.

DR. FENGCHUN MIAO

Dr. Fengchun Miao is the Chief of the Unit for Technology and Artificial Intelligence in Education at UNESCO, Education Sector, Headquarters in Paris. He is leading programs in areas of ICT in education policy development, AI and education, digital skills development for teachers and students, Open Educational Resources (OER), mobile learning, and future e-schools. He is also in charge of UNESCO Prize for the Use of ICTs in Education. Highlights of his achievements include the launch and continuous organization of Mobile Learning Week for 9 years, the development and adoption of Qingdao Declaration on leveraging ICT to achieve SDG 4 and Beijing Consensus on AI and Education. He brings with his experiences of supporting more than 60 countries directly for the development of national ICT in education policies and OER policies. Before joining UNESCO, Dr. Miao was the Director-General of the National Research Centre for Computer Education, Ministry of Education, China. In that capacity, he was responsible for the development of national ICT in education policies and ICT curriculum standards for students, and managing the National Association for the Use of ICT in K-12 Schools of China.
RITESH AGARWAL
Ritesh Agarwal is responsible for Growth and Partnerships at Educational Initiatives. He is passionate about solving for learning outcomes in government schools. He currently leads the Growth and Partnerships function at Educational Initiatives (EI), whose vision is to “create a world where every child is learning with understanding”. Ritesh has a rich experience of working with governments, institutional funders and other key stakeholders within the social sector. He is well versed with evolving trends in assessments, educational technology, policy and developmental finance. Prior to EI, he worked with ConveGenius as the AVP and has been a Gandhi Fellow with Kaivalya Education Foundation, Young India Fellow with Ashoka University and an Anubhav fellow with UChicago. Originally from Darjeeling, he graduated with a degree in History from St. Stephen’s College, University of Delhi, India.

FRANK VAN CAPPELLE
Frank van Cappelle, is Regional Education Specialist at UNICEF’s South Asia office, has been working in the education sector for 15 years, for UNICEF and prior to that for UNESCO. He is the focal person in the region for distance learning during COVID-19, education in emergencies, monitoring learning continuity, and gender equality in education, and is a Steering Committee member of the UN Girls Education Initiative.

MAX EHLERS
Max Ehlers is Association Office IT at UNESCO-UNEVOC. He holds a postgraduate degree in political science, but has always had a passion for IT, networking and web technologies. After graduation, he started working as IT specialist and project manager for various IT and multimedia companies in Germany before joining UNESCO-UNEVOC in 2002. He leads the IT & Knowledge Management team, which is responsible for the online communication and web services of the Centre, as well as its technical infrastructure. In recent years, Max has been the focal point for issues related to the use of ICT and digital media in and for TVET. He believes that education can be made more accessible by creating and sharing Open Educational Resources (OER), as the UNESCO Recommendation Concerning Open Educational Resources (2019) puts forward, which calls for the creation of “a global pool of culturally diverse, locally relevant, gender-sensitive, accessible, educational materials in multiple languages and formats.”
DR. RIINA VUORIKARI

Dr. Riina Vuorikari is Research Fellows, European commission JRC. She joined the European Commission's in-house science service (DG JRC) in July 2013. She contributes to research and policy support in the field of ‘human capital and employment’. Her work focuses on Digital Competence for citizens, teacher professional development and she enjoys dealing with issues related to the adoption of new technologies and innovation in education and training. Her recent report deals with Emerging technologies and the teaching profession. Dr. Vuorikari has degrees in education (M.Ed in 1998 in Finland) and hypermedia (DEA in 1999 in France). Her PhD, which was completed in 2009, is from the Dutch research school for Information and Knowledge Systems.

DR. ADAM SELDOW

Dr. Adam Seldow is Director of Education Product Partnerships at Facebook where he contributes to building learning communities worldwide. Dr. Seldow taught high school mathematics and led technology in US school systems. He earned his undergraduate degree from the United States Military Academy at West Point, and his masters and doctoral degrees in education policy and leadership from Harvard University.

DR. ANUSHA RAMANATHAN

Dr. Anusha Ramanathan leads TPD English and coordinates the academic aspects of TISSx, an Open edX based MOOC platform. She teaches Language Education, Assessment and Academic Skills courses across MA Education, BEd-MEd, MA Education for Teacher Educators from Afghanistan programs. She also designs, develops and facilitates Language Education and Mentoring Courses for Reflective Teaching with ICT. Her research is in the areas of language and teacher education. Anusha has over 17 years of teaching experience at UG and PG levels. She teaches MA English, Mass Media and MBA students across colleges of the University of Mumbai and autonomous colleges. Over the years, she has also worked as a research assistant, course coordinator, content writer, editor, teacher trainer and corporate trainer through her career. Her expertise lies in English Language Teaching, English Literature, Assessment and Evaluation, technology-based learning and Teacher Professional Development.
PROF. MADHU PARHAR

Prof. Madhu Parhar Director, Commonwealth Educational Media Centre for Asia (CEMCA). She is an expert in Open and Distance Education, specializing in Instructional Design and Online Education. She has worked in this area for 20 years as a faculty, administrator and researcher. Before joining Commonwealth Educational Media Centre for Asia (CEMCA), she worked as a Professor in Staff Training and Research Institute of Distance Education, Indira Gandhi National Open University, New Delhi, India. Before that, she worked in the Institute of Advanced Studies, Jamia Millia Islamia in the Department of Teacher Education Training. She has held a number of roles in IGNOU and in other institutions including Wawasan Open University, Penang, Malaysia. She has contributed several articles and research papers in these areas. She has co-edited several books including Open and Distance Education, Indian Education: Development since Independence and Education in India: Dynamics of Development. She was consulted by UNESCO on various distance education projects.

