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UNESCO GLOBAL EDUCATION MONITORING REPORT CONSULTATION MEETING: 9 MARCH 2022

EDUCATION TECHNOLOGY: IMPROVING INSTRUCTION AND TEACHER DEVELOPMENT

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FORMAT AND PARTICIPANTS

SECTION 1. Format and participants

1.1 Introduction

The purpose of this private video meeting government officials and educators, organised in partnership with the UNESCO GEM Report team and HP, is part of the ongoing consultation for 2023 Global Education Monitoring Report that will be on the theme of technology and education. This fourth consultation is on the subject of how education systems can support teachers to use technology effectively and the role of educational technology in contributing to improved instruction. Participants were encouraged to discuss the actions and policies of their governments and institutions, and to make recommendations where appropriate.
This special online meeting of officials from 36 countries to discuss how technology can benefit or even harm educational outcomes, was designed as an interactive video meeting whereby all participants took part in moderated small break-out groups. This allowed everyone to converse in private, have suitable time to express their own thoughts and to discuss recommendations in education that contribute to policies and actions.

The purpose of this UNESCO GEM Report consultation meeting of officials is to recommend evidence-based:

- practical examples on the effects of implementing education technology interventions
- practical examples on the challenges of implementing education technology interventions
- education technology policies based on national experiences of ICT4E projects
- details of both qualitative and quantitative data on education technology
- other information on educational practices supporting the GEM Report's PEER country profiles

In the context of improving instruction and teacher development, during the private break-out sessions of the meeting, officials were encouraged to address the following issues:

Barriers to access: What examples and recommendations can you give to overcome teachers' barriers to access technology, including equipment, internet, and appropriate environments?

Teacher digital competencies: What mechanisms do you recommend implementing to upskill teachers in digital literacy and skills; and is your country now equipping teachers with improved digital systems?

School leadership: How is your country supporting school principals to overcome the challenges of transitioning to the use educational technology? How can school leaders better prepare their teachers to utilize educational technology in the classroom?

Innovative pedagogy: Do you have constructive examples to share of any innovative pedagogical practices, such as adaptive instruction, that improves the engagement and interactivity of students when using EdTech or participating in virtual learning environments?

Post-Covid: What lessons have you learnt during the pandemic in terms of integrating new educational tools, communicating with students, and supporting the teaching community?

At the heart of the issue is *how can education systems support all teachers to teach, use and deal with technology effectively?* Teachers are at the core of discussions on technology for learning. Teachers now face large and increasing demands to engage with technology in education and develop related competencies. Successful technology integration is tightly linked to teacher practices. Barriers to technology use can be summarised as: teacher access to technology; application of technology whether in terms of integration or for pedagogical reasons; and external organisational factors, such as support from school leaders and professional development programs. Training needs to be connected to the objective of transforming teachers into facilitators of learning through technology.

The concept note of the 2023 GEM Report identifies three system-wide conditions that need to be met for any technology in education to reach its full potential:

Ensure that all learners have **access to technology** resources.

Protect learners from the risks of technology through appropriate **governance and regulation**.

Support all **teachers** to teach, use and deal with technology effectively.

Legislation and policies are currently being developed around the world, yet it is early days with the added complication of Covid healthcare and social regulations impacting schools. This meeting allowed officials working on the front-line of education delivery to give their own thoughts and recommendations appropriate to the subject of improving instruction and teacher development.

1.2 Executive Summary

With 149 participants, all sharing their experiences in this meeting through statements and small break-out groups, a great deal of valuable knowledge and information was imparted over the 2 hours of the meeting. We thank everyone for their input and contributions.

Officials and educators, now with two years of Covid impacted experience, have really strengthened their own ideas and approaches to implementing edtech and appreciating its symbiotic relationship with the global knowledge economy. Here we summarise the key issues people spoke around access, digital transformation, teacher professional development, school leadership, the potential harms of edtech, change management, pedagogy and ICT for education implementation.

<u>Opening Statements</u>

South Africa recognises the transformative power of technology in education and how it can play a critical role in in achieving the sustainable development goals. Particularly, SDG 4. The education system must create an enabling environment through the development of progressive and well-funded edtech policies that inform the implementation of ICT for education projects. Universal access and service is a prime directive of the government of South Africa. To successfully implement such ICT for education projects then various obligations need to be imposed on internet service providers as part of their spectrum or service licenses. A key pillar of the government's approach is teacher professional development, both pre-service and in-service, whereby digital literacy skills and the design of innovative instructional pedagogies is embedded into training programs. The experience of the Covid pandemic and the demand to ensure the continuity of through remote means led to the implementation of an ongoing distance learning program. The government had to respond to the shift to blended and online learning by developing guidelines for the safeguarding of students, the ethical use of ICTs in education – including privacy and data protection.

In Ghana, no stone is being left unturned in making sure that in this new digital age no learner is left behind nor misses the

opportunities that are afforded by educational technology. As well as digital literacy, it is critical that students understand the importance of information literacy, how to recognise trusted resources and critique online information. There remain some barriers around the integration of technology in education. These include the perception of school leaders in the role of edtech and the subsequent lack of motivation in encouraging creative teaching. Ghana is adopting ICT for learning and building ICT connectivity and device capacities for teachers and learners, with SDG education targets in mind The Ministry of Education has provided free WiFi connectivity in all secondary schools and laptops to teachers. The experience of Covid has taught governments to be very cognisant of the potential harms of online education and hence, in Ghana the policy development incorporates safe use of edtech and online resources that has now been submitted to cabinet for approval.

The GEM Report mandate is to report on the implementation of national and international strategies to achieve SDG 4. Technology can be a potential contributor to achieving SDG 4. The challenge is producing evidence-based research on the impact of edtech and by the time results of such research are disseminated then the world of technology has moved on. The first challenge is around access, equity and inclusion. The issue of quality is divided into two levels: basic skills and digital skills. The third challenge for policymakers to address is how the adoption, transfer and development of technology can be aligned with and feature in national development strategies. The fourth question to address is how technology can help make the management of education systems more efficient with the use of data to better inform policymakers.

<u>Access, Connectivity & Sustainable Policy</u>
On the question of access, it is poor connectivity, cost of data and devices that are the most common problems stated by participants in the meeting. For those living in rural areas, digital networks are more expensive for companies to set up which often deters them from investing in remote areas. The general view on ICT for education and making sure that teachers and learners have access is that there must be the political will. Ministries of education cannot do it all by themselves. Prioritising technology requires a multi-sectoral approach involving key government departments from the ministry of finance to communications, as well as engaging national stakeholders. Access to ICT infrastructure is crucial for achieving Sustainable Development Goals (SDGs). Lack of internet access, data devices and digital skill gaps aggravate digital inequality. Fulfilment of the potential of educational technology is all about connectivity.

For education technology the infrastructure is critical and should be part of the preparation when planning any new schools. Equitable access and connectivity is now an essential priority for countries. They cannot afford to get left behind, as digital transformation accelerates we are seeing new innovations in education technology, The top trends we are seeing now include e-learning, video-assisted teaching, artificial intelligence, learning analytics, gamification, immersive learning with extended realities, and social media learning. Technology in education has renewed the whole teaching and learning process.

<u>Digital Transformation & Post-Covid Acceleration</u>
The Covid pandemic has accelerated the use of ICTs in education, especially given the emergency response to ensure the continuity of learning during school closures. Now, nobody wants to return to the pre-Covid landscape where decisions on edtech integration were often met with resistance or put-off. Another lesson from Covid has been how practice moves well ahead of policy. Teachers and educators responded to the disruption with the tools available and then realised how to leverage the technology to introduce new teaching practices. All without any policy guidance. The pandemic has brought a sense of urgency to policymakers who are being pushed by parents and communities to deliver digital implementation on the ground and not just in a policy paper. Covid has exposed shortcomings and accelerated issues.

For so many countries, affordability is such a major barrier to access and the making the most of the digital education opportunities. The digital economy is coming and in doing so, it will bring big opportunities. By investing in digital literacy and providing affordable internet to schools, it is possible to usher a new era of digital education. The lack of internet access requires immediate counter action by several countries especially given the overbearing effects of digital exclusion caused by the Covid pandemic.

<u>Teacher Training for Digital Skills</u>
Across the board, the Covid pandemic exposed the lack of teacher training in ICT for education and also the lack of digital savvy trainers in the teacher training colleges. So one of the biggest

barriers to access has been the shortage of teachers with the requisite digital skills and training in the use of new educational software. Governments around the world are now facing huge budgetary pressures imposed upon them by the cost of the pandemic and the loss of tax revenues. Although education budgets are generally holding up, it is often CPD that gets hit first when cuts need to be made. Equally, teachers using educational technology need to have their own means of assessing the impact and success of what they are doing.

Technology must be suitable for its purpose. The content needs to be available for teachers and learners such that the edtech can be integrated into teaching without the teachers having to search for materials. For teacher motivation a problem is the financial implications of online and blended learning. Teachers have found themselves impacted with the cost of data due to an increase in the use of their smartphones for messaging and communications. The 21st century teacher needs to be equipped with knowledge, skills and content that will enable them adequately prepare learners to adapt and compete with the contemporary societal demands. It is recommended that governments ensure investment and adoption of modern technology in teacher training institutions and schools to enable teachers learn the 21st century skills that they will transfer to the learners.

<u>School Leadership & Teacher Communities</u>
Leadership in schools is of critical importance. The leadership is needed to deliver policies for access and connectivity. A lack of vision or leadership, especially during a time of crisis, such as the pandemic, can prove to be the biggest barrier to access. Where the school principals embrace technology it succeeds, where they do not it fails. Motivated leadership is critical. Without a digital strategy and supporting leadership, a school's approach to edtech will more likely fail and certainly result in wasted resources. It is the school principal who drives innovation and has the ultimate oversight of the quality assurance process for assessment. Strong leadership will ensure that such quality assurance is done so in a digital format and leaders can now provide teachers with relevant information in real-time through a variety of technologies. The school leadership needs to overcome the challenge of transitioning to more e-learning and ensure that their teaching staff are better prepared in the use of educational technology. If the principals are not motivated then it is unlikely the teachers will be.

One of the most successful experiences during the pandemic has been the spontaneous development of teacher communities who have come together to share and solve their problems when using technology and trying to provide online education. Professional learning communities have sprung up for teachers to help each other but now is the time for policymakers to consider the need to formalise community platforms – providing a framework for the best practices when integrating technology into instruction. In some regions, teachers were not really using ICTs on a regular basis prior to the pandemic. And if they were using education technologies the usage was quite limited. From one UNESCO study they discovered that the best way for teachers to learn to engage with ICTs, from a pedagogical perspective, was through the support they can get from their peers, from their fellow teachers, and sometimes from the students. If teachers share their experiences with each other and are exposed to what is going on in the profession around the world, then it will uplift their competencies.

<u>Risks, Data Privacy & Edtech Awareness</u>
Data privacy in education is an issue that must be dealt with by governments. Frameworks need to be in place to protect the data of students and teachers. The educational platforms and learning management systems are collecting enormous amounts of personal data. Who owns this data?

We do not know the levels of security built within these platforms and how vulnerable they might be to hacking. Ultimately, it is recognised that we cannot police the internet completely and hence must work towards a values-driven approach. Policy makers and educators should be looking at how they integrate cyber wellness into core subject areas and then create meaningful content for the learners. Online bullying, trolling, blatant insults, and offensiveness, especially via social media platforms is a deep concern. For the good of student well-being, dealing with this needs to be taught.

Given that much of the edtech on the market has been developed by technologists and not educators, there is often a gap between what the education system needs and what the technology provides. The digital divide is no longer just about access to devices and connectivity, it is increasingly about the choices made of the technology used in the classroom and online. If these new forms of digital divide are left unaddressed, the gap between the under-connected and the hyper-digitalised will widen.

<u>Impact Integration & Change Management</u>
Introducing technology in schools is more than just the infrastructure and the training but requires an holistic approach that incorporates change management and an appreciation of the enormous diversity of educational technology. With digital transformation having so many factors and moving parts in the education system it becomes the responsibility of policymakers to set performance indicators, have continuous monitoring and carry out impact studies.

Ministries of education are encouraged to carry such impact studies to truly assess whether all this edtech is being used efficiently and effectively. Is it making a difference? Is it having an impact on improving the competencies of learners? Is money being wasted or spent wisely on the technology? How are schools and the system as a whole managing this digital and skills transformation? The choice of in-classroom technology is critical. There is a danger of purchasing just for the sake of technology and not for pedagogical reasons. Governments can be seduced by bright and shiny tech, sold to them as the answer to their ICT problems, but any technology that does not support the teacher will more likely fail.

<u>Pedagogy & ICT4E Implementation</u>
On the question of innovative pedagogical practices, not all teachers are able to distinguish between pedagogy and their particular subject knowledge. How to best implement technology requires an understanding of the difference between these two concepts. So proper ICT integration does have the potential in developing innovative pedagogical practices by helping to determine which techniques are better, what the student needs and promoting a more student-centred form of flexible learning. Critically, one cannot first choose a pedagogy and then a technology because pedagogy is the thoughtful combination of methods, designs, interactions, learning environments, activities, assessment and the educational technologies. The pedagogical challenges of conducting an online lesson remain. Then there is the actual cognitive presence of the students. How much are they learning and what tools does the teacher have to answer that question?

There needs to be more collaboration between schools and the edtech companies as part of any government's digital education strategy. Educators are generally great collaborators, but when it comes to working with commercial suppliers school principals are more wary. If schools are to benefit from evidence-based technology they must give the companies the opportunity to engage with them. What are the vendor's real intentions? Does the project align with the school's digital strategy? What are the expectations of teachers in the school and are they being given ownership of the edtech implementation? The successful integration of ICT for education must be tightly linked to the role and practices of teachers. Overcoming tech resistance requires for teachers to have input and ultimately ownership of the implementation of technology.

There is now a clear trajectory with the increased use of technology in education and more focus on digital learning, yet for many it seems that trajectory is stopped in its tracks when it comes to assessment. It is clear that the form of in-school examinations cannot be simply replicated digitally or in a virtual space. The nature of assessment needs to be adapted to reflect the disruption caused by online learning, while maintaining its authenticity and reliability, especially as a measure for students going into higher education. From many studies by UNESCO and other UN agencies over the last two years, what has come out powerfully is that teachers and learners felt that what is missing is the face-to face-interaction. The school is a community where people enjoy being with their fellow peers within a physical environment.

1.3 Format of Video Conference and this Report

In section 1.4 we list the one hundred and forty nine (149) participants of this video meeting. The experience of organising online video meetings is to ensure that every participant has a voice. Small groups are essential. So, after opening statements the event was split into break-outs each with a moderator to take notes and support the conversation.

Prior to the break-out rooms there were three opening statements from: Hon Reginah Mhaule, Deputy Minister of Basic Education, South Africa; Catherine Appiah-Pinkrah, Director, General Administration, Ministry of Education, Ghana; and Manos Antoninis, Director, UNESCO GEM Report. The closing statement was made by Mayank Dhingra, Senior Education Business Leader, MEA, HP. Although all discussions were recorded and transcribed for the purpose of this report, none of the quotes or what was said during the private break-out rooms is made attributable to any one person.
The following was the video conference format:

Part A: Opening statements from: Hon Reginah Mhaule, Deputy Minister of Basic Education, South Africa; Catherine Appiah-Pinkrah, Director, General Administration, Ministry of Education, Ghana; and Manos Antoninis, Director, UNESCO GEM Report.

Part B: Nineteen break-out groups were formed, each with a moderator to record discussions and take note of the key points raised.

Part C: All participants returned from their break-out groups. The closing statement was given by Mayank Dhingra, Senior Education Business Leader, MEA, HP

After introducing the participants in 1.4, the format of this report is structured around the policy issues and non-attributable quotations. The participants hold senior positions in government from multiple countries and expressed what they are experiencing as well as their own recommendations.

