Recommendations on Accelerating the Digital Transformation of Global Higher Education during the COVID-19 Pandemic

Outcome Document of the 2020 IIOE Annual General Meeting

UNESCO-ICHEI

Under the guidance and inspiration of Education 2030 and SDG4, UNESCO International Centre for Higher Education Innovation (UNESCO-ICHEI) was established in Shenzhen, China, in June 2016, as a UNESCO Category 2 Centre. Relying on the advantages of Shenzhen's Hi-tech sector and drawing upon China's experience with the massification of its higher education, UNESCO-ICHEI intends to improve quality and promote equity in higher education to nurture human capital, as a response to the fourth industrial revolution and rapid development of digital economies across the world.

IIOE

In partnership with global higher education institutions (HEIs) and enterprises, UNESCO-ICHEI officially launched its flagship project, the International Institute of Online Education (IIOE) in April 2020. IIOE aims to improve access to quality content for teachers' professional development, promote the exchange of knowledge, and strengthen university-industry collaboration on a global scale.

This is an outcome document of the 2020 IIOE Annual General Meeting. IIOE and its partner HEIs and enterprises jointly put forward the recommendations on accelerating the digital transformation global higher education in response to the COVID-19 pandemic in the hope of supporting global HEIs' efforts in realising SDG4 and Education 2030 Agenda during and after the pandemic.
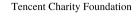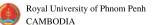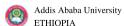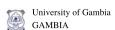
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Preamble

The COVID-19 pandemic has created the largest disruption of education in human history, affecting nearly 1.6 billion learners in more than 190 countries. Governments around the world had to take swift measures to facilitate the transition to online education. Meanwhile, approximately 65% of lower-middle-income countries and less than 25% of low-income countries have been able to establish online learning platforms, revealing significant gaps in these countries' readiness to conduct online education to ensure education continuity in response to the pandemic. UNESCO Institute for Statistics (UIS) found that about half of the global learners who were kept out of schools by the pandemic (826 million students) do not have a computer at home. Specifically, 43% of global learners (706 million students) do not have access to the Internet at home. By the beginning of October 2020, about 33.1% of the total enrolled learners worldwide (more than 567 million students) were still unable to return to school due to the COVID-19 pandemic and schools in 35 countries remained in a state of country-wide closure. The spread of COVID-19 has not only disrupted education around the world but also highlighted the urgent need for higher education institutions (HEIs) to enhance their capacity to design and implement quality online education. The joint efforts made by global HEIs together with international organisations, enterprises, education policymakers and other stakeholders to ensure education continuity during the pandemic have further accelerated the development of online education and the progress of the digital transformation of global HEIs. The rapid development of information and communications technology (ICT) in the fourth industrial revolution is not only driving developing countries' transition into the digital economy, it also has profound implications for their higher education systems in terms of institutional strategic planning, teacher professional development, higher education administration, and graduate employability. A survey by the International Association of Universities (IAU) among global HEIs found that 75% of the surveyed HEIs have integrated digital transformation into their institutional strategic plans. Facilitating the digital transformation of HEIs may include but are not limited to adopting new digital tools for teaching and learning, teaching students economically-in-demand competencies to engage in digitalised workplaces, and incorporating digital processes in the administration and management of HEIs. Online education has played an essential role in ensuring education continuity during the pandemic, showing the world that online education is no longer just a supplement to traditional face-to-face teaching and learning. In the foreseeable future, online education will also become a critical strategy for developing countries to achieve equitable and quality higher education.

To support the digital transformation of HEIs and realise the Sustainable Development Goal (SDG) 4.3 of ensuring 'equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university', the International Centre for Higher Education Innovation under the auspices of UNESCO (UNESCO-ICHEI), along with its global partner HEIs and enterprises, jointly initiated the International Institute of Online Education (IIOE) in December 2019 and officially launched the IIOE platform in April 2020. IIOE is committed to supporting HEIs in developing countries to meet the abovementioned challenges, propelling the progress of the digital transformation of global higher education through capacity building in online education, provision of hardware and software resources, and formulation of evidence-based policy recommendations; and thus realising the 2030 Agenda for Education proposed by UNESCO and the Sustainable Development Goal 4 (SDG4). We, IIOE and our global partner HEIs and enterprises, attended the IIOE Annual General Meeting on 9 December 2020. We would like to express our heartfelt gratitude to UNESCO-ICHEI and Ain Shams University for jointly organising this conference, during which the commitment to the Agenda for Sustainable Development in 2030, SDG4 and its specific targets were reaffirmed. We will make joint efforts to enable the digital transformation of HEIs in developing countries and strengthen their capacity in planning for and implementing quality online education. Recalling the *Qingdao Declaration* and *Beijing Consensus on Artificial Intelligence and Education,* which advocate for using ICT to achieve SDG4 and the Education 2030 Agenda, we acknowledge the importance of digital transformation of higher education beyond the disruption of the COVID-19 pandemic and the normalisation of online and blended teaching and learning (OBTL) hereafter. We hereby encourage HEIs, international organisations, enterprises and higher education professionals around the world to act upon the following recommendations to drive and support the digital transformation of HEIs in developing countries.

I. Online Education for Equitable and Quality Higher Education

The critical role of online education in the COVID-19 education response has not only accelerated its development but also expanded its application in higher education. HEIