Flexible Digital Learning, Micro-Credentialing and Assessment Practices in the Commonwealth

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Greetings from the Commonwealth of Learning, Canada. I am thankful to the organisers for the invitation to speak at this 48th International Association for Educational Assessment (IAEA) Conference organised by the Caribbean Examinations Council. I am grateful to Dr Edwardo Ali for his kind consent to allow making this presentation online. This is also possible due to a wider availability of technology and also thanks to the planning committee that decided to hold this conference in a hybrid mode. In the beginning a disclaimer from me: I have not used GenerativeAI to prepare the presentation, though I have reused some slides from our previous works at COL.

For those uninitiated to COL, we are an inter-governmental organisation established by the heads of the Commonwealth in 1987 with headquarters in beautiful British Columbia.

Our mandate is to “help Commonwealth governments and institutions use technologies to improve and expand access to education and training.”

We focus on promoting learning for sustainable development. COL work with 56 governments and educational institutions in the Commonwealth to improve economic growth, social inclusion and environmental conservation using open and distance learning.

Sustainable Development Goal 4 serves as the guiding force for all our works that support quality lifelong learning for all.

My plan today is to make the presentation under four sub-themes: Context of digital learning; Assessment practices; Age of artificial intelligence, and the future.

First, the context of digital learning.

In the Commonwealth there are 33 single mode distance teaching universities. While many universities use distance and online technologies (referred normally as dual-mode institutions), the number of single mode open universities are more in Asia. With the digital/eUniversities this number goes to 36.
Overall, these open universities cater to 3.4 million learners. Comparing data with COL’s previous report in 2017, there is a decline of over 1 million learners. Can this decline in student numbers be due to the increased number of players in this space? Another significant trend has been the adoption of greater flexibility with OUs offering face-to-face, online and blended learning, making the transition from single- to multi-modal delivery.

Covid-19 forced most governments and educational institutions to adopt distance and online learning. As of now over 200 million learners have registered in massive online courses. More and more universities are offering online courses, and there is a greater acceptability of online learning as a means for continuous professional development.

There are also positive perceptions of quality of online courses. A study in the UK during the Covid-19 revealed that 68% of students rated the quality of online digital learning as ‘best imaginable’, ‘excellent’ or ‘good’.

Recent UNESCO data shows that out of 141 countries reported, 108 countries have national plans for supporting and promoting digital learning.

This is also aligned with the increasing connectivity around the world. While there are regional disparities as well as urban-rural divide, globally 5.3 billion people (around 66% of users) are online.

However, the connectivity in Africa is about 30% in contrast to G20 countries at 74%.

Prior to the Covid-19, digital readiness for learning was low even in a country like USA. A Pew research report indicated only 17% of adults as digitally ready --they are active learners and confident in their ability to use digital tools to pursue learning. Lack of digital education skills for learners to effectively use digital tools for learning is a key challenge, and at COL we are trying to address this through our Commonwealth Digital Education Leadership Training in Action (C-DELTA) programme.

A recent report from Brooking indicated that African countries face increased digital skills gap in comparison to G20 threshold. The graph on the screen indicates that tertiary GER is the digital skills indicator that is farthest away from the G20 threshold (indicated by the vertical line) for most countries compared to other indicators.

Global participation in tertiary education doubled from 19% to 40% between 2000 and 2020, with the largest expansion in South and West Asia and East Asia and the Pacific where the numbers of students grew by more than 200% and 280% respectively. The gender parity in tertiary education shows that globally, there is 113 women enrolled in tertiary education for every 100 men.

Access to education is most of the times decided by the cost of learning resources. In the USA, 65% students do not buy textbooks because of high costs (USD 1200 annually). In Malaysia, 76% do not buy textbooks because of high costs. A study commissioned by COL revealed that textbooks cost per year vary between 125 to 340 USD for many Commonwealth countries.

Recognizing the cost of learning materials and to reduce the burden on the learners, countries like the USA and Canada have active zero text-book programmes. At the BC Campus in Canada, reports
indicate savings of over 20 million CAD by students in 41 participating institutions due to adoption of open educational resources.

The Commonwealth is celebrating 2023 as the Year of Youth. 1.5 billion people aged between 15 and 29 live in Commonwealth countries facing youth unemployment rate above 18% which is higher than the global average of 15%.

According to International Labour Organization data from 2019 and 2020, due to limited education and employment opportunities, about three out of every ten young people in the Caribbean are not in school, employment, or being trained.

At the same time, the future of jobs is uncertain. Reports indicate that 65% of children entering primary school today will work in completely new job types that don’t yet exist. This indicates that education systems need to reform to embrace the changing nature of the work environments and include skills training as the key to change the status quo.

Estimates for European countries show that one per cent increase in training days leads to a three per cent increase in productivity, and that the share of overall productivity growth attributable to training is around 16 per cent (CEDEFOP, 2007).

However, there is a skills crisis. A report analysing data from 14 G20 nations shows that countries could forfeit US$11.5 trillion of cumulative growth, which will be about 1% of their GDP every year, if they can’t meet future skills demand.

There is also a skill mismatch amongst the graduates. A Canadian report in 2017 estimated that 12.4 billion dollar loss to GDP in the next 18 years, if the gap between graduation and first job is not addressed.

There is also a completion crisis in higher education. Data from USA shows that only about 56-58% completion rate for four-year graduation programmes within six years.

These trends show emerging training markets as ‘micro-credentials’, which is defined by UNESCO as “a record of focused learning achievement verifying what the learner knows, understands or can do.” It also includes assessment based on clearly defined standards and is awarded by a trusted provider; has stand-alone value and may also contribute to or complement other micro-credentials or macro-credentials, including through recognition of prior learning; and meets the standards required by relevant quality assurance agencies.

Australia has adopted a micro-credential framework that supports outcome-based training responsive to industry-needs. Set within the Australian Qualifications Framework, the duration of courses could be at least one hour and are tailored to support lifelong learning.

Canada, encourages micro-credential that are relevant, accredited, standardised, flexible and assessed for credits.

In New Zealand, there is a micro-credential equivalency register for 5-40 credit courses/training (where one credit is 10 hours of student learning time). It focuses on skill gaps as well as industry-oriented continuing professional development.
Education has not only become digital, but also multi-modal. There is a trend towards convergence of face-to-face and distance and online technologies to support quality education and lifelong learning.

The digital learning scenario is leading to smart education, which Prof. Asha Kanwar has defined through 5Es -- enjoyable, leading to the retention and transfer of knowledge to long-term memory; engaging, with innovative application of technologies; efficient, in terms of just-in-time learning and availability for right resources; effective, in leading to the earning livelihoods and development of responsible citizenship; and ethical, to address issues of privacy, cybersecurity and equity. (Kanwar, 2021)

How are assessment practices aligned to promote smart education? It is said that ‘We assess what we value, and we value what we assess.’ Let me provide a critical overview of the assessment practice and the critical questions for us to reflect.

Interestingly in the UNESCO study in the post-pandemic environment indicated only 30 countries have committed to rethink assessment practices. This is a matter of concerns as we adopt more and more digital learning environment. Business as usual through pen and paper tests is not going to help nations deal with the challenges being faced in the job environment.

We know that there is a graduate premium for higher education. Sometimes, it goes up to 70% for college education. However, Caplan, a Professor of Economics at George Mason University challenges this idea of graduate premium as over estimated based on the theory of signaling -- do degrees provide the right signals to represent abilities? How much of our education is useful in our daily work? Interestingly, the brand of the institution or the degree we have studied signals abilities to employers. Ideally, the transcript provides evidence of the abilities through grades or scores. But are there sufficient linkages to provide enough confidence on the signals? For example, as we grow in career most of the knowledge are tacit and experiential that is not normally taught in any university. The education systems however put emphasis on assessment to signal abilities.

What this assessment is all about? We know that it is about finding out the worth or value of something. For educators, it is about learning. Sometimes, it is also considered as evaluation or examination. Evaluation is used more in the context of programme evaluation, and examination is about conducting a test. So, I prefer assessment, which could be ‘assessment of learning’, ‘assessment for learning’ and ‘assessment as learning’. While the former is summative, the latter is formative, and the last one is about treating assessment itself as a learning process, whereby the learners develop meta-cognitive skills to monitor and reflect their own learning process.

We also know that the purpose of assessment should be to improve, and not to prove. How much of assessment in our educational institutions is formative in nature? As educators and policy-makers we need to adopt both a pragmatic approach and a philosophical approach to provide a balance between formative and summative assessment. However, today, we need to rethink assessment with a new lens. Is our current system doing the job right in the digital learning environment?
As administrators we face a range of issues in assessment practices, especially in distance and online learning contexts. Some of these are how authentic our assessment is, how reliable or valid the assessments are? The number of students in a course also decides the nature of tests used or the frequency of feedback given to learners. Both student and teacher workload are key to designing right type of assessment.

However, it is critical to align assessment to signal future performance of the learners. That requires reimagining assessment as authentic, which requires the learners to apply judgment and innovation rather than memory alone. The tasks must allow the learners to “do” things that simulates the tasks at workplace or in civic or personal life.

While we have been using a range of assessment tests as educators and administrators, in the online learning practice some of these are challenging. We need a change in mindset to design assessment that are realistic and does not put psychological and emotional burden on the learner.

I would urge you to rethink assessment through alternative lens considering both online and off-line modalities. While I will give some examples from my personal experiences, it is important to design assessment in context and focus on the rubrics to help learners mastery skills and competencies.

In 2001, I assisted a team to design a course on resettlement and rehabilitation. We developed a learning management system from scratch and created peer assessment in discussion forum, adopted mixed grading of posts and engagements in discussion forums. We adopted online quizzes and assignments, and the final project was treated as term-tend examination. These assignments and projects reports were also reusable as learning resources for the next batch of students.

In 2008, I conducted an online training programme to teach how to write distance learning materials. Using Wiki tools, we created a collaborative learning environment that provided peer- and tutor-feedback on the material developed as part of the evidence for assessment and certification.

In 2010, we developed and offered a full one-year graduate programme on e-learning using open-educational resources. We adopted skills development using a short-term in-person event that also served as assessment. Student completed term-papers as final summative assessment and defended their work through synchronous video presentation to earn credits. The use of oral test served to identify who did the work as expected and who did not.

Portfolios are important tools to assess and provide evidence of skills gained for individuals. Therefore, e-portfolios have become important way of assessing performance in skills domain. In a distance learning context teaching a practical topic, it was challenging to measure learning outcomes. Therefore, we used portfolio as a practical tool to provide skills training and feedback through formative assessment.

Today, uploading assignments and project reports to LMS is a normal practice and may not be considered as innovation. But, in the early days of online learning, creating an online system to evaluate assignments at scale was an innovation. What is important is to create a system that
allocates assessors automatically without any human intervention and bias. In addition, this also enabled the possibility of creating digital repository of project reports.

Currently, there are a range of technologies and apps that are available for assessment. Many of these are cloud-based and proprietary in nature. It is important to evaluate these in your own contexts to make use of them. There are several implications of using proctorial-based systems and it is necessary that examination bodies consider ethical practices.

During the Covid-19 pandemic, educational institutions used a range of assessment practices, including open book examination, oral assessment, online proctored examination, mobile apps etc. It is important to note that during the pandemic we adopted different standards for assessment. Was it right? If it was appropriate to deploy one method at that time, why we can’t regularise the same?

Moving forward, assessment practices need to think beyond proctorial tests and adopt authentic learning and assessments. Recognition of prior-learning and stacking of micro-credentials will help promote lifelong learning.

No discussion on assessment will be complete in today’s context without talking about artificial intelligence.

In November 2022, OpenAI released ChatGPT, a large language model that can provide information on a range of topic. It quickly became viral reaching one million users in just five days. Currently it has over 175 million users, in comparison Netflix took 3.5 years to reach 100 million. For some people, it is being considered as a game changer for education, while others consider that it could represent a next wave of digital divide in education.

A McKinsey report indicated that teachers spend about 49% of the time directly with students. It is, therefore, artificial intelligence could help them perform their tasks better improving 20-30% of their time for engagement with and supporting student learning.

A recent LinkedIn report on ‘Future of Work’, indicated that AI skills in education is the least in demand and application. It also indicated that generative AI could support 45% of teacher skills to improve productivity. Skills that can be performed by generative AI well are lesson planning, curriculum development, and teacher training.

Despite several benefits, generative AI also have been providing signs for caution. For example, AI grading can be unreliable due to hallucinations and bias implicit in GenAI tools. GenAI detectors often fail by creating false positives or negatives and can penalize non-native English speakers. GenAI tools do not often tell, I do not know, but may provide information that are not necessarily correct. AI tools can be overused or manipulated by students to do their work, impacting learning. Additionally, several copyright and plagiarism related issues have already been raised by scholars.

UNESCO has recently issued guidelines for use of Generative AI in education, and calls for a policy framework that promote inclusion, equity, linguistic and cultural diversity. Any use of GenAI must focus on building competencies of the stakeholders to use the tools appropriately.
Considering the several challenges, there is a call for a pedagogy for the black box. Bearman and Ajjawi (2023) says, rather than seeking to explain ‘black boxes’, there is a need for a pedagogy for an AI-mediated world which reflect the entangled relationships between people and technologies. They recommend “two particular approaches to achieve this: (a) orienting students to quality standards that surround AIs, what might be called the tacit and explicit ‘rules of the game’; and (b) providing meaningful interactions with AI systems.”

That takes me to emphasize that the time to act is now, and the future is here.

Our action in this regard needs to be based on a set of holistic principles or policies that we present as policies for smart education. This will be based on a deeper review and understanding of available infrastructure, curriculum and pedagogy, availability of digital education resources, improved skills and competencies, governance of the teaching and learning system, and effective and efficient management and administration.

Recently at the Global Smart Education Conference Prof. Kanwar presented a framework for smart education as sustainable, meaningful, accessible, resilient, and transformational. In the concluding part of my presentation, I will elaborate on these to provide a holistic framework for change.

Sustainable learning is about achieving learning outcomes at the right age-level, teaching sustainability in curriculum, adopting innovative pedagogy for retention and retrieval, and increasing environmental awareness through policy and practice.

It is essential to focus on curricular needs to shift focus from general education to employment-oriented education, adopting green skills with a focus on STEAM. In a digital learning environment, it is also important to use appropriate pedagogical innovations, including preparing students to learn, blended learning designs, and providing feedback to learners based on AI supported learning analytics.

Learning become meaningful, when we can apply it for something useful say our livelihood. Other important aspects could be focusing on SDGs, supporting global citizenship, and contributing to national development.

To make education meaningful, we must teach employable skills covering the four dimensions: Cognitive, interpersonal, leadership and digital skills.

Accessible learning means providing education for the disadvantages, focus on equity and inclusion, adopting principles of Universal Design for Learning, providing affordable education and fostering open education.

Governments and educational institutions need to commit towards supporting open education by creating digital platforms for education and policies for open educational resources and practices.

Technology can support resilience building in the teaching and learning system. If we do not want to face another closure of education systems, there is a need to focus on creating educational infrastructure that are effective at the time of crisis.
Building capacities of teachers to adapt to the emerging situations fast is key to adopt innovation, and systems must gear all resources to support psycho-social well-being of both student and teachers.

Transformation will be possible by focusing on the four levers identified in a report by McKinsey. Skills transformation will require a mindset change, collaboration with industry, enlarging the vocational track through teacher training and strengthening digital infrastructure by adopting new technologies such as AR/VR.

Transformative learning is the transformation of one’s “basic worldview and specific capacities of the self”; transformative learning is facilitated through critical analysis and empowering learners to be a change agent.

Transformation needs change in practice and adoption of micro-credential framework for teaching and assessment could facilitate the transformation that we want in our local contexts.

Future is here, and we need to take action, which will come from reflections and discussions at international conferences like this. I am sure you will deliberate on some of the thoughts presented today. Especially, I urge you to focus on equity and access to technology and how innovations in alternative authentic assessment and support for micro-credentials in our society could provide right signals to the employers and promote sustainable development.

Thank you for your attention.