In this report we have done our best to identify the main subjects taken from what participants said to provide a dissemination of recommendations and experiences suitable for the consultation of the 2023 UNESCO GEM Report on the theme of technology and education. The main issues are reported as follows:

Access, Connectivity & Sustainable Policy

Digital Transformation & Post-Covid Acceleration

Teacher Training for Digital Skills

School Leadership & Teacher Communities

Potential Harms & Edtech Awareness

Impact, Integration & Change Management

Pedagogy & ICT4E Implementation

1.4 Participants (149)

We would like to thank all those for participating and providing such outstanding contributions. The opportunity for them to openly converse in small break-out groups provides us with a discerning judgement on the key issues and immediate policy recommendations. It is an honour for the organisers to host such a distinguished gathering of educators and policy makers. Everyone committing their time during this ongoing period of uncertainty is a true testament to their desire to ensure strong decision making around the future of education. Participants are listed by country, alphabetically:

ALBANIA: Anila Ferizaj, Head of Department, Ministry of Education and Sports
ALBANIA: Ornela Quku, Specialist, General Directorate of Policies and Development, Ministry of Education and Sports
ALBANIA: Majinda Mehmetaj, Education Specialist, Ministry of Education and Sports
AUSTRALIA: Tony Brandenburg, Education & ICT Consultant, Global Education Consulting
BAHRAIN: HE Nawal Al Khater, Undersecretary for Policies, Strategies and Performance, Ministry of Education

BAHRAIN: Latifa Albunoodha, Assistant Undersecretary for General & Technical Education, Ministry of Education

BOTSWANA: Dr Spar Matthews, Principle Education Officer, Ministry of Basic Education

BOTSWANA: Monicah Minki Lekgabe, Principal Education Officer: e-content Development, Ministry of Basic Education

BOTSWANA: Taolo Tsimanyane, Deputy Director - ICT and Media Services, Ministry of Basic Education

BOTSWANA: Lentikile Matswagothata, Coordinator Education and Training Sector Strategic Plan, Ministry of Basic Education

BURUNDI: Prof Tatien Masharabu, Permanent Executive Secretary, National Commission for Science, Technology and Innovation

CAMEROON: Dr Pierre Celestin Taptue, National Institute for Training of Trainers and Curriculum, Ministry of Employment

CAMEROON: Chief Fozao, Regional Pedagogic Inspector Buea, Ministry of Secondary Education

CAMEROON: Dr Musongong Ntse Luke, Ministry of Secondary Education, Regional Pedagogic Inspector

CAMEROON: Dr Lucas Agwe, Coordinating Inspector in charge of the teaching of Computer Sciences West Region, Ministry of Secondary Education

CAMEROON: Dr William Shu, Assessor for the Cameroon GCE Advanced Level Computer Science, Ministry of Secondary Education

CAMEROON: Lawrence Kambiwoa, Chief of Computer Studies, Ministry of Secondary Education

COTE D'IVOIRE: Aboubacar Coulibaly, Director of Information Technologies and Systems, Ministry of National Education, Technical Education & Vocational Training

EGYPT: Mohamed Farouk, STEM Unit Manager, Ministry of Education and Technical Education

EGYPT: Amaal Mohamed, National Programme Officer for Education, UNESCO Cairo

EGYPT: Doaa Abonaem, Project Officer, UNESCO Cairo

ETHIOPIA: Yonas Bekele, Director General, Digital Technology Centre, Ministry of Education

FRANCE: Manos Antoninis, Director, UNESCO Global Education Monitoring Report. *Opening speaker*

FRANCE: Anna Cristina D'Addio, Senior Policy Analyst, UNESCO Global Education Monitoring Report. *Moderator*

FRANCE: Laura Stipanovic, Researcher, UNESCO Global Education Monitoring Report. *Moderator*

FRANCE: Yuki Murakami, Researcher, UNESCO Global Education Monitoring Report. *Moderator*

FRANCE: Daniel April, Researcher, UNESCO Global Education Monitoring Report. *Moderator*

FRANCE: Francesca Endrizzi, Researcher, UNESCO Global Education Monitoring Report. *Moderator*

FRANCE: Divya Sharma, Researcher, UNESCO Global Education Monitoring Report. *Moderator*

GAMBIA: Ousainou Drammeh, Chairperson, Education Advisory Council for Basic and Secondary Education

GAMBIA: Alpha Bah, Principle Education Officer, Ministry of Basic and Secondary Education

GHANA: Catherine Appiah-Pinkrah, Director, General Administration, Ministry of Education. *Opening speaker*

GHANA: Lawrence Sarpong, Director, Department of Professional Development of Teachers, Ministry of Education

GHANA: Rejoice Dankwa, Director, Ministry of Education

GHANA: George Owusu, Performance Management and Accountability Advisor, Ministry of Education - National Education Reforms Secretariat

GHANA: Solomon Yamoah, General Manager, Ghana National Education Campaign Coalition

GHANA: Moses G Y Gemeh, Education Officer, National Commission for UNESCO

GHANA: Kofi Kwakye, Education Officer, National Commission for UNESCO

GHANA: Ako Forson, Secretary General, Coalition of Concerned Teachers

GHANA: Jerry Sarfo, Senior Assistant Secretary, Directorate: Institutional Support & Coordination, Ghana Tertiary Education Commission

GHANA: Akwasi Addae-Boahene, Chief Technical Advisor, T-Tel

GHANA: Veronica Dzeagu, Senior Programs Officer, All Africa Students Union, Ghana National Education Campaign Coalition

GHANA: Alfred Ampah-Mensah, Deputy-Director General Academic Programmes and Professional Development, University of Cape Coast, Institute for Educational Planning and Administration

GHANA: Dr Hope Pius Nudzor, Senior Research Fellow & Critical Education Policy Analyst, University of Cape Coast, Institute for Educational Planning and Administration

IRAQ: Dr Yousif Al-Dunainawi, Head of Entrepreneurial Projects Research and Development, Ministry of Higher Education & Scientific Research

IRAQ: Hind Hassan, Head of Curriculum, Ministry of Education

JORDAN: Raghad Shweihat, Education Consultant, UNICEF Jordan

JORDAN: Rola Said, Director of Programs, Queen Rania Teacher Academy

JORDAN: Nabila Basheer, Business Development Manager, Queen Rania Teacher Academy

KENYA: Francis Karanja, Chief Education Officer ICT for Education, Ministry of Education

KENYA: Dr Osawa Otta, Deputy Director, Research and Development, TVET Authority, Ministry of Education

KENYA: John Kimotho, Director Educational Media, Kenya Institute of Curriculum Development

KENYA: Dr Lydia Mucheru, Senior Principal Curriculum Development Officer: Educational Media, Kenya Institute of Curriculum Development

KENYA: Jane Mwangi, Chief Executive Officer, Kenya Association of International Schools

KENYA: Joshua Opondo, Infrastructure Projects Lead, ICT Authority

KUWAIT: Prof Mohammad Tawalbeh, Dean, Faculty of Education and General Studies, Arab Open University HQ

LEBANON: Rana Taher, Five Year Plan Team Leader, Ministry of Education and Higher Education

LEBANON: Rania Saikaly, Portfolio Coordinator, Ministry of Education and Higher Education

LEBANON: Dr Fawzi Baroud, Assistant Vice President for Information Technology, UNESCO Chair on Open Educational Resources for Access and Success, Notre Dame University

LEBANON: Prof Maha Aboul Ela, Dean of Academic Development and Quality, Beirut Arab University

LEBANON: Dakmara Georgescu, Programme Specialist: Learning, Curriculum and Teaching, UNESCO Beirut

LESOTHO: Bertha Seutloali, CEO Secondary Education, Ministry of Education

LIBERIA: Hon Dominic Kweme, Assistant Minister Planning, Research & Development, Ministry of Education

LIBERIA: Sangay Faeflen, Director, Ministry of Education

LIBYA: Talal Amara, Academic Consultant, Ministry of Education

MOROCCO: Halima Benramdane, Community Manager in charge of Information Monitoring at GENIE Program, Ministry of National Education, Vocational Training, Higher Education & Scientific Research

MOROCCO: Elarbi Imad, President, Moroccan Centre for Civic Education

MOROCCO: Abderrazzak Morjani, Educator & Project Coordinator, Moroccan Centre for Civic Education

MOROCCO: Fawzi Talout, Africa Education Lead, HP. *Moderator*

MOROCCO: Khalid El Hassan, Business Development Manager North & West Africa and Islands, HP. *Moderator*

MOROCCO: Adil Kribach, Strategic Account Manager, HP. *Moderator*

NAMIBIA: Johan van Wyk, Deputy Director – ICT, Ministry of Education, Arts & Culture

NAMIBIA: Willemien Wannberg, Deputy Director: Curriculum Research and Development (NIED, Ministry of Education, Arts & Culture

NAMIBIA: Leonard Amunime, Senior Education Officer ICT (NIED), Ministry of Education, Arts & Culture

NAMIBIA: Frieda Ngula-Akwaake, Senior Education Officer, National Institute For Education Development (NIED), Ministry of Education, Arts & Culture

NAMIBIA: Rochester Mushabat, Resource Centre Manager, National Institute For Education Development (NIED), Ministry of Education, Arts & Culture

NAMIBIA: Beate Etzel, Advisor for ICT and eLearning, Interteam (NIED), Ministry of Education, Arts & Culture

NAMIBIA: Stanley Kanovengi, System Administrator, Ministry of Education, Arts & Culture

NAMIBIA: Waldo Junius, Deputy Director, National Commission for UNESCO Secretariat

NAMIBIA: Cavin Muchila, Deputy Director, National Commission for UNESCO Secretariat

NAMIBIA: Rosalia Nuuyoma, Program Officer, Communication Information, National Commission for UNESCO Secretariat

NAMIBIA: Dr Mathilde Shihako, Deputy Director for Academic Affairs and Research, University of Namibia

NAMIBIA: Prof Kavena Shalyefu, Deputy Director: Academic Centres, Centre for Professional Development, Teaching and Learning Improvement, University of Namibia

NAMIBIA: Erkkie Haipinge, Deputy Director: eLearning. Lecturer: Technology Enhanced Learning, University of Namibia

NAMIBIA: Dr Hertha Pomuti, Senior Lecturer: Curriculum Instruction and Assessment Studies University of Namibia

NAMIBIA: Dr Pamela February, Lecturer: Educational Psychology and Inclusive Education, University of Namibia

NAMIBIA: Dr Colen Tuaundu, Director: Program Development Unit, Namibia University of Science & Technology

NAMIBIA: Wilhelmina Louw, E-Learning Program Developer, Programs & Material Development, Namibian College of Open Learning

NIGERIA: Abubakar K Isah, Director. Information & Communication Technology, Federal Ministry of Education

NIGERIA: Mohammed Mahmud, Technical Assistant to Minister, Federal Ministry of Education

NIGERIA: Elizabeth Oyelola Omolara, Assistant Director for eLearning and ICT Staff Development, Federal Ministry of Education

NIGERIA: Dr Angela Ekwutosi Ozibo, Deputy Director Research and Development Division, Academic Services Department, National Teachers' Institute (NTI)

NIGERIA: Olanrewaju Phillips, Enterprise Account Manager, Education – Central Africa, HP. *Moderator*

NIGERIA, OGUN STATE: Martin Odebowale, ICT Expert, Office of the Special Adviser on Education, Governor's Office

QATAR: Maryam Alboainain, Director of Directorate of Early Childhood Development, Ministry of Education and Higher Education

QATAR: Noha Alomari, ICT Education Specialist, Ministry of Education and Higher Education

QATAR: Dr Siham Al-Amoush, Senior Faculty Development Specialist, Qatar University

QATAR: Farida Aboudan, Programme Specialist – Education, UNESCO Qatar

QATAR: Ahmed Osman, Assistant Programme Specialist – Education, UNESCO Qatar

RWANDA: Eng Pascal Gatabazi, Chief Technical Advisor to the Minister, Ministry of Education

RWANDA: Josephine Nyiranzeyimana, Chief Government Information Officer, Rwanda Information Society Authority

SAUDI ARABIA: Majdi Naser Al Naser, Territory Sales Manager, HP. *Moderator*

SENEGAL: Dr Mawa Samb, Teacher Trainer - CRFPE (Pre-Service and In-Service Training Centre), Ministry of National Education

SENEGAL: Maïmouna Soudé Souare, Elementary School Inspector, Education Planning and Reform Direction, Monitoring and Evaluation Division, Ministry of National Education

SIERRA LEONE: Gloria Hassan-Kamara, Manager, Teacher Performance, Teachers Service Commission

SIERRA LEONE: Ezekiel Nonie, Teacher Performance Manager, Teachers Service Commission

SOMALIA: Mohamed Mukhtar, Director of Curriculum, Ministry of Education, Culture and Higher Education

SOMALIA: Ahmed Muse Hosh, Director of Human Resources & Former Director of Department of Teacher Training, Ministry of Education, Culture and Higher Education

SOMALIA: Mohamed Sharif Ibrahim, Acting Policy & Planning Director, Ministry of Education, Culture and Higher Education

SOMALIA: Ismail Abdi, Senior Advisor, Teacher Development, Ministry of Education, Culture and Higher Education

SOMALIA: Abdirizak Hassan, Education Sector Strategic Plan Advisor, Ministry of Education, Culture and Higher Education

SOMALIA: Said Awaleh, Education Management Information system (EMIS)Technical Advisor, Ministry of Education, Culture and Higher Education

SOMALIA: Mahdi M Abdi, ICT Department and Teacher Development, Ministry of Education, Culture and Higher Education

SOUTH AFRICA: Hon Reginah Mhaule, Deputy Minister, Ministry of Basic Education. *Opening speaker*

SOUTH AFRICA: Lebohang Matshaba, Head of Office for the Deputy Minister, Ministry of Basic Education

SOUTH AFRICA: Zubeida Sattar, Private Secretary to the Deputy Minister, Ministry of Basic Education

SOUTH AFRICA: Dr Neo Mothobi, Chief Education Specialist, Ministry of Basic Education

SOUTH AFRICA: Carlton Mukwevho, Secretary General, UNESCO South Africa, Ministry of Basic Education

SOUTH AFRICA: Handson Mlotshwa, Director: ICT Teacher Development, Ministry of Basic Education

SOUTH AFRICA, GAUTENG PROVINCE: Thulani Mthembu, Deputy Chief Educational Specialist, Department of Education

SOUTH AFRICA, GAUTENG PROVINCE: Rajesh Singh, Deputy Chief Educational Specialist, Department of Education

SOUTH AFRICA, MPUMALANGA PROVINCE: Nomusa Keninda, Chief Director: Curriculum Management and Teacher Development, Department of Education

SOUTH AFRICA, WESTERN CAPE PROVINCE: Haroon Mahomed, Chief Director: Curriculum Management and Teacher Development, Department of Education

SOUTH AFRICA, WESTERN CAPE PROVINCE: Gail Ahrends, Senior Education Specialist, Assessment Management, Department of Education

SOUTH AFRICA, WESTERN CAPE PROVINCE: Ismail Teladia, Senior Curriculum Planner: Life Orientation/Life Skills, Department of Education

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UNITED ARAB EMIRATES: Mayank Dhingra, Senior Education Business Leader, MEA, HP. *Closing speaker*

UNITED ARAB EMIRATES: Vikas Miglani, Corporate & Public Sector Manager, Middle East, HP. *Moderator*

UNITED ARAB EMIRATES: Enkenyelesh Getachew, Corporate, Enterprise and Public Account Manager, HP. *Moderator*

UNITED ARAB EMIRATES: Lavina Punjabi, Junior ACM – PS category, ME, HP. *Moderator*

UNITED ARAB EMIRATES: Nyla Tariq, Co-founder, Mirai Partners. *Moderator*

UNITED ARAB EMIRATES: Lena Borno, Project & Operations Manager, Mirai Partners. *Moderator*

UNITED KINGDOM: John Glassey, CEO, Brains Global. *Host*

UNITED KINGDOM: Claire Urie, Head of Government & International Relations, Brains Global

UNITED KINGDOM: Victoria Tate, Head of Education Partnerships, Brains Global

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ZAMBIA: George Chileya, Assistant Director for Research and Innovation, Directorate of National Science Centre, Ministry of General Education

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ZAMBIA: Milner Makuni, Director - Planning and Policy, SMART Zambia, Office of the President

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DISCUSSIONS

SECTION 2. Discussion

2.1 Opening Statements

The opening statements were provided by Hon Reginah Mhaule, Deputy Minister of Basic Education, South Africa; Catherine Appiah-Pinkrah, Director, General Administration, Ministry of Education, Ghana; and Manos Antoninis, Director, UNESCO GEM Report.

Hon Reginah Mhaule

Hon Deputy Minister Mhaule emphasised the transformative power of technology in education and how it can play a critical role in accelerating South Africa's progress in achieving the sustainable development goals. Particularly, SDG 4 – education that advocates for inclusive and equitable quality education, promoting lifelong learning and to strengthen efficiencies in the basic education sector to improve learning outcomes. In order to encourage teachers to use technology effectively, the education system must create an enabling environment through the development of progressive and well-funded edtech policies that inform the implementation of ICT for education projects.

Such projects and the accompanying government regulatory framework must be the medium through which an integrated approach achieves the eradication of barriers to access technology and ensures the upskilling of school principals and teachers in change management, digital literacy and innovative pedagogies. Furthermore, such a framework must mitigate against disruption to face-to-face learning as we witnessed during the Covid pandemic.

Universal access and service is a prime directive of the government of South Africa. To successfully implement such ICT for education projects then various obligations need to be imposed on internet service providers (ISPs) as part of their spectrum or service licenses, including the provision of connectivity and ICT devices to a specified number of schools. Then there is the regulation regarding cost of data and content zero-rating in the education sector. ISPs in South Africa are now required to give a discount of no less than 50% to schools. The zero-rating of educational websites is a government regulation that requires ISPs to allow learners to access and utilise specific educational websites without charging their internet data plan.

The next key pillar of the government's approach is teacher professional development, both pre-service and in-service, whereby digital literacy skills and the design of innovative instructional pedagogies is embedded into training programs. Practising teachers also receive continuous ICT skills and integration training that contribute to their professional teacher development points requirements. The laptop is now an essential tool of the teaching profession. The government has provided laptops and internet data packages to teachers across the various provinces. To complement this, the department of basic education is committed to ensuring teachers have access to free digital educational content resources. Many such resources are now available both online and offline as pre-loaded content on servers and devices. As well as zero-rated resources, the government has developed free 'state-owned' content resources such as digital textbooks for high enrolment subjects and frequently used school workbooks.