OSAMA MANZAR

Osama Manzar is Founder director, Digital Empowerment Foundation. He is a social entrepreneur, author, columnist, impact speaker, angel investor, storyteller, mentor, and sits on several government and policy committees in India and on international organizations working in the areas of Internet access, digital inclusion and Misinformation. He is on a mission of eradicating information poverty from India and the global south using digital tools through Digital Empowerment Foundation, an organization he co-founded in 2002. With over 25 years of experience, Osama has worked in the areas of journalism, new media, software enterprise before he established DEF to digitally empower the masses (so far 12 million) with a footprint of 700 locations and 9000+ digital foot soldiers across 130 districts in 24 States. A British Chevening Scholar and an International Visitors Leadership Program Fellow of the US State Department, He has co-authored more than six books and is a Member of Advisory Board for Alliance for Affordable Internet (A4AI); Member of Media & Information Literacy Experts Network (MILEN) and Member of the Board/Advisory at various organizations.
JANAKA JAYALATH

Janaka Jayalath is Director General, Tertiary and Vocational Education, Sri Lanka. Mr. Jayalath has started career as an apprentice at Sri Lanka Broadcasting Corporation and then worked as a Technical Assistant at National Television Corporation. Later he worked at Sri Lanka Telecom Corporation as the Manager (Systems) and the Project Manager for two Asian Development Bank (ADB) projects in TVET sector development in Sri Lanka. Later he worked as the Director (Information Systems) at Tertiary and Vocational Education Commission (TVEC), the apex body for the Technical and Vocational Education and Training (TVET) sector in Sri Lanka. He is currently the acting Director General of the TVEC. He has published several research papers and authored a book chapter called "Using ICTs and Blended Learning in Transforming TVET", which is a joint publication of UNESCO-COL focusing on best practices in TVET. Further, he has been instrumental in declaring "World Youth Skills Day" and continuously involved in digitization of TVET.

TIM MILLER

Tim Miller is Co-Founder and Managing Director Certif-ID. He has worked around the world in diverse roles in the field of training and development. He has extensive experience in the Indian and Asia Pacific markets, built through many years of working in India, Japan and the UAE. An enthusiastic, driven thinker with a global perspective and diversified international work experience covering emerging technology, digitalization of learning solutions, management system certification, product certification and training, across 25 countries. His focus on breaking down fundamental constraints by applying technology in innovative ways has led him to create a blockchain-powered educational platform, bridging the gap between ‘New Economy’ skills and employment prospects. Currently based in Germany, Tim is originally from the UK and is a graduate of the University of Bath.
This report captures the proceedings of the 2nd virtual South Asia Regional Symposium on ICT for Education (vSARSIE) organized by the UNESCO Asia and Regional Bureau for Education and the New Delhi Office as an online symposium on 15 and 16 October 2020.

vSARSIE provided a platform for policymakers, field experts and practitioners to share knowledge and experiences, and reflect on future actions for building more resilient national education systems to cope with disasters or emergencies especially in light of the massive learning disruptions caused by the COVID-19 pandemic.

The two-day agenda featured five technical sessions that delved deeper into several critical issues. These included reviewing the progress made by Bangladesh, Bhutan, Maldives and Nepal in developing national ICT policies and master plans, use of ICT to overcome the digital divide including the use of open educational resources (OERs) in advancing technical and vocational education as well as the applications of ICT in teacher professional development, enhancing inclusion and for better skills anticipation to bridge the labour market gaps.

This report highlights challenges and possible solutions for scaling up quality distance learning programs including the need to shift focus from a human capital approach to a human flourishing one, the urgent need to mainstream Social and Emotional Learning (SEL) in education and why equity concerns should be front and centre of any digital learning strategy. It highlights how low and no-tech approaches can be used equally effectively to bridge the learning gaps, and how schools could be prepared to be ‘technology ready’ through a combination of content, technology, and human infrastructure. Session summaries also capture innovative case studies and approaches on personalized adaptive learning tools that can scale up quality education using data analysis and machine learning capabilities, using social networks and teacher-student communities as a platform for teaching learning processes, combining the use of community radio with technology enabled skill development programs to improve local livelihoods and how blockchain and artificial intelligence (AI) applications are supporting intelligent skills matching, micro-credentials and career progression.

While the resource materials used during the symposium including the session recording and presentations are available online for future reference, it is hoped that this summary report will provide a concise and crisp overview of the symposium proceedings to a range of interested stakeholders including government agencies, practitioners, academia and educational institutions.