The experience of the Covid pandemic and the demand to ensure the continuity of teaching and learning through remote means led to the implementation of an ongoing distance learning program that integrates the use of TV and radio lessons with online learning platforms to allow learners to have access to lessons anytime, anywhere. The government had to respond to the shift to blended and online learning by developing guidelines for the safety and safeguarding of students, the ethical use of ICTs in education – including privacy and data protection. These guidelines retain the key objective of improving outcomes and set the South African standard for educational instructional to be world-class.

The government and national education stakeholders accept that information communication technologies

are here to stay and embracing the best of edtech, without compromising quality pedagogy is the way to go. Following the disruption caused by the pandemic, South African schools are now back to a full timetable. All grades have return, though that is not to say there are not challenges relating to the infrastructure and classroom overcrowding. Teachers have been put under enormous stress in the last couple of years and still they need to improvise and innovate to meet these challenges with the system returning to its full curriculum.

Catherine Appiah-Pinkrah

In Ghana, no stone is being left unturned in making sure that in this new digital age no learner is left behind nor misses the opportunities that are afforded by educational technology. Of course, the Covid pandemic has wreaked havoc on education systems and so the Ghanaian framework for action encourages the development of teacher training programs with an emphasis on inclusivity and how to deal with special needs students in the digital setting. As well as digital literacy, it is critical that students understand the importance of information literacy, how to recognise trusted resources and critique online information.

Technology in education is a necessary game changer because it helps learners build the adaptable skills and competencies required to succeed both in the classroom and in today's tech savvy workplace. With teachers at the heart of education, it is critical to how the system can support teachers in the effective use of technology, while engaging students in innovative pedagogies. There remain some barriers around the integration of technology in education. These include the perception of school leaders in the role of edtech and the subsequent lack of motivation in encouraging creative teaching.

Ghana is adopting ICT for learning and building ICT connectivity and device capacities for teachers and learners, with SDG education targets in mind and making sure that any implementation is supported by evidence-based research. The Ministry of Education has provided free WiFi connectivity in all secondary schools and laptops to teachers. This needs to be done in conjunction with building teacher capacities and especially ensuring that in-service teachers are given new training in the necessary digital competencies required for ICT integration in education. Partnerships are an important ingredient in such capacity building, whether it be with industry, such as the HP program for educators – Innovation and Digital Academy Education (IDEA), or with multilateral agencies like UNESCO. And UNICEF

The experience of Covid has taught governments to be very cognisant of the potential harms of online education and hence, in Ghana the policy development incorporates safe use of edtech and online resources that has now been submitted to cabinet for approval. That said, there is a wider need for more research into the use and impact of technology in the educational setting and innovative thinking is needed to provide both quantitative and qualitative resources that support the improvement of teaching and learning in the classroom in the digital age. Of course, the technology is not there to replace good teachers but in the hands of great teachers it can be transformational. The responsibility of the government and education stakeholders is to strike this balance between teachers and tech to best harness the opportunities.

Manos Antoninis

This opening statement is in conjunction with the presentation in Appendix A.

The Global Education Monitoring Report has been with us since 2002, as an editorially independent team that is hosted and published by UNESCO. The GEM Report has a mandate to monitor progress in education, notably in the context of the sustainable development agenda, with each edition having a monitoring section going through all the SDG 4 targets. Secondly, the mandate is to report on the implementation of national and international strategies to achieve SDG 4, to help hold all partners to account for the commitments they made in 2015. This is why every report, published about every 15 months, has a theme. The last report launched in December 2021 was on the role of non-state actors in education, and before summer 2023, there will be the launch of this report on the theme of technology.

The concept note for the GEM Report highlights how technology can be a potential contributor to achieving SDG 4 and also how Covid has accelerated the use of technology in education. Yet opinions remain divided on how best to leverage educational technology. The challenge is producing evidence-based research on the impact of edtech and by the time results of such research are disseminated then the world of technology has moved on. So the GEM Report aims to look at which key educational challenges technology can help support and then with its potential fulfilled, what are the minimum conditions that governments should put in place?

The first challenge is around access, equity and inclusion. Although technology can help greatly with access and inclusivity, we also know that some learners are at risk of being left out. Technology

has huge potential in facilitating access to content in attractive and relatively cheap formats but that brings about the second challenge – the question of quality. For the purpose of the UNESCO GEM Report the issue of quality is divided into two levels: basic skills and digital sills. So how can technology transform pedagogy, engage students and improve earning outcomes for basic skills? And how can education systems transform to deliver digital skills while acknowledging that such competencies are now being acquired outside of the formal education system? The third challenge for policymakers to address is how the adoption, transfer and development of technology can be aligned with and feature in national development strategies? This question bears greater relevance at the more senior grades and into university education. The fourth question to address is how technology can help make the management of education systems more efficient with the proper use of quality data to better inform policymakers.

So with the potential established, we have three main conditions that need to be met by governments. Firstly, is equitable access to technology with the implications this has on how governments take decisions and how they finance the procurement of technology. Secondly is related to governance and regulation. Technology in education is not only determined by education ministries but also a wide range of actors that need to be regulated collectively to achieve the best outcomes. Equally, such legislation must protect learners from the risk of technology. The third condition is teacher preparation. So long as teachers are not properly prepared in the use and integration of edtech into learning and pedagogy then we are not fulfilling its potential.

The UNESCO GEM Report team also has ongoing online consultations where officials can submit comments and recommendations on what these reports should cover, offering specific examples from on-the-ground experience. The concept note of the GEM Report and further information on the issues to be addressed is available at: https://2023gemreportconsultation.wordpress.com/ and a summary of consultation events can be found at: https://en.unesco.org/gem-report/2023consultation-events

2.2 Access, Connectivity & Sustainable Policy

For the implementation of an ICT for education strategy it is clearly understood that technology is a tripartite, with the digital core comprising of devices, software and internet. On the question of access, it is poor connectivity, cost of data and devices that are the most common problems stated by participants in the meeting. As schools have shifted predominantly to blended and remote learning, many disadvantaged or rural communities are now missing out on crucial education where there is no internet connection. There are multiple factors that contribute to disproportionate access to the internet, with the two most significant barriers being affordability and lack of infrastructure. Even a 500MB data package would give a child the capacity to have just one 30 minute virtual lesson. This would mean that for children requiring regular internet access at home for schooling, families would need a minimum of 6 GB of data just for one child to be online for an average 6 hour school day. For those living in rural areas, digital networks are more expensive for companies to set up which often deters them from investing in remote areas, leaving those children behind. Even if they were to successfully set it up, it would cost families two to three times more than what is paid for in urban areas.

Achievement of SDG 4 – "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" – is an important consideration for governments designing their digital education policies. Massive open online courses, online education providers, online program managers, learning support programs, and a variety of educational mobile device applications have placed libraries of high quality education online. Mobile technology contributes to SDG 4 by allowing students to learn from any location and on the move. Mobile technology can help education through the dissemination of online content and support. It can also promote ICT in education and bridge the digital divide through e-learning. Further, mobile technologies can assist professionals by enabling the use of new digital tools to improve their teaching outcomes.

It is important to consider the SDGs within the school setting, so we need to start from the teacher and teacher development is the core element to make such progress. First encourage teacher confidence and trust in technology and their desire to upskill digital competencies. Developmental engagement through educational technologists is necessary for them to appreciate the educational environment. So, when working as a team in education everyone speaks the same language, convinced of the benefits of technology in education. This all forms part of instilling a culture of sustainability such that resources are not wasted when integrating ICTs into education. If we encourage the teacher to correlate outcomes or competencies of the curriculum and how the technology will help, this brings an added value to sustain the quality education and be in

alignment with the SDGs.

The general view on ICT for education and making sure that teachers and learners have access is that there must be the political will. Ministries of education cannot do it all by themselves, especially given the infrastructural needs and the cost of purchasing the devices and software required for e-learning. Prioritising technology requires a multi-sectoral approach involving key government departments from the ministry of finance to communications, as well as engaging national stakeholders. This includes working closely with the teacher unions who need to be supportive of the shift in professional practices and the need for more teacher training in digital skills. The experience in Ghana, with three major teacher unions, is that such a collaboration with the ministry of education can work automatically, such that teachers who are union members receive a laptop and are connected to the major internet service providers.

With connectivity being such a major issue then it is clear that governments need to determine very specific targets with the telecom operators and ISPs. This can only be done with a 'whole government' approach whereby the operators are working within a regulatory framework that includes clear definitions and targets for the education sector. They have learnt this in Western Cape, South Africa, where they determined that a school needs a minimum connectivity of 10 Mbs and they have a set a target of 1 Gbs by 2030. This means allocating spectrum to the network operators and imposing obligations on them that they must connect a certain number of schools within an agreed time period. A recent agreement has committed the operators to connect a further 18,000 public schools with the government introducing a set of minimum standards for online school systems. All learners will have an email address, applicable security features and digital signatures.

In Africa, internet penetration has improved in the last decade. However, the continent still lags in integrating the internet into learning. Access to ICT infrastructure is crucial for achieving Sustainable Development Goals (SDGs). Lack of internet access, data devices and digital skill gaps aggravate digital inequality. Most African countries have included universal service policies in their overarching digital strategies. For example, the Digital Senegal 2016–2025 Strategy calls for making broadband a priority through public-private partnerships for infrastructure sharing and deploying networks in unserved areas.

The problem with Africa internet access is not the absence of policy or legislation. Instead, the hurdle is the effective implementation and policy mismatch. For instance, commercial mobile phone penetration has been pursued to the detriment of broadband access. Mobile internet penetration gives false positives on Africa's internet landscape. Internet access remains expensive, and the connection is unreliable. The experience during the Covid pandemic underlines that most countries in Africa have not effectively integrated the internet into the learning process. With the experience of Covid behind, it is hoped that emerging digital strategies in Africa will properly enhance access to the internet and its integration into learning.

One of the things that officials have seen is that silo approach to the digitisation of learning and teaching cannot work. The pandemic has helped educators realise that doing things at just a local project level is not enough. When you have a small project, then magnify it. The challenge of a whole government approach to all the learners in primary and secondary school, is how a holistic, harmonised and coordinated policy reform is urgently needed to provide the tools for learning. So as officials develop their strategies for connectivity, especially in Africa, they now appreciate the need to have a whole government approach so that this does not become an isolated intervention.

For a few years in Western Cape, South Africa, they have had their program called "E-Learning as a Game Changer" giving every school in the province minimum connectivity. The device distribution has been more heavily resourced in urban areas than rural, yet the department of education has learnt some important lessons from this period – including during the Covid disruption. One success story has been the online mathematics curriculum in primary schools where they have definitely seen

an improvement in results. This is enhanced by the fact that teachers can get real time data feedback on performance and intervene immediately to help the learner where needed. Still the general refrain is that connectivity is not strong enough and when it drops there is disappointment because of the anticipation and positive expectations of using the online platform. During Covid their education portal saw a quadrupling of the traffic, with such popularity putting demand on the system that many people were challenged with connectivity. A stop gap intervention of the department was to increase the printing budget by two thirds to make printed materials available while digital content was not accessible.

Fulfilment of the potential of educational technology is all about connectivity. This sentiment in reflected in Rwanda where investment in school connectivity along with digital content and devices is an absolute priority. The smarter education project in Rwanda is committed to the capacity development of teachers as well as ensuring the devices and equipment are procured for schools.

Compared to Africa, we see countries like Qatar who do not have the same challenges for connectivity and access to technology. Qatar has a very considerable budget dedicated to education. In the 2020 budget, investment in education represented approximately 10% of overall expenditures, one of the highest in the MENA region. Major projects in the education sector currently underway include expansion in schools, universities and educational facilities network. So all the teachers are provided with laptops and accessories and all the schools are very well connected to the internet. Qatar still has challenges relating to the number of qualified teachers and those with the necessary competencies to combine their digital literacy with pedagogical practices and instructional design. The ministry of education holds regular digital transformation workshops, but with a shortage of nationals in the profession need to bring teachers in from other countries.

For education technology the infrastructure is critical and should be part of the preparation when planning any new schools. They should have all technology. In Bahrain, they started a national project in 2005 to ensure the right ICT infrastructure was in place, while supplementing schools with the minimum devices needed. As well as introducing ICT as a subject, the government integrated technology into all subjects which meant providing teachers with the technology and the necessary training in the use of edtech. Teachers need access to the devices, be introduced to the applications, including free and open source materials and accordingly be supported with the training. The support system and the school leadership is critical in ensuring teachers actually apply the use of technology in education rather than devices and equipment being purchased but then under-utilised through lack of professional development.

In Zanzibar, as in many countries, dealing with the affordability and access to the internet is the biggest barrier, which they have met by using their Media Information Centre to record lessons. These studio-produced programs are then broadcast both on television and radio. The audio clips have been used on radio in the Tanzania mainland for early childhood programming. Educational programs on TV are also available, so there has been progress but overall the use of an ICT platform as a learning modality is some way off.

Education in Lebanon changed dramatically with the distinctive rise of e-learning, whereby teaching is taking place remotely on digital platforms. In Lebanon, a number of technological constraints hinder online learning. Telecommunications and internet infrastructures remain inadequate in many rural areas, where weak or unstable connectivity poses potential setbacks in creating distance-learning strategies. Using video-conferencing applications successfully requires a secure connection and stable bandwidth in the homes of both teachers and students; however, this is not always available. The Centre for Education and Training in Lebanon has developed a dedicated e-learning platform, though this is relatively recent and a lot more work needs to be done in making sure teachers are trained in the system and that students have access to the materials.

The Information and Communications Technology (ICT) Sector Support Program in Somalia ran from 2014-2020 has been a success story in accelerating economic recovery and creating jobs. One of the significant achievements of the program was the robust development of the sector with a variety of diverse stakeholders, including ministries, universities and communities, which helped to create an enabling environment for the growth of telecommunications countrywide. The initiative supported digital development in the education sector. For example, the project aided the Somali Education and Research Network (SomaliREN), providing connectivity to 50 campuses in some 20 universities in central and southern Somalia, Somaliland and Puntland. A new project is now underway with selected schools having ICT infrastructure investment and teacher training in digital skills to build confidence in the use of new technologies for education.

Jordan has formed a national committee for directing online learning and for the schools and universities to work in the standard and unified way. An important initiative in Jordan is a cooperation between the ministries of digital economy and education to allocate a budget over the next 5 years to cover the cost of purchasing laptops. The distribution will be done according to the government databases that identify the low-income families and prioritising them first. The program will target 300,000 students from low-income students with laptops and internet access fully paid for by the government to facilitate online learning. The Ministry of Education also launched a program called 'Learning Bridges,' an innovative blended learning programme, supported by UNICEF, to help one million students recover and accelerate their learning following the disruption caused by the Covid pandemic. It involves series of weekly activities based on the core curriculum that will be distributed by schools to all students from Grades 4 to 9 to accelerate children and young people's learning and support parents, teachers, students and communities to work together to adapt to the new normal of combining learning at home and school.

Equitable access and connectivity is now an essential priority for countries. They cannot afford to get left behind, as digital transformation accelerates we are seeing new innovations in education technology, particularly in the application of artificial intelligence and machine learning. The latest edtech trends are being revolutionised with a strong focus on connectivity, versatility, and student-centred learning. The top trends we are seeing now include e-learning, video-assisted teaching, artificial intelligence, learning analytics, gamification, immersive learning with extended realities, and social media learning. Technology in education has renewed the whole teaching and learning process. Especially e-learning, an educational tool that not only increases the accessibility and convenience of education but also changes the learning behaviours and students desires for education.

2.3 Digital Transformation & Post-Covid Acceleration

The Covid pandemic has accelerated the use of ICTs in education, especially given the emergency response to ensure the continuity of learning during school closures. Now, nobody wants to return to the pre-Covid landscape where decisions on edtech integration were often met with resistance or put-off for a variety of political and social reasons. New investments are being made in educational software and capacitating teachers to use it. Governments are working to improve infrastructure and have clearer policies relating to online and digital learning – the clock is not going to be turned backwards. They key now is to ensure teachers remain engaged in using ICTs, students are empowered, and technology is used not only as a tool but as a means to innovate and improve instruction. There is a real opportunity for students to use the technology to both learn and themselves become the creators of knowledge and new applications of the technology.

Another lesson from Covid has been how practice moves well ahead of policy. Teachers and educators responded to the disruption with the tools available and then realised how to leverage the technology to introduce new teaching practices. All without any policy guidance. Now policy needs to catch up and encompass the experience of the last couple of years. Policymakers can draw on the experiences of the education community in using open educational resources and the benefits of having universal standards and interoperability between technologies. Currently, the edtech space is too disparate with standards determined in the own interest of industry providers. Governments and multilateral partners would do well to determine minimum educational technology competencies that can then be adapted to local circumstances and environments. Such policy frameworks should also encourage the development of innovative teaching cultures and far more cross-border collaboration and sharing between countries.

Pre-Covid in Morocco they mostly took it for granted that the country had the necessary policy papers for teacher preparation and training. There was also an existing module component in the professional development called 'using ICT in the classroom.' The pandemic then exposed a lot of real world challenges, not least teachers who thought they were good at technology were in fact not trained in online resources and certainly not ready for the disparity between urban and rural areas or privileged and poorer households. Given the discrepancy between what is written in policy papers and what happens in reality in providing quality online education, then it is clear there needs to much closer coordination with the private sector especially the telecoms operators, internet service providers and edtech software developers.

The pandemic has certainly motivated governments to improve their infrastructure and technology. The fact that education was so heavily impacted meant that all people from administrators to ministers up to presidential level have expressed their concerns over how the supposed digital transformation of the last decade has not really happened. The pandemic has brought a sense of urgency to policymakers who are being pushed by parents and communities to deliver

digital implementation on the ground and not just in a policy paper. Covid has exposed shortcomings and accelerated issues. To ensure the continuity of education was a massive effort with many in the education sector making huge sacrifices to deliver content. Now the learners are back at school, nobody wants to return to business as usual and ignore the harsh lessons of failures in the ICT infrastructure of the last couple of years.

Cameroon's response to the use of technology in education has included the deployment of a platform where lessons are uploaded, and the addition of digital citizenship to the lessons. Teaching digital competencies involves the learners having a better understanding of what materials should and should not be used to give the students information literacy. The blended model is being employed as the school timetables have been adjusted in response to the pandemic with morning and afternoon school 'shifts.'

Zambia's new government now includes a ministry of science and technology to cut across all sectors in supporting the country's digital transformation. Within the ministry of education there is the National Science Centre which has developed their own learning management platform aimed at meeting the challenges of barriers to access, teacher digital competencies, and innovative pedagogies. As well as engaging learners and providing a forum for teachers to interact the platform requires headteachers to input school data which is extremely useful in helping the work of officials in the ministry of education. Continued investment in the country's ICT infrastructure is needed to achieve full school connectivity.

In Botswana, mindful that it is the rural areas which face the biggest connectivity problems, they have introduced the 'village connectivity project.' SmartBots is Botswana's new proposition to drive transformation across the society and is responsible for the digitisation of villages in the country, which includes high-speed internet. The ministry has expanded its program to provide teachers with laptops and learners with tablets. A new learning management system (LMS) is being developed to be used as a repository of accessible content. For ICT training a focal point person is identified in each school to receive the master training in digital competencies who can then cascade or roll-out training for the teachers. The systems are being put in place for when devices are delivered, with around 52,000 expected to be supplied in the near future.

In Uganda, the education system was not prepared with a policy on ICT for education nor a strategy how to handle ICTs in the classroom and the onset of the Covid pandemic has resulted in the development of a digital agenda strategy for the education sector. There are plenty of ICT interventions happening, but they need guidance and the support of a robust regulatory framework. Uganda did not return to full time schooling until January 2022 and prior to the pandemic teachers were generally reluctant to use ICTs, believing that it was mainly for those teaching computer studies. During the extended period of school closures it was the parents who reached out to teachers asking them to use online tools such as Zoom video classes. Teachers had to quickly adapt to using technology to teach and mobile communication apps were used to communicate between schools and families. With the return to school, there is a feeling in Uganda that they are some way behind other African countries in terms of technology in the classroom, school connectivity, access to devices and the use of e-learning platforms. The country can learn a lot from the kind of digital education activities we have seen in the likes of Ghana, Kenya and South Africa. School principals need to play an important role in being more proactive and the government certainly needs to start planning for digital and skills transformation in its education system.

For so many countries, affordability is such a major barrier to access and the making the most of the digital education opportunities. African countries must provide its citizens with affordable broadband internet on a massive scale. The internet has made it possible for knowledge to flow across boundaries seamlessly. By providing youth an affordable internet, African nations can equip their young citizens with tools needed to succeed in the digital economy. The digital economy is coming to Africa, and in doing so, it will bring big opportunities. By

investing in digital literacy and providing affordable internet to schools, it is possible to usher a new era of digital education in Africa along with a competent young generation that has the necessary skills to innovate in the global knowledge economy.

Sub-Saharan Africa has the largest coverage gap (those living in areas without mobile broadband coverage) at 19%, which is more than three times the global average. While internet access has become more affordable, particularly through mobile phones, costs are still high and unaffordable. Some existing retrogressive measures include digital taxation that has led to increases in internet costs, registration and licensing of online users that imposes high licensing fees. Many governments have been eager to increase their tax base, particularly from the telecommunications sector and some governments have slapped taxes on mobile phones. These costs are passed on to consumers, thereby raising the cost of accessing the internet. The lack of internet access requires immediate counter action by several countries especially given the overbearing effects of digital exclusion caused by the Covid pandemic. African governments need to recognise and nurture the true potential of the internet in driving inclusive economic growth and development, as well as digital transformation, especially in the post-Covid era. This calls for robust investments in internet infrastructure, digital literacy and refraining from taking actions that undermine the transformative potential of digital technologies.

Over the last few years the Qatar Ministry of Education and Higher Education has been focussing on several competencies as part of its reform of the national curriculum framework. One of these competencies is the role of ICTs in education and the necessary curriculum reforms to develop digital skills for learners. These skills include coding, programming, problem-solving and the use of artificial intelligence (AI). In line with this is the development of the national education platform to facilitate teacher-student engagement, as a communication medium and to make learning resources available for the kids. The next step is to digitise all learning resources. Many of the existing educational resources already have a digital version and to produce a rich environment further work involves creating digital elements for use on the platform.

2.4 Teacher Training for Digital Skills

Across the board, the Covid pandemic exposed the lack of teacher training in ICT for education and also the lack of digital savvy trainers in the teacher training colleges. So one of the biggest barriers to access has been the shortage of teachers with the requisite digital skills and training in the use of new educational software. Teachers need to be trained so they are comfortable in the use of devices and have the necessary skillsets to communicate to students in the language of digital and information technology. Then there needs to be ongoing professional development, especially in regard to accessing content, what is appropriate, what is in line with the curriculum, where that content is available and what safeguarding considerations need to be made. On this matter parents also need to be sensitised because they are concerned about what their children are accessing online and themselves are not skilled in distinguishing between approved educational content and the vast amount of online information that is not relevant and often harmful in the educational setting.

Governments around the world are now facing huge budgetary pressures imposed upon them by the cost of the pandemic and the loss of tax revenues. Although education budgets are generally holding up, it is often CPD that gets hit first when cuts need to be made. Ministries of education are now in a position where investment in ICT for education is an absolute necessity, but its integration will fail if teachers are not properly trained. And this training cannot succeed just on a one-off basis. Huge resources are needed to train teachers in the use of edtech and then provide ongoing support and continuous training that keeps apace with technological innovation to ensure that the investment in edtech is not wasted. Equally, teachers using educational technology need to have their own means of assessing the impact and success of what they are doing. If teachers cannot do this then it is likely there will be problems further down the line because the evidence of success needs to come from the front line of education – the classroom.

Recently the Ghana Commission for UNESCO and Global Partnership for Education (GPE) developed an online training program in digital skills to meet the challenges that teachers have using technology. Such training is not just about the competencies but to give teachers a better understanding of edtech as a tool and how it can support and enhance their work in the classroom. The experience is that most teachers have embraced it. So we need to identify the perceptions that teachers have of educational technology and gradually build up programmes and interventions to remove any negative prejudices.

Kenya has learnt many lessons about integrating technology into the teaching profession from the introduction of its Digital Literacy Program (DLP) since 2016. Early on they realised that teachers need

to be encouraged and have the time to learn how to integrate new technology. The implementation of a competency-based curriculum (CBC) meant understanding both the teacher-learner interaction and the learner-technology interaction to ensure the curriculum is applied with continuous teacher capacity building in the use of technology and designing innovative ways of teaching. Technology must be suitable for its purpose. The content needs to be available for teachers and learners such that the edtech can be integrated into teaching without the teachers having to search for materials. This can be fulfilled with an education cloud as is the case in Kenya – a single national resource at the fingertips of all teachers. That said, with online and open educational resources there is still a need for international standards and guiding frameworks that safeguard learners but also encourage the teaching profession to try new innovative methodologies that make the most of the edtech.

Another issue for teacher motivation is the financial implications of online and blended learning. Teachers have found themselves impacted with the cost of data due to an increase in the use of their smartphones for messaging and communications. Many teachers are having to use their own devices and spend more of their personal time assessing online and digital content for its appropriateness in lesson plans. Countries already have large education budgets, but are they getting the quality right? If teachers were subsidised as part of the shift to greater use of technology in education then it is likely they will be more motivated, which naturally improves quality. Once a teacher is motivated to integrate technology in the learning process then it creates a virtuous circle where colleagues wish to do the same and not get left behind in the journey towards digital transformation.

Like other countries, Ghana had different experiences between the private and public schools during the Covid pandemic, with a wide variance in the use of ICTs in education. One interesting experience was the implementation of the HP Innovation and Digital Education Academy (IDEA), whereby teachers were selected to improve their digital literacy and then pass these skills onto their colleagues. This first cohort of HP IDEA-trained teachers proved to be a success and could be expanded across the country to get as many teachers as possible to participate. One discussion within the National Teaching Council is the issuing of credit points or awards to teachers who create courses on ICT and digital literacy, which will motivate them further in their professional development.

To address digital skills in the teaching profession in Egypt, UNESCO worked in partnership with the ministry of education to establish a distance learning centre for the continuous professional development of educators, including principals and supervisors as well as teachers. The first component is the contextualising of the UNESCO ICT Competency Framework for Teachers (CFT), focussing on digital skills. One of the challenges is incentivising teachers to use the online training platform, so introducing a point system towards their professional development has helped. An important feature is collaboration and teachers building their own professional communities, which may lead to ICT champions who can then support the wider community.

Ethiopia has now established a digital literacy standard for teachers. The teacher development directorate within the ministry has to ensure ongoing assessment of the application of technology in education because knowing how to use the tech is not the same as teaching with it and communicating to learners the required digital competencies. So there is a progression in the professional development from the simple use of technology to be able to add value to the content and the pedagogical practices in the classroom using edtech. The digital literacy standard is effectively a way of identifying the gap between using technology and applying it to improve learning outcomes.

Teacher education in Kenya has experienced both successes and a myriad of challenges. In Kenya, teacher education occurs in teacher training colleges and universities for pre-service teachers and at school level for in-service teachers. The change in teacher training curriculum has been a recent major reform in the Kenya teacher education system. The 21st century teacher needs to be equipped with knowledge, skills and content that will enable them adequately prepare learners to adapt and compete with the contemporary societal demands. It is recommended that the Ministry of Education should ensure investment and adoption of modern technology in teacher training institutions and schools to enable teachers learn the 21st century skills that they will transfer to the learners.

The experience in Sierra Leone has been that one of the major barriers to ICT integration in education and as especially exposed during the pandemic, is the lack of digital skills amongst teachers. So they have designed a new policy to guide teachers and equip them with the necessary technological know-how. This will become part of pre-service training programs and the emphasis is on the teachers to educate themselves in edtech as part of their professional learning. Hence, to become a teacher in Sierra Leone you must achieve a certain

level of digital and technology skills for education. Certification will also be extended to in-service training as part of the country's upgrading of its CPD awards.

Somalia has improved its edtech capabilities since the onset of the pandemic. The new teacher policy was approved in 2021 to include digital literacy and the use of technology in the teacher training curriculum and April 2022 sees the start of the digitisation of the training syllabus. They have found that teachers need a lot of help in improving their pedagogical practices. More needs to be done in terms of competency with technology, which as much as anything involves changing the culture from old-fashioned methods to more modern techniques where the use of ICTs can be embedded into the teaching and learning process. The country has a long way to go given its recent political history and is keen to start partnering with the technology companies, such as *HP*, to improve innovation in the education sector. As well as improving subject knowledge in some areas it is now critical that Somali teachers receive more pedagogical and digital skills training.

Ghana's comprehensive transformation of teaching policy and professional standards began a few years ago to ensure up-to-date competencies and manage continuous improvement as part of their overall strategy of improving the country's educational system. They also developed national teacher standards and a licensing program alongside their CPD system. This changed the whole dynamic in the way school leaderships manage teachers. In response to the urgent need for accelerated digital transformation they have developed a new curriculum for pre-service teacher training. Covid introduced a new dynamic, especially for remote teaching and learning competencies. Now a huge effort by the ministry of education is being implemented to help teachers acquire the competencies for blended learning. This should be in harmony with the new demands of the fourth industrial revolution and the need for more critical thinking and communication skills. In Ghana they now believe that, in a strange way, Covid has strengthened their hand in building more resilience into the system, preparing for the future, and facing any new emergency.

In Kenya, the education management institute has already put teacher training online and they have no intention of returning it face-to-face because they have reached so many more teachers across the country. Generally, the country is well connected, and smartphone usage is widespread though the cost of data is fairly high. In higher education they are already seeing the impact on teacher training in universities, with an appreciation of the new normal and the need to properly assess the best and most appropriate edtech. The biggest discussion in the country now is the cost of connectivity and although institutions are able to respond in their negotiations with the telecoms operators, they have not designed a solution for families who now have to bear a greater burden with online learning at home.

2.5 School Leadership & Teacher Communities

Officials in the meeting referred to the importance of leadership in government and in schools. The leadership is needed to deliver policies for access and connectivity. A lack of vision or leadership, especially during a time of crisis, such as the pandemic, can prove to be the biggest barrier to access. Those educators who must deliver remote or e-learning need to know the vision and plans for the education system – without which it becomes impossible to prepare teachers and learners. A coordinated strategy for connectivity across the school system and the zero-rating of educational content in partnership with the operators is a prerequisite to any edtech policy. Thereafter, the most common barrier to access becomes devices. Governments have been doing their best to provide devices, especially to those students and families most in need. But even for a wealthy country it is extremely challenging, if not impossible, to provide laptops or tablets to every single schoolkid.

Regarding school leadership, the common experience of officials and inspectors is simple: where the school principals embrace technology it succeeds, where they do not it fails. Motivated

leadership is critical. Without a digital strategy and supporting leadership, a school's approach to edtech will more likely fail and certainly result in wasted resources. A digital strategy should be led by teachers and senior leaders in terms of outcomes, and it should tally with the budget of the school. Finance is critical but it must be the facilitator not the driver of a digital school strategy. At the heart of any such strategy is teamwork given that educational technology needs the teachers motivated, it needs in-house IT support, it needs consideration of safeguarding, the special educational needs coordinator must play a key role, and reporting mechanisms must be in place – back to both parents and the district or ministry of education. Each stakeholder has a spectrum of considerations and questions that are important to their priorities. Combined, these help a school understand what is needed and to ultimately measure the impact of their long-term goal.

It is the school principal who drives innovation and has the ultimate oversight of the quality assurance process for assessment. Strong leadership will ensure that such quality assurance is done so in a digital format and leaders can now provide teachers with relevant information in real-time through a variety of technologies. Students that are not engaged are not likely to be learning. Leaders need to understand that schools should reflect real life and allow students to apply what they have learned through the tools they are using outside of school. Digital leaders understand that we must put real-world tools in the hands of students and allow them to create artifacts of learning that demonstrate conceptual mastery. This is an important pedagogical shift as it focuses on enhancing the essential skill sets that society demands: communication, collaboration, creativity, information literacy, critical thinking, and problem-solving.

Many countries have experienced ICTs being deployed or devices being donated by companies to schools, but they were not used properly because the school leadership were not supporting the teachers in digital literacy or simply have not seen it as a priority in the past. Lessons have been learnt here and every policymaker and government implementer knows that any successful ICT integration in education must start with the school leadership. This is why we see ministries of education implement leadership training, mindset and change management training and an emphasis on the critical importance of digital and information literacy.

Motivation to deploy and integrate edtech into teaching is a major issue of concern. For example, an experienced teacher may say that their students have done very well over the years with their traditional front of classroom teaching. So what improvements is all this technology going to make to learning outcomes and student development? Here the issue of motivation lies at the door of school principals under the guidance of their ministry of education. The school leadership needs to overcome the challenge of transitioning to more e-learning and ensure that their teaching staff are better prepared in the use of educational technology. If the principals are not motivated then it is unlikely the teachers will be.

In Cameroon, they have found that when a school principal or school administrators is motivated in technology, there is a high tendency that school the school is ready to integrate ICTs along with the teaching of computer science and technology. So many of the teachers and school administrators who are not computer literate find it difficult to integrate ICT in school. So the government started with in-service training to administrators, with a range of programs on how to use technology and how to facilitate the school administration to equip their schools and use online services improve the performance of their duty.

Namibia, instituted a program, called innovative principal and innovative teacher to support school leaders in driving digital learning. Namibia, a big country with relatively small population has 38 digital centres countrywide supporting about 1900 schools. They have reached more than 80% of the school principals to equip them for this innovative principal program, which was supported by *Microsoft* and *Intel*.

Currently Lebanon has a five year strategy for school leadership training for administrators and principals. As recommended in a joint report between the Ministry of Education and Higher Education, public school administration requires restructuring in order to ensure that more experienced school principals with higher academic qualifications are in place. It is vital that school principals receive increased and systematic professional development training opportunities. In order to further improve public school administration, it is also important to strengthen school-based management by elevating the role of the principal to a strategic decision-maker and agent of school change and supporting a more decentralized approach to school management.

One comment from Jordan about school leadership was how the ministry of education is looking at the concept of 'middle leadership.' Middle leaders (subject leaders, middle managers, heads of department, curriculum coordinators) play a crucial role in developing and maintaining the nature and quality of the learning experience for students, but the ways in which they do this are strongly influenced by the circumstances in which they work and the evolution of their continuous professional development. The government is still working this through with partners such as UNICEF and overall

they feel that it is an important entry point into school leadership, as it is not just the principal or vice principal that can motivate and empower teachers. Generally, there is still little research on the effectiveness of middle leaders and CPD programs do not usually make the distinction between a subject teacher and a subject leader.

One of the most successful experiences during the pandemic has been the spontaneous development of teacher communities who have come together to share and solve their problems when using technology and trying to provide online education. Such teacher communities have helped with technical issues and developed further to include teachers uploading video lessons or referencing sources of digital content. Teachers have also been learning from other methodologies for keeping learners engaged while online as often kids lose interest after about 20 minutes of screen time. The issue of student engagement will continue to be a challenge until we see more advances in the techniques of digital instructional design. The advantage of professional learning communities is that they can also be used to engage with parents from time to time to address the particular challenges that may arise around language or special needs or the use of the camera in online lessons.

The issue of psychosocial support for teachers needs to be addressed. Screen fatigue, the considerable time spent on lesson planning and the design of new instructional techniques using technology all put more pressure on teachers. Here the role of the school leadership team is critical. Teachers will not necessarily be equipped with the guidelines on how to deal with online safety and cyberbullying – these are new demands being put upon the profession. As mentioned by several participants, professional learning communities have sprung up for teachers to help each other but now is the time for policymakers to consider the need to formalise community platforms – providing a framework for the best practices when integrating technology into instruction.

What has been learnt from many discussions in the Arab region is not very different from other parts of the world, including Western countries in the European Union. While the economic situation of the countries may be different, the challenges for teachers are quite universal, because even in developed countries, teachers were not really using ICTs on a regular basis prior to the pandemic. And if they were using education technologies the usage was quite limited. The region has a considerable diversity where there are some countries that are doing very well in the Gulf area that have national policies regarding the use of ICTs. In other countries and within some countries they are lagging behind, leading to a discrepancy with regard to what teachers can do and what challenges they face. From one UNESCO study in the region, they discovered that the best way for teachers to learn to engage with ICTs, from a pedagogical perspective, was through the support they can get from their peers, from their fellow teachers, and sometimes from the students. This has proved more effective than some government campaigns.

ICT for education in Egypt is underpinned by the Egyptian Knowledge Bank (EKB) which provides course materials, subjects covered by video, tutorials and support for students to achieve their learning outcomes. The ministry of education also has its own channel for materials, lessons and educational resources, though they found during the pandemic many teachers volunteered to produce their own materials, but these were not necessarily according to the strategy of the ministry. In a country of 100 million people, demand on the networks, during lockdown, hindered the use of online learning resources and also increased the need to ensure a safe online learning environment. Teachers have needed to be trained on copyright and intellectual property because they use and share materials they find online without being aware of all the risks.

An important initiative in Nigeria launched by the Federal Ministry of Education is the “Ignite Platform” to help educators put lesson plans together, collaborate and share easily. The platform seeks to

empower educators with ready tools, knowledgebase and much needed material, templates and formats that will enable them deliver learning in a more agile, productive, and efficient way, improving the quality of education. One of the major goals is to ensure continuous availability of resources for lesson planning regardless of network conditions in the location. There is also a library of resources, materials and knowledgebase (curriculum, past questions and answers).

South Africa now has a professional development framework for digital learning that highlights the competencies teachers need to achieve. For example, one of those competencies is the participation of teachers into digital professional learning communities – whether local or global. The idea is to encourage teachers to collaborate more with their peers to better accelerate ICT integration in the classroom which requires a motivated teacher with a deep understanding of the benefits and potential harms of edtech tools. Within the digital framework there are modules that the teacher can take to self-assess and realise what level of intervention they need to capacitate themselves. If teachers share their experiences with each other and are exposed to what is going on in the profession around the world, then it will uplift their competencies.

2.6 Risks, Data Privacy & Edtech Awareness

Data privacy in education is an issue that must be dealt with by governments. Frameworks need to be in place to protect the data of students and teachers. The educational platforms and learning management systems are collecting enormous amounts of personal data. Who owns this data? Although many countries have strong protections in place regarding data privacy in education, we find developing countries much less likely to have a robust data privacy framework for learners. The issue of what type of platforms are being employed came up regularly amongst participants who are concerned that we simply do not know the levels of security built within these platforms and how vulnerable they might be to hacking. For some learning platforms, the technology providers have given assurances about confidentiality and protection of student data. But there are an enormous number of applications in which the teachers do not have any control over confidentiality and data privacy.

Ultimately, it is recognised that we cannot police the internet completely and hence must work towards a values-driven approach. A starting point for this in education is to have online safety integrated into the curriculum as they do in South Africa from grade 8 to 12. This is all part of an overall strategy called “cyber wellness” that looks at safety, security, ethics and broadening these to a form of cyber actualisation which brings about a more positive and influential contribution to the online world. Policy makers and educators should be looking at how they integrate cyber wellness into core subject areas and then create meaningful content for the learners. This in turn allows educators to have a better insight into how students are behaving online.

Mental health concerns regarding the screen time and usage have led the likes of UNESCO to frame gaming in the context of a disorder depending on the amount time spent playing. Digital technology has an addictive personality. Associated mental health issues around isolation, depression and anxiety are symptoms that have justified such classification. The addictiveness of digital technology is not just the unique domain of students and young people – the devices themselves, the software, the application are all designed to grab you and hold you. These are smart devices working with the reward centre of the brain, forming new habits with new frequencies. The apps, the games, the scrolling through social media are all designed to offer emotional reward. We need to be acutely aware of this in the context of education and pedagogy.

Online bullying, trolling, blatant insults, and offensiveness, especially via social media platforms is a deep concern. For the good of student well-being, dealing with this needs to be taught along with how social networks can be leveraged by the teaching profession for the betterment of education – such as important messaging to relay timetables and content or forming collaborative groups. A necessary policy is to have social and emotional learning (SEL) built into instruction.

Dealing with complexities such as data privacies and digital footprints is something that requires ongoing education and mentorship. Students need to be taught what sites are secure and how to recognise those that are not; how to manage their own personal confidential information and educators should be looking to enforce this culture of experience. A teacher cannot control the online activities of a child out of school but can provide the direction, case studies and examples of how harmful content can be damaging, of how their personal identities and privacy are fundamental rights and that they must protect for themselves . These are cultural challenges as much as technical ones. Such cultural challenges will have a great deal of variance depending on geography. In some Middle Eastern countries for example, maybe more conservative families will not accept their girls and daughters participating in online video-based activities.

When discussing blended learning and digital technologies there was a great deal of emphasis on the quality of education, but just a few of the

participants referred to the quality of life. This may involve having fun, playing sport, interacting socially, and developing new extra-curricular interests. Another consideration when formulating online learning policy is the enormous cultural diversity that affects teaching and learning methods along with the nature of student interaction. Instructors of online courses need to have strategies that address diversity in the virtual learning environment and policymakers need to appreciate the challenges that teachers encounter in a multicultural online environment. Learning platforms and tools should be friendly, intuitive, and safe from discrimination and prejudice.

Given that much of the edtech on the market has been developed by technologists and not educators, there is often a gap between what the education system needs and what the technology provides. Policymakers and educators are finding themselves in a position of bridging the gap. The educational technology market changes with the times, based on innovations, trends, research studies, and data. Career and technical education, data collection and analysis, and social emotional learning, are areas that are growing and in demand, which should prompt the development of technologies that will fill in these gaps in edtech. The digital divide is no longer just about access to devices and connectivity, it is increasingly about the choices made of the technology used in the classroom and online. If these new forms of digital divide are left unaddressed, the gap between the under-connected and the hyper-digitalised will widen, aggravating existing inequalities.

An important point for edtech developers is the issue of language, especially when using technology for assessment and evaluation. English dominates the tech development world, and this has proved to be a challenge in many countries where they would like the assessment in their own language – Arabic for example. Egypt has online assessment tools that they have used in secondary, STEM and vocational schools. Online assessment is judged by specialists from the Egyptian Examination Centre and some schools can monitor students, by camera, while taking exams online. There are tools for open questions in English, but not yet in Arabic. Other participants in the meeting from Arab countries also commented on this bias in edtech that needs to be urgently addressed.

2.7 Impact, Integration & Change Management

Introducing technology in schools is more than just the infrastructure and the training but requires an holistic approach that incorporates change management and an appreciation of the enormous diversity of educational technology. Equally, learners are now digital natives who still need guidance and mentoring on the how to apply their knowledge of the digital space, accessing online resources and have an appreciation of the potential harms of bad digital information and actors. Schools should consider a digital empowerment team or change agents or edtech specialists with an understanding of integrating technology into the educational setting.

With digital transformation having so many factors and moving parts in the education system it becomes the responsibility of policymakers to set performance indicators, have continuous monitoring and carry out impact studies. Educational technology involves the ICT infrastructure, devices, teacher training, software, digital content, instructional design and a wealth of detail that can impact pedagogy and learning outcomes. Ministries of education are encouraged to carry such impact studies to truly assess whether all this edtech is being used efficiently and effectively. Is it making a difference? Is it having an impact on improving the competencies of learners? Is money being wasted or spent wisely on the technology? How are schools and the system as a whole managing this digital and skills transformation?

Several participants in the break-out groups pointed to the fact that huge social changes take place during the career of any teacher which is why continuous training is required just to keep up with those changes. Covid has accelerated change, compressing demand for new programs, reforms, and digital transformation into a very short period. An important policy recommendation is for governments to ensure they update their compliance frameworks for CPD to account for digital skills and online teaching competencies. This helps decentralise the mode of delivery and gives teachers the reassurance of standardisation. Policy makers need to be cognisant of how every new technology in education, first needs technical training before changing teaching methods. Then, addressing digital pedagogies that deepen learning along with teachers having the skills to change lesson designs all need to be part of a coordinated change management strategy.

An important point raised about devices is their lifespan – both the economic and useful lifespan. Based on manufacturers warranties the lifespan may by three to five years and then the device needs replacing. The accepted industry average is four years. Experience on the ground is that this is shortened in the educational setting where a laptop or tablet is not always robust enough to cope with the rough and tumble of being looked after by a young person. This now sits alongside the fact that hardware is becoming more difficult to buy. The semiconductor shortage continues to wreak havoc on supply chains. Tech executives predict the shortage could continue to impact the production

of computer components for years. For schools and universities, extending hardware lifecycles is the best strategy for disruption management. For budgetary reasons, many countries are opting to procure tablets for students, but these have shorter lifespans than laptops. It may prove to be a false economy which will hit home hard when it comes to replacement.
The choice of in-classroom technology is critical. Many countries have invested heavily in interactive whiteboards, for example, but often they are not used by teachers who will continue using the traditional blackboard. There is a danger of purchasing just for the sake of technology and not for pedagogical reasons. Governments can be seduced by bright and shiny tech, sold to them as the answer to their ICT problems, but any technology that does not support the teacher will more likely fail. Whichever technology is procured, teachers need to see the educational benefits in the classroom, otherwise huge resources go to waste and the perception of ICTs in education is lowered.

An key aspect of e-learning is the need for instructional design of digital content and assessment. Universal design standards that meet pedagogical requirements and also ensure inclusivity for all types of learners do not form part of existing teacher training programs in most countries, where in most cases the policy framework has not been laid out to cover instructional design for e-learning. The challenge of instructional design is the need to answer so many questions beforehand, such as what kind of technology is to be used online and in the classroom; how is that technology integrated into the teaching process; what outcomes are expected from the edtech? Seemingly, a step-by-step approach is best, starting with the simple use of edtech and digital content to an upper level that involves critical thinking and problem solving whereby students can start developing their own materials using digital resources.

The South African government has had the political will to buy and distribute ICT resources but not all schools have been covered, though the focus has been on the historically disadvantaged communities. Digital resources in the form of laptops as well as tablets have been distributed secondary schools and a select few primary schools with a solution based on the classroom learning environment. Covid meant responding to the needs out of school and with all learners having access to devices. This requires policy and practical adjustments such as the shift in ICT training that previously focussed on device utilisation, to ICT integration in teaching and working with online platforms.

In Morocco, the GENIE program is a national strategy for ICT in education based on four main axes of infrastructure, teacher training, digital resources and development practices. Infrastructure involves the equipping of schools that includes multimedia classrooms connected to the internet. Essential to the success of the program has been teacher training in the use of edtech as a pedagogical tool. Digital resources particularly relates to content and the provision of materials in both online and CD ROM format. The goal of development practices is to ensure a good accompaniment to users through four components: awareness; information and demonstrations; support; monitoring and evaluation. The main challenge they have found in implementing the GENIE program has been the readiness of teachers to integrate ICT in education and to innovate their practices from the digital competencies they have learned.

Morocco had the National Charter for Education and Training policy from 2000 to 2010 and now there is the Government's Education Strategic Vision, a reform program running from 2015 to 2030, which includes a substantial focus on the best ways to use ICTs in education. The impact of the pandemic exposed gaps between what is expressed in the education reforms and the real life experience of educators. The government has implemented multiple measures using social media, online tools, an education portal, video lessons and the use of broadcast media to distribute content. The Higher Council for Education, Training and Scientific Research has recently released a report on how successful these measures have been with the main conclusions being that there is not enough ICT equipment across the education sector and that families have found it challenging in meeting the need to provide their children with the necessary devices.

The Digital Literacy Program (DLP) in Kenya has now equipped 98% of primary schools with tablets for learners and laptops for teachers and content through the Kenya Education Cloud. At the secondary level there has been further investment in ICT and computer labs in schools with considerable effort on teacher training in line with the new competency-based curriculum and monitoring of digital literacy in schools. They have realised that a lot more research needs to be done on the impact of the ICT integration policies and now there is a need to audit these policies to evaluate their effectiveness.

2.8 Pedagogy & ICT4E Implementation

On the question of innovative pedagogical practices, such as adaptive instruction, one comment was made that in fact not all teachers are able to distinguish between pedagogy and their particular subject knowledge. How to best implement technology requires an understanding of the difference between these two concepts. Of course, pedagogy is essentially how to teach which means it is the art of interacting with a student to get them to take a willing part in their own learning process. So proper ICT integration does have the potential in developing innovative pedagogical practices by helping to determine which techniques are better, what the student needs and promoting a more student-centred form of flexible learning. Critically, one cannot first choose a pedagogy and then a technology because pedagogy is the thoughtful combination of methods, designs, interactions, learning environments, activities, assessment and the educational technologies.

The pedagogical challenges of conducting an online lesson remain. The conditions change completely for the teacher, conditions that have never been trained or prepared for: the home environment of the student – is it a good learning space? Then there is the actual cognitive presence of the students. How much are they learning and what tools does the teacher have to answer that question? Another perspective of the influence of Covid on thinking, is that it has been an opportunity for people to re-evaluate the significance of technology, how it can be used in education and how we cannot progress without integrating it both effectively and ethically. A more blended learning future will inevitably impact upon pedagogies and classroom management as well as demanding new skills of the teachers as part of their continuous professional development. The big policy question is how do we create a culture of active learning and encourage students to actively engage, particularly through the new media, video, and e-learning platforms?

Interaction lies at the heart of education and that means teachers require the skills to integrate technology into their teaching and learning such that students are engaged. The experience of online or remote emergency learning during the pandemic has raised serious concerns about interaction in virtual learning environments. It is a major issue and key questions need to be addressed by policymakers. For example, how much online learning should be asynchronous when synchronous teaching is better for students to retain and apply materials through the process of discussion? The synchronous learning experience helps ensure appropriate pacing of the delivery of materials, rather than students binging on multiple lessons in a short period of time. Ultimately it returns to the digital skills and literacy of the teacher who can then determine what works best in terms of how to ensure the most interactivity using video, screen sharing, virtual hand raising, small group discussions, chat and crowd-sourced questioning.

Several participants in the meeting commented on the importance of schools collaborating with edtech companies as part of any government's digital education strategy. Educators are generally great collaborators, but when it comes to working with commercial suppliers school principals are more wary. Co-production – schools and edtech companies working together to develop technologies – can be risky. Done right, co-production benefits the school as much as the supplier, giving preferential and cost-effective access to state-of-the-art technologies. If schools are to benefit from evidence-based technology they must give the companies the opportunity to engage with them. Given the demands on school leaders the feedback that the technology companies receive is often limited. So it is important to address some key questions: what are the vendor's real intentions? Does the project align with the school's digital strategy? What are the expectations of teachers in the school and are they being given ownership of the edtech implementation?

The successful integration of ICT for education must be tightly linked to the role and practices of teachers. Overcoming tech resistance requires for teachers to have input and ultimately ownership of the implementation of technology. Edtech is not straightforward, if anything, digital technology is more of a headache for teachers than ever. On the one hand, schools are bombarded with claims from software vendors and technology enthusiasts about the power of various new technologies to transform what goes on in the classroom. On the other hand, the impacts of technology use on teaching and learning remain uncertain. Good technology use in education is very tricky to pin down. The implementation of digital technology in schools often fails where there is no genuine purpose for its use. Implementation works best when teachers start by

identifying a 'real-world' problem. Technology works best when teachers work together – talking with each other and getting the whole school community on board in working out what to do. Developing technology use should be a collective responsibility for all staff, students and parents.

The time difference between the planning an ICT for education strategy and the implementation of that strategy was especially highlighted in the meeting. The nature of government is that a sector strategic plan can go through a great deal of consultation and review. By the time it comes to implementation the type and availability of technology will have moved on considerably. Innovation moves quickly in the tech sector. Computing power doubles every 18 months. Some countries started planning when we had 2G mobile networks and now we are entering into a 5G world. The experience in Namibia reflects this challenge, whereby they developed a 10-year strategic plan and by the time they came to implement it the ICT sector had moved on. Officials were addressing issues that were no longer relevant and they realised that for edtech the strategic sector plan was too long, and they needed to have shorter implementation targets. For governments this can create further challenges with resources when budgets are also based on long-term plans.

The timing of strategic plans and the program for implementation also has an impact on the relationship between government and private sector partners. At the beginning of a major ICT for education project, the funding that is put in place is usually done in phases. Only once phase 1 has been completed, tested, reviewed and signed-off is the budget released for phase 2 and so on. This is where a gap in time for implementation can impact the nature of the partnership with private sector implementing partners. There will always be several industry partners given that are dealing with infrastructure, hardware & software, and they need to invest their own resources. If the program does not run on time then the industry partners cannot just sit on the side-lines and wait, they move on to other projects. This has been in Ethiopia and Kenya for example. Governments have many priorities and there will always being something else that comes up where money needs to be urgently re-directed. If the next phase of a project does not have its own dedicated budget in place then its implementation will often be delayed as the responsible department, such as ministry of education, has to return to the Treasury. A clear policy recommendation is the ring-fencing of budgets that have committed allocation to specific projects to ensure completion of implementation.

As educational technology develops we are going to see more emphasis on student-centred learning, that shift the focus of instruction from the teacher to the student to develop learner autonomy and independence. Learner-centred instruction focuses on skills and practices that enable lifelong learning and independent problem-solving. The more attuned students are to technology, the easier it becomes for them to explore opportunities and build skills that can help them in today's competitive world. The important issue for teachers is how to use the technology creatively to boost student engagement. Options to do so may include gamified learning; digital field trips (e.g. Google Street View); integrating social media; creating digital content; critiquing web pages; and incorporating multimedia into lessons.

The student-centred approach has been gaining more traction, especially with the impact of Covid, where many teachers are seeing improvements in the quality of learning with the proper implementation of what some call the flipped-classroom. The students get an initiative-taking role in learning while the teacher addresses critical topics and meaningful interactions with the students. The key features are individual study designed to increase curiosity; interaction with the teacher which can be further consolidated using communication tools such as WhatsApp; and application or implementation of learning through collaboration and completion of assignments.

In terms of content development, officials have learnt that online resources and materials must be replicated and used offline. A single digital platform can store all the necessary curriculum content which should be available for download by any registered school user. The school campus or even local community centre can be an access point for learners to draw on the content and benefit from having the materials in digital format while they are offline. This method of having online nodes is becoming increasingly common in sub-Saharan Africa to help rural areas where access and connectivity is far below urban areas and what is required for education. Educational content is very data intensive, as is the use of e-learning platforms, especially when introducing video lessons.

There is now a clear trajectory with the increased use of technology in education and more focus on digital learning, yet for many it seems that trajectory is stopped in its tracks when it comes to assessment. It is clear that the form of in-school examinations cannot be simply replicated digitally or in a virtual space. The nature of assessment needs to be adapted to reflect the disruption caused by online learning, while maintaining its authenticity and reliability, especially as a measure for students going into higher education. Alternatives to traditional examinations may include multiple choice timed questions or a structured virtual

examination. The latter is based on experiences from the health sciences which test clinical skills performance and can be adapted with a series of integrated tasks in a virtual environment. The initial set up and design is complex and time consuming as tasks need to be modified for the online world, yet once achieved can provide a robust foundation for assessing communication skills, practical skills, data interpretation, teamwork and critical thinking. In short. traditional examinations cannot simply be supplanted to the virtual environment, the means of assessment needs to significantly adapted and then accredited to be proper means of student evaluation.

As new online learning policies are being developed, it remains that the biggest challenges are in the technical and vocational education and training (TVET) sector. TVET curricula are based on specialised skills depending on the needs of the labour market and policy makers have found it difficult to implement blended learning when faced with the required mixture of theoretical and practical course content. Online learning is conducive to theoretical coursework but the practical elements of TVET are then dependent on the facilities an institution has available and how those facilities have been impacted by new Covid health measures. Training organisations have been searching for the simulation programs to deliver learning objectives, but these remain limited across the broad spectrum of vocational courses, as well as being expensive in many cases.

Quality assurance is another key consideration for policymakers and educators when integrating technology into education. Often in the early days of implementing edtech quality assurance is missing and only when questions are asked about the impact of the technology on outcomes does the question of quality get addressed. In Jordan, the Queen Rania Teacher Academy developed a quality assurance system that mapped with the learning and set a review process. Evidence-based research could then be carried out on the basis of data collected, surveys and focus groups.

New technologies in education bring about improvements but also have their limitations. From the many studies UNESCO and other UN agencies carried out over the last two years, what has come out powerfully is that teachers and learners felt that what is missing is the face-to face-interaction. The school is a community where people enjoy being with their fellow peers within a physical environment. When we talk about the interaction that the new technologies make possible, we need to understand more about how the edtech functions. Teachers need to get an in-depth understanding of the different possibilities, because there are interesting and endless possibilities. But we also need to understand the technology cannot solve everything and cannot replace the role of the school as social factor. Furthermore, technology should be also considered with regard to the age of students. Foundational skills, like reading, writing, numeracy should come before handing out tablets to young children. Technology can be used, but it cannot replace the ability to write using pen and paper.

2.9 Closing Statement

Mayank Dhingra

This closing statement in conjunction with the presentation in Appendix B.

Mayank Dhingra gave thanks to the opening speakers and all participants in the meeting, making special reference to the robust and energetic discussion in his break-out group. HP has looked at education, not from just a product point of view, but from a future and pedagogical point of view. So people are sometimes surprised to see a product company, that actually offers so much more in the education space. The education sector is being assailed by incredible forces right now which is producing a period of creative destruction. This includes catalysing innovation and so much happening, whether in blended learning content, digitisation, the creation of flipped classrooms and modular credentials. These are not new concepts but have suddenly been accelerated because of Covid. This just the beginning and we are going to see a huge level of personalisation coming in due to machine learning. Artificial intelligence is going to seep into the classroom, campuses have already become boundary-less, and are going to become

even more so. The moment virtual reality comes into the classroom, there will be the creation of an equitable distribution of knowledge for every child. A student sitting in Ethiopia interacting with one in Singapore, solving global problems at local scale.

The ask of teachers is so different from what it was just a few years back, but we are doing a disservice to teachers if we are not equipping them for this new future. More needs to be done to support them. If not then some will feel left out, and some ill-equipped for this new environment. To counteract that, HP has implemented a program called HP IDEA – Innovation and Digital Education Academy, currently running in 15 countries. The main objective of this program is to create digital fluency for teachers to help them embrace technology, but equally instil in them an innovation mindset and an inner resilience. We have seen that some of the best outcomes are being done by teachers who do not have the best resources on hand, but they just have a burning desire to maximise the impact of what is available to them.

HP did not want to create a programme that was fly by night and nor specifically about HP products. So the program includes a one year pathway to become an IDEA Fellow. This is a rigorous pathway of one full academic year where HP supports the teacher through this entire process. The second pathway is a more compressed version of the college PID associate program. The good part is that HP IDEA fellows are supposed to oblige the PID associate program. When the whole school gets involved, students get involved and with projects that contribute to solving digital pedagogy issues. The reason it has been possible to implement this in so many countries is because it is aligned to the SDG goals, in particular the education pillar – SDG 4.

There are four critical objectives that truly move the needle for teacher development in digital innovation and pedagogy. Each national launch is based on a rigorous study of the country's individual strategic objectives around education, and what it takes for the program to align with such national goals. The feedback from educators has been extremely encouraging, particularly because coursework is taken from the Graduate School of Education and University of Michigan. Teachers take this impactful journey for a whole academic year. In addition to the existing fifteen countries where HP IDEA has been implemented, four more countries are being added during the first half of 2022 with more to follow throughout the year.

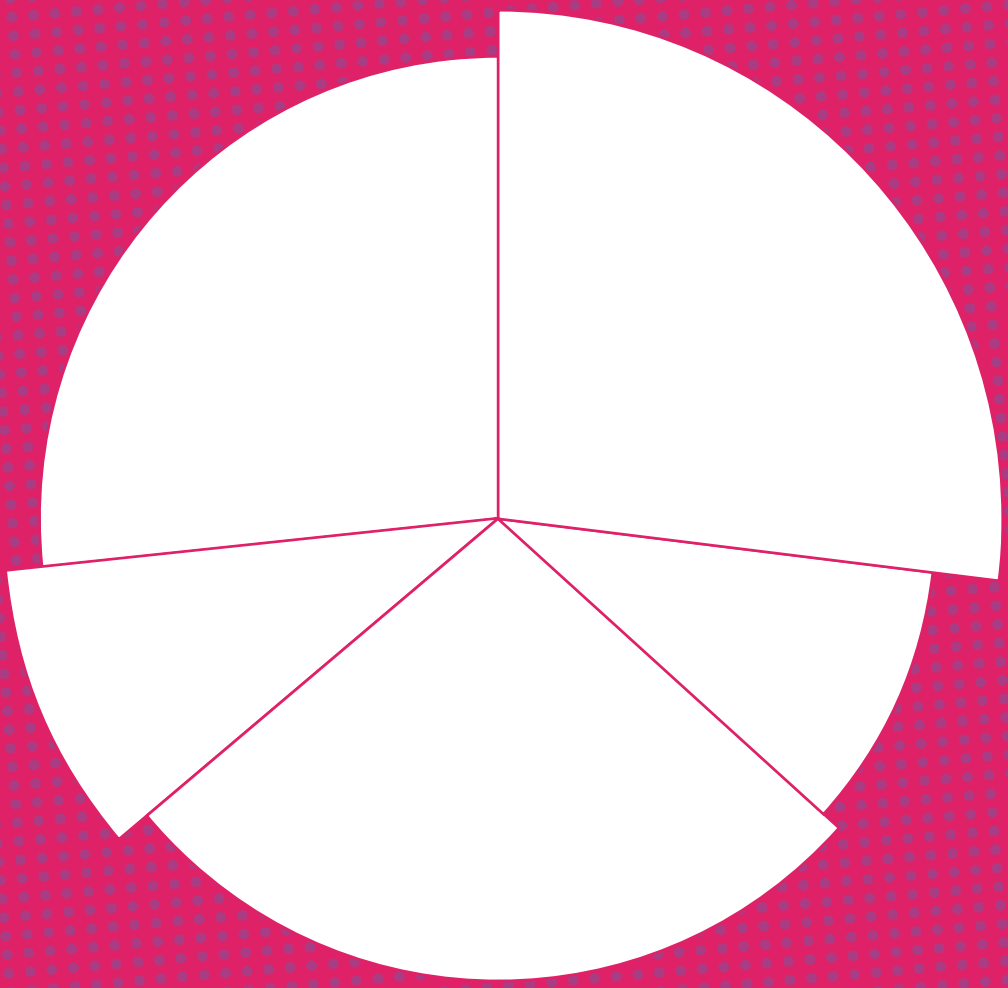
A snapshot of the progress of the program includes: almost 600,000 students being positively impacted; 20,000 teachers on one of the pathways of the program, and 500 schools experiencing the implementation. For example in Nigeria the program has been launched and endorsed by the Director General of Education and in South Africa, it has been running in 49 schools across all nine provinces. Suffice to say in each country, HP IDEA has endorsement from the ministry of education. Teachers are empowered by the certificates they are awarded, becoming HPI Fellows. Furthermore there is another instructional program called HP Literacy Attainment Coach to improving literacy attainment through artificial intelligence, targeted intervention, and professional learning. A recent McKinsey study showed that just four months of unfinished learning is enough to put students back two years. The good news is that with the proper intervention and a solid reading program we can allow the top students to get more enriched, and we can close the gap for struggling students.

The HP Literacy Attainment Coach includes rapid diagnostics, using technology with eyeball tracking when a student is reading, giving a 99% accuracy that would normally take an inspector three weeks to assess. After that assessment comes targeted instruction with professional development for teachers and intervention through literacy experts; then coming back every three months to do impact measurement. This is running in seven countries right now, almost all of them with the ministries, one or two of them with the local NGOs. For example, in Gambia, where the Grade 3 students were assessed, the non/ low readers, are down from 83% to 59%, in just six months. Non-readers have gone from 71% down to 47%. Average readers have grown to 22% from 8%, and for the first time we are seeing a group of students coming in at well above average. At the granular level (slide 20), from a sample in Ghana, each circle represents a child, some stabilising and many improving, including students moving from below average to above average in literacy.

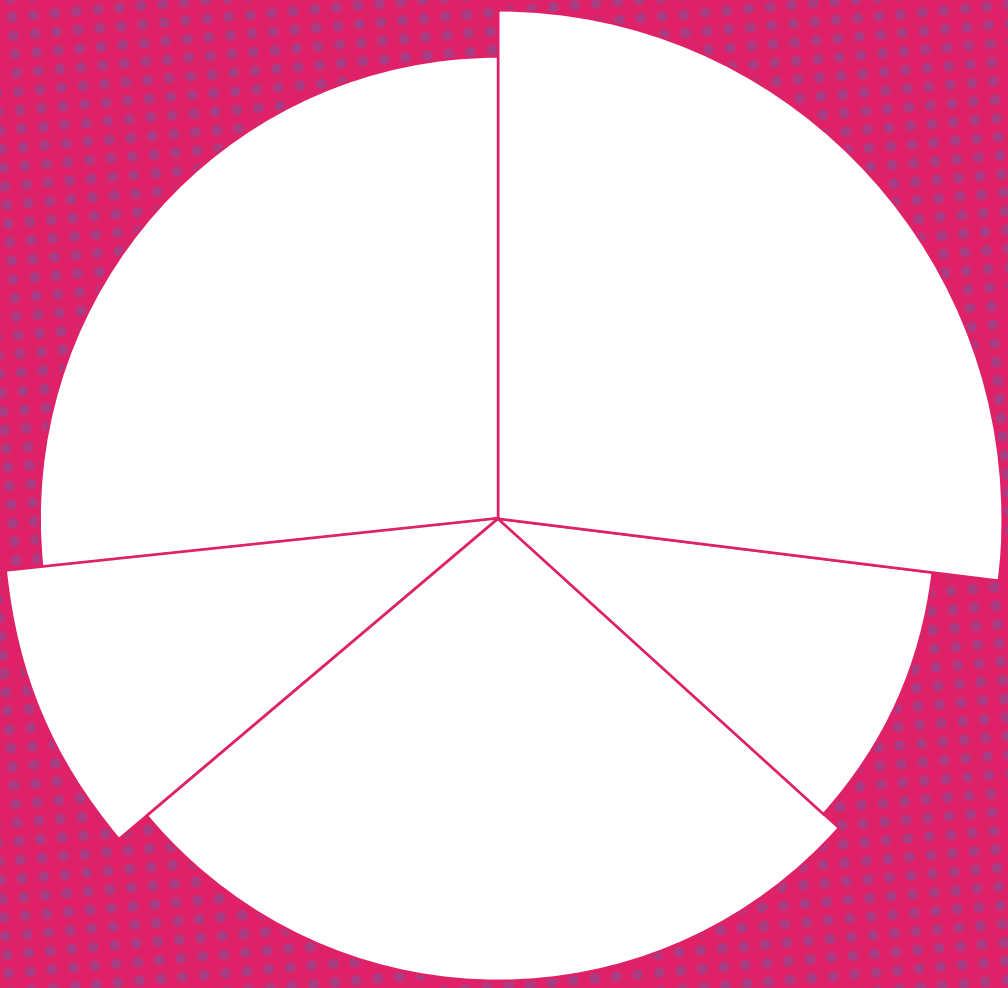
The evidence is clear that the program has true impact on outcomes. HP will be launching the programs in Portuguese soon and is keen to work with countries participating in this meeting, as an extension of the company's commitment to enable better learning outcomes of 100 million people by 2025. This is coupled with the public pledge to accelerate digital equity for 450 million people by 2030. The fulfilment is in being a purpose-driven organisation that has a positive impact on communities, schools and educators globally.

- End -

For further details or copies of this report, please contact john.glassey@brains.global



APPENDICES



APPENDIX A

unesco
Global Education Monitoring Report

2023

Concept note
2023 Global Education Monitoring Report
Technology and education

Africa and Arab States consultation meeting with GOLA! / Brains Global and HP

Education technology: improving instruction and teacher development

9 March 2022

Manos Antoninis, Director, Global Education Monitoring Report

en.unesco.org/gem-report

GEM Report role in SDG 4 follow up and review

Editorially independent team based at UNESCO since 2002 with extended mandate in the 2015 Incheon Declaration to:

Monitoring part

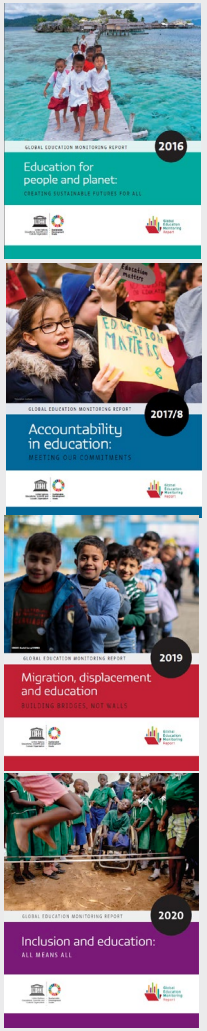
'be the mechanism for monitoring and reporting on SDG 4 and on education in the other SDGs'

Thematic part

'report on the implementation of national and international strategies to help hold all relevant partners to account for their commitments'

Previous GEM Report themes

2016	**Education and the SDGs**	Sep 2016
2017/8	**Accountability**	Oct 2017
2019	**Migration and displacement**	Nov 2018
2020	**Inclusion**	Jun 2020
2021/2	**Non-state actors**	Dec 2021
2023	**Technology**	**Jun 2023**
2024	**Leadership**	Sep 2024



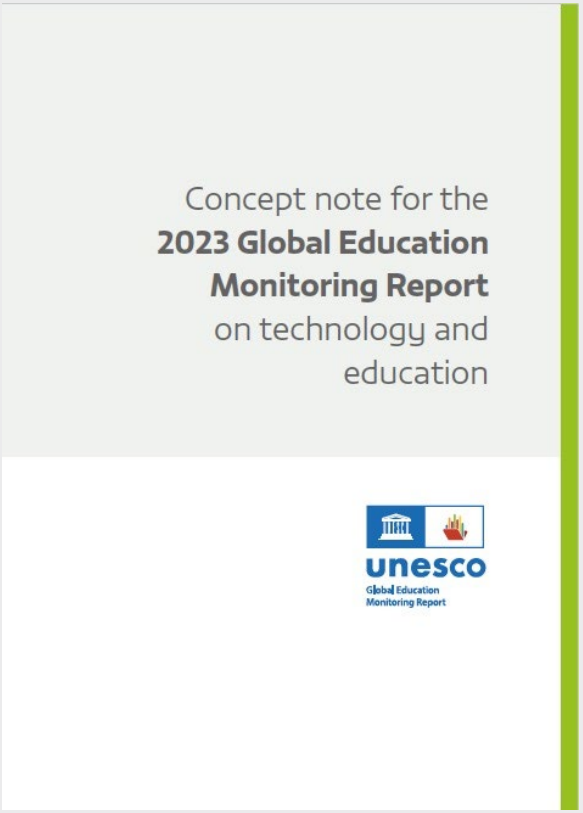
2023 GEM Report approach

Context

- Technology and SDG 4
- Covid-19 and the role of technology
- Technology in education divides

Focus

- Key education challenges and technology
- Minimum conditions for technology to support education
- Other technologies outside ICT



Framework (1): Challenges

What is the education we want? Can technology help?

1. Access, equity and inclusion

Access for disadvantaged groups: Hard-to-reach learners

Access to content: As much in as attractive and cheap formats

2. Quality

Basic skills: Transform pedagogy, engage students, improve learning

Digital skills: Provide new skills that technology demands

3. Technology development

How can education systems support technological development?

4. System management

How to make assessment and other education management data more relevant and widely used?

Framework (2): Minimum conditions

What conditions to be met for technology to support education?
How can education systems:

1. Access to technology
…ensure that all learners have access to technology resources?

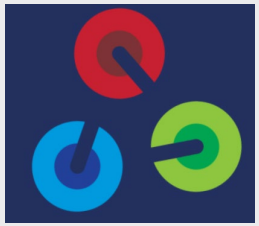
2. Governance and regulation
…protect learners from the risks of technology?

3. Teacher preparation
…support all teachers to teach, use and deal with technology?

Next steps

Online consultation
What do you think should this report cover?
Send your comments and recommendations!

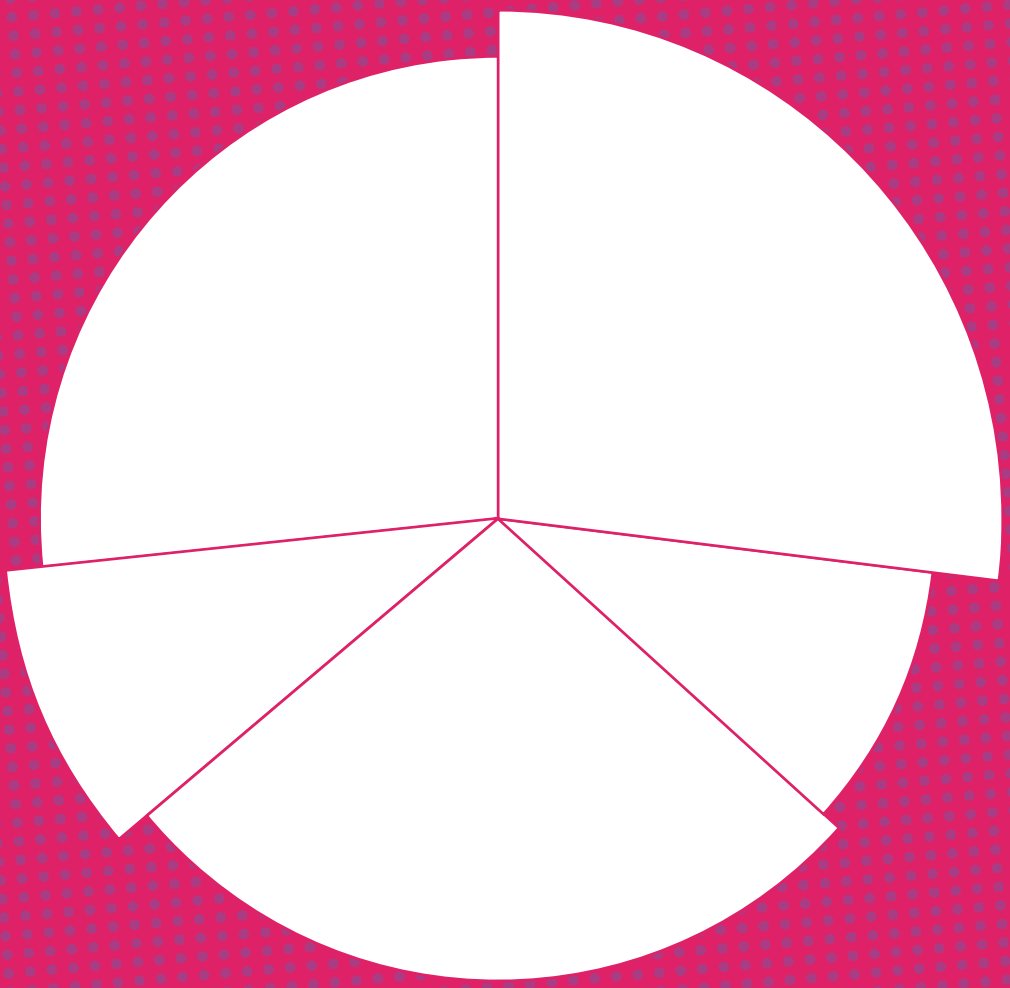
New chapter of **PEER** country profiles
www.education-profiles.org



unesco
Global Education Monitoring Report

Download the 2023 GEM Report **concept note**
Join in the online **consultation**

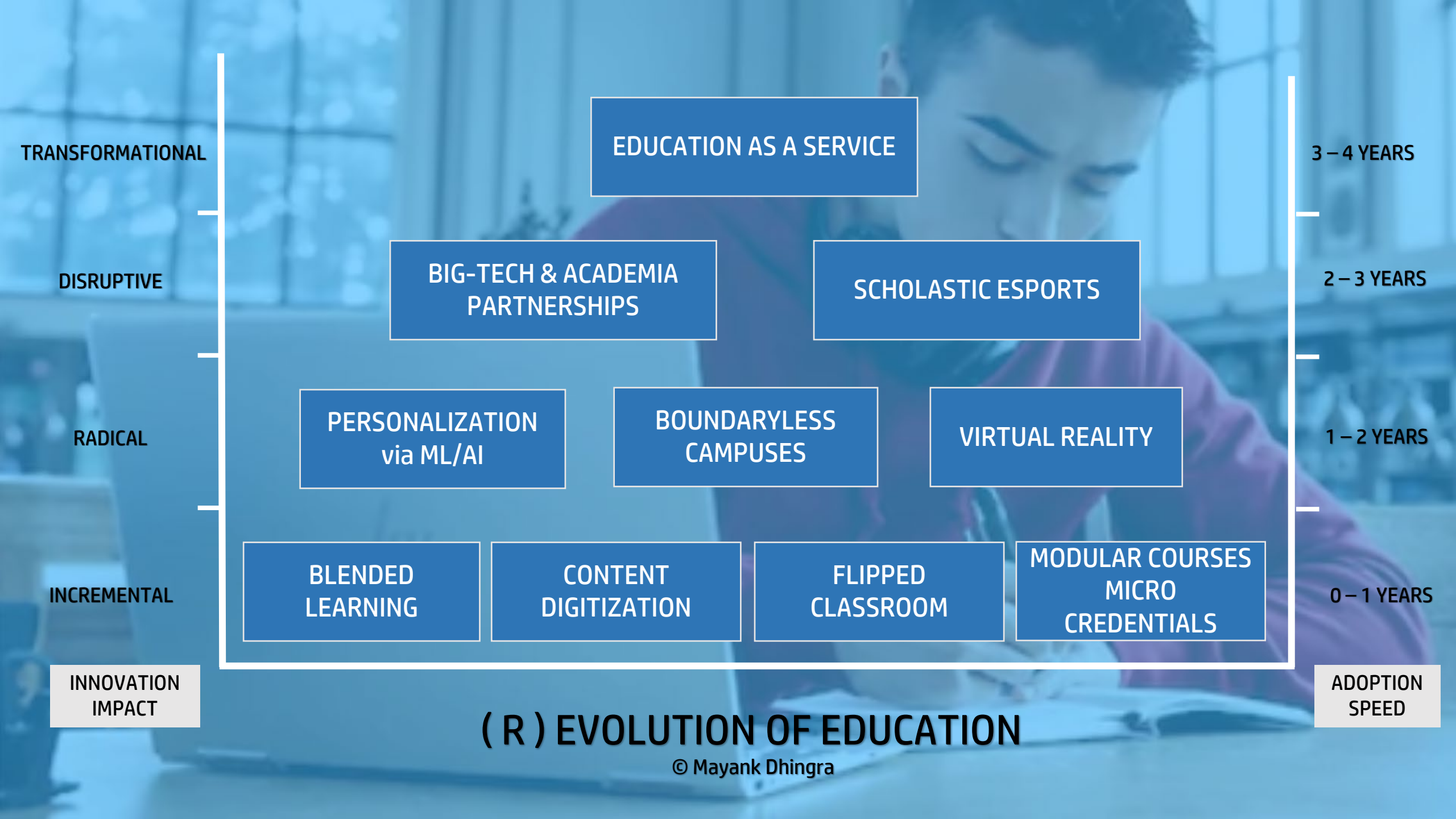
https://en.unesco.org/gem-report/2023/technology



APPENDIX B

HP Education | Instructional Development

Mayank Dhingra



(R) EVOLUTION OF EDUCATION

© Mayank Dhingra

HP IDEA

(Innovation & Digital Education Academy)

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Transforming Digital Pedagogy
HP IDEA Schools

HP IDEA (Innovation & Digital Education Academy) program marks a school's commitment to transform their Digital Pedagogies to flourish in the 21st century and keep themselves agile and inventive during challenging times.

HP IDEA has two programs for participating schools
HP IDEA Fellow (one-year pathway) for a select cadre of innovative practitioners and instructional leaders.
HP IDEA Associate (focussed coursework, designed by Fellows under guidance from Mirai & HP)

Schools will be badged as HP IDEA Schools and participants will be recognized as Fellows or Associates. Participants will receive certificates of completion from HP.

HP IDEA – Alignment with SDG 4

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Element Four

4.4	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
4.6	By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy & numeracy. The principles, strategies & actions for this target are underpinned by the contemporary understanding of literacy as a continuum of proficiency levels in a given context.
4.c	By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

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HP IDEA – Alignment with CESA 2016-25

Reorienting Africa's education and training systems to meet the knowledge, competencies, skills, innovation and creativity required to nurture African core values and promote sustainable development

S1	Revitalize the teaching profession to ensure quality and relevance at all levels
S3	Harness the capacity of ICT to improve access, quality and management training systems
S4/11	Ensure acquisition of requisite knowledge & skills and improve the management of education system

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Innovative Practices
HP IDEA Schools

HP IDEA program in schools will leverage existing digital tools to develop effective, scalable practices focused on teaching and learning in a distance, hybrid or blended context.

Teachers will develop this practice using the

- Creating Communities of Innovation (CCI) model
- Teaching for Understanding (TfU) framework
- Leading Learning that Matters (LLtM) collaborative network
- High- Leverage Teaching Practices (HLTP) program

HP IDEA | Footprint

Countries engaged

Countries engaged

- UAE
- Nigeria
- South Africa
- Ghana
- Rwanda
- Oman
- KSA
- Kazakhstan
- Kenya
- Morocco
- Qatar
- Tanzania
- The Gambia
- Uganda
- Egypt

Team members from

- US
- UK
- Egypt
- UAE
- India
- Nigeria

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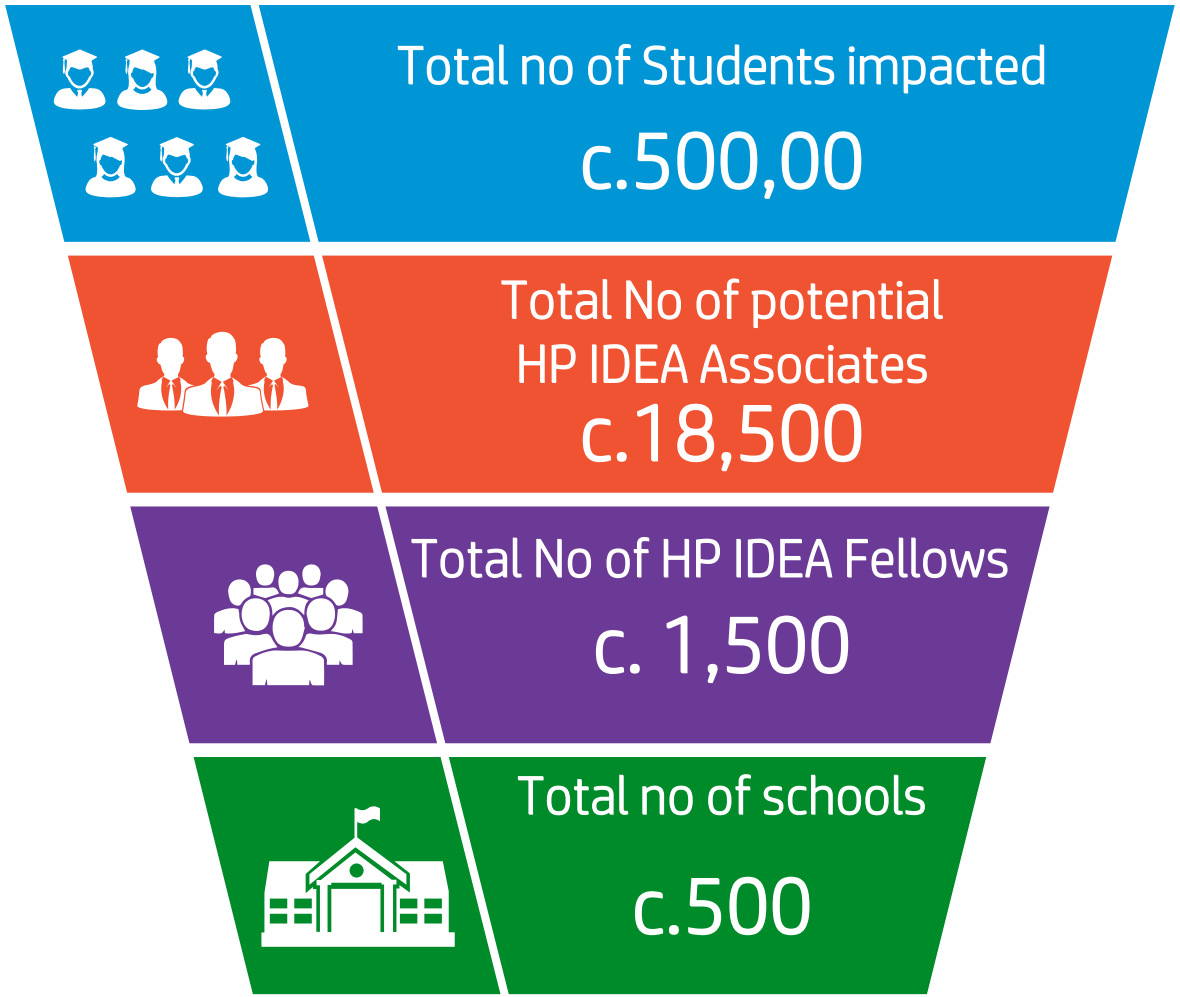
Impact at a glance

HP IDEA builds far-reaching capacity.

We start with high-performing teachers and leaders, build their innovation and digital pedagogy skills as well as their leadership skills to effect change at scale.

The reach and influence of the program has grown exponentially since launch



* Circa figures as of Jan'22

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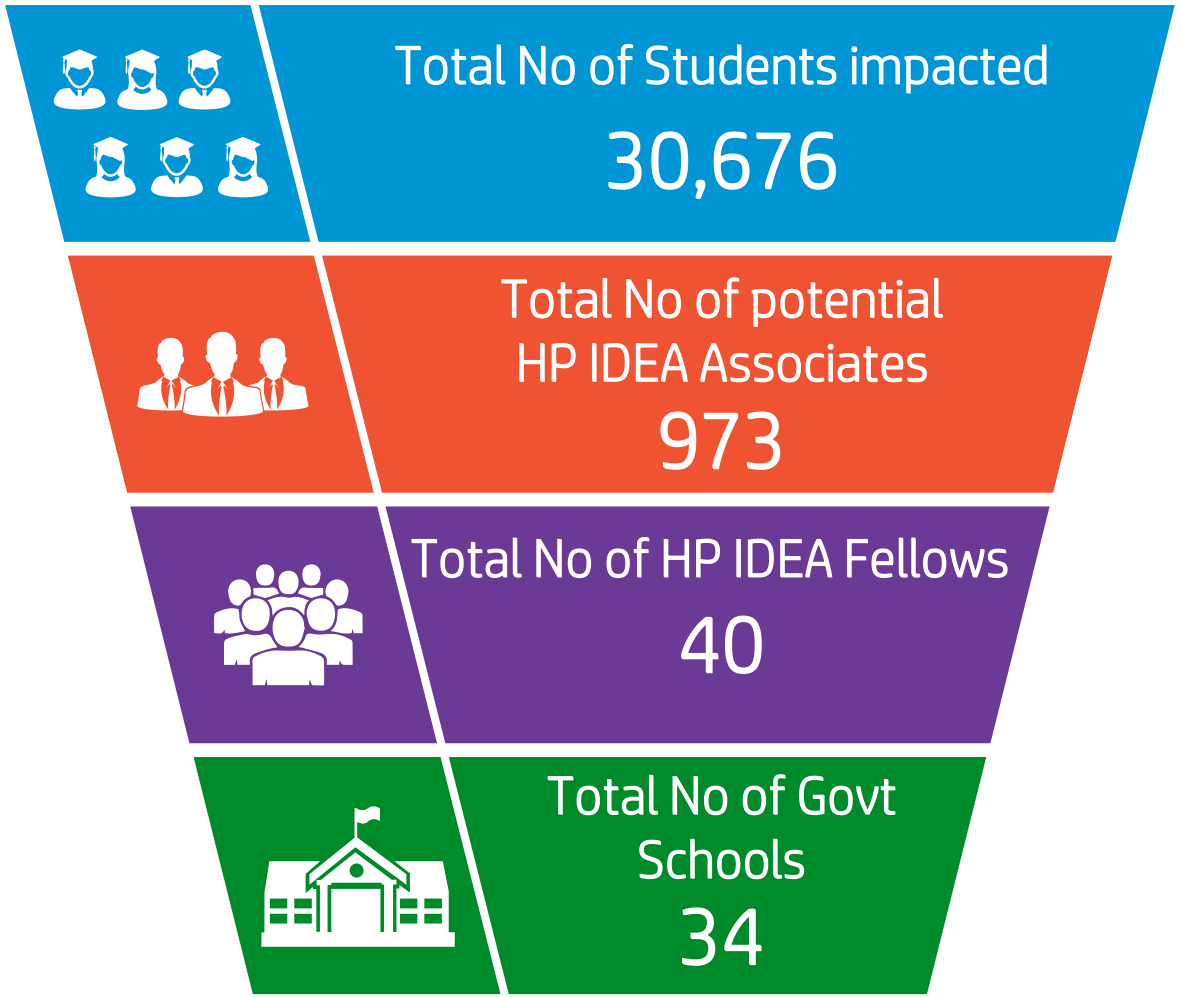
Nigeria Public Background

Start date 1st December 2020

Nigeria is Africa's most populous country and has 20 Million students.

The Lagos Ministry of Education is taking part in the program and the program was launched in the country by the DG OEQA.

The program has been endorsed by Abiloa Seriki-Ayeni, the DG of the OEQA, Lagos State Ministry. Abiola is responsible for driving educational transformation from the front.



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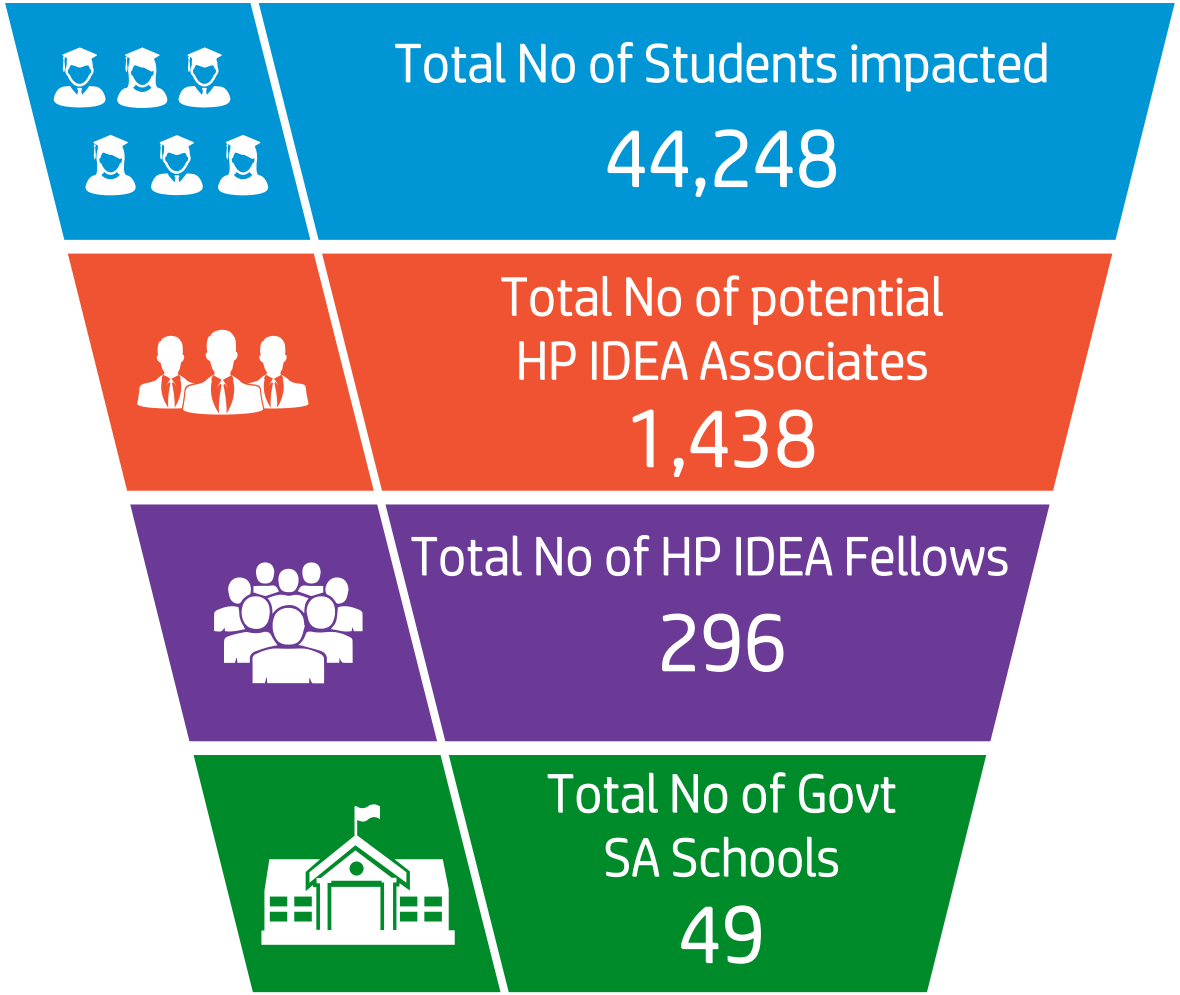
South Africa Public Background

Launched – March 23rd 2021

DBE (National Dept of Basic Education) schools in RSA joined the HP IDEA program through a partnership with Umlambo Foundation. The schools represent all the 9 provinces of the country.

The cohort has an incredible level of engagement and excitement for the program and for their own self-development.

The program is supported by Dr. Phumzile, who is the Chairperson of Umlambo Foundation, the former Executive Director of UN Women and ex Vice President of South Africa.



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HP IDEA 1st Cohorts graduation – 28th June'21

110 HP IDEA Fellows from 23 schools in Nigeria and UAE granted Fellowship Title

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HP Literacy Attainment Coach

Pilot Project Update

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We need to address literacy with a sense of urgency

- **Data from McKinsey & Company:**
  - Average of 4 months of unfinished learning in literacy post COVID-19
  - Above average students are closing the reading gap; however, average to below average students are falling farther behind
  - Students reading 2+ years below grade level have increased by 50%
- **What does this mean for teachers:**
  - The range of differentiation in a typical class is now greater adding new complexity
- **The Good News**
  - With a solid reading program and meaningful interventions at the right time, top students can be enriched and struggling students can close the gap

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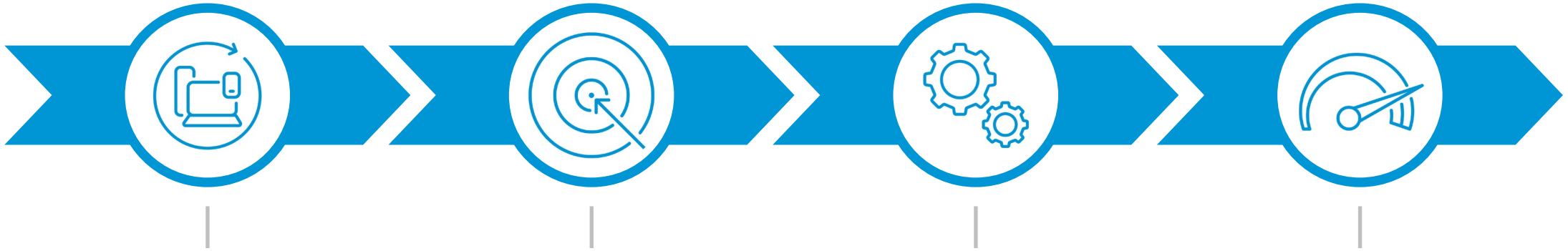
HP Literacy Attainment Coach drives digital equity through accelerating literacy levels among youth and adults.



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HP LAC Pilots

Pilots running in seven countries

Nigeria

Ghana

The Gambia

Kenya

Rwanda

Liberia

South Africa

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Pilot Process

Teacher training and student assessment in The Gambia

- Pilots run for 6-9 months and include a minimum of 2 rounds of diagnostic instruction.
- Participating schools receive professional development and teaching and learning resources for all teachers.
- Literacy experts from Mirai Partners provide ongoing literacy instructional coaching to teachers, ministry leaders.
- At the conclusion of the program, ministry and NGO leaders conduct a final assessment to assessment student progress and program impact.

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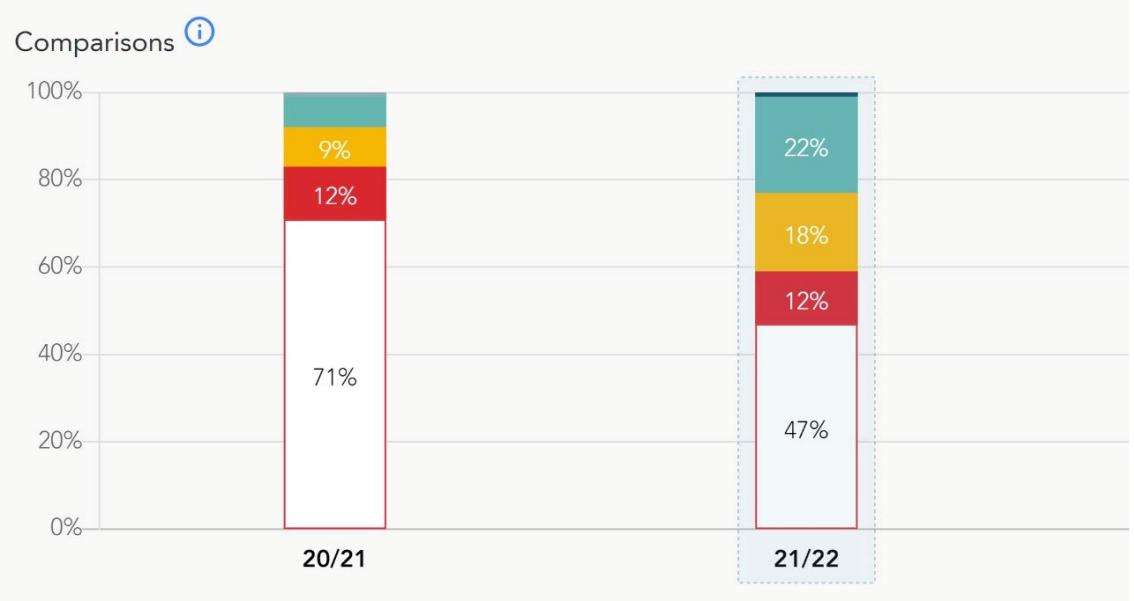
Literacy Pilot – Public Schools

The Gambia

Grade 3 students assessed in July and November. 2022

Non/Low readers down from 83% to 59%



White: Non-readers

Red: Low-level readers 1st-15th percentile

Yellow: Below-average 16th-25th percentile

Turquoise: Average 26th-75th percentile

Light blue: Above average 76th-85th percentile

Dark blue: 86th percentile and above

Teacher-led literacy program

Interventions included:

Practice at the sound level, word level, sentence level, and story level

Multi-sensory activities and games

Coaching over whatsapp using videos and lesson plans

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Sample single class improvement in NGO pilot

Northern Ghana – Improvement from 5th to 45th percentile

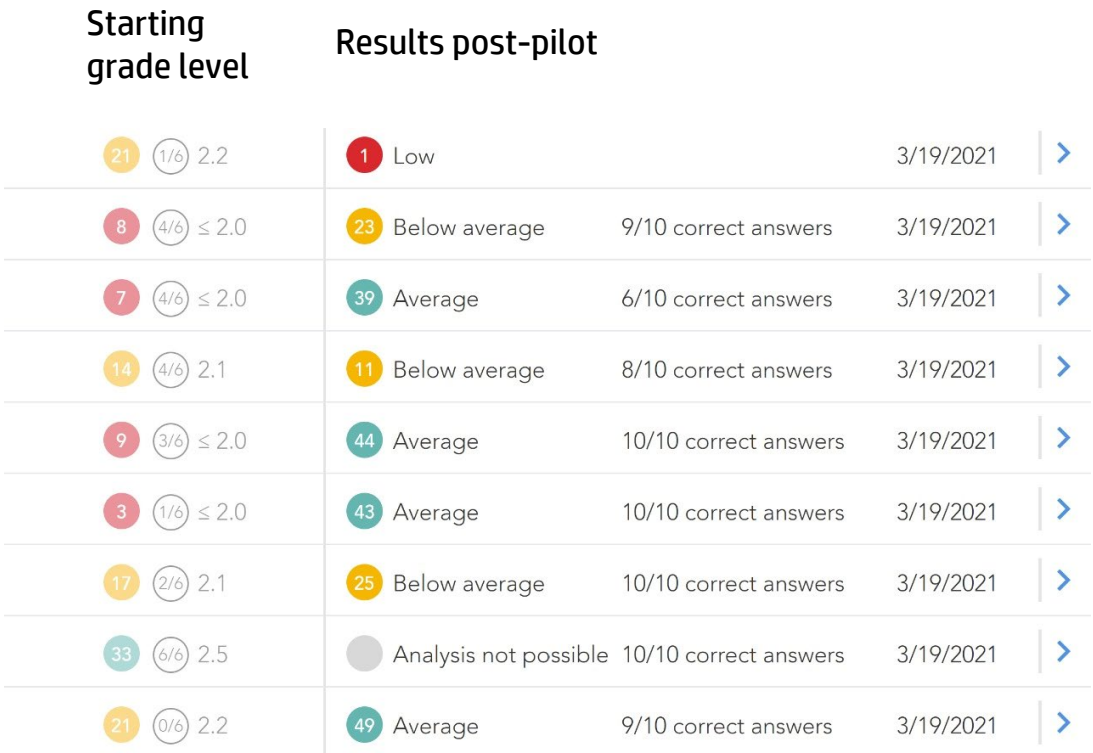
Volunteer-led literacy program

Interventions included:

Volunteer training

Practice at the sound level, word level, sentence level, and story level

Multi-sensory activities and games



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HP will enable better learning outcomes for

100 Million People

263 million
children and youth around the world are out of school

HP will invest over
$20 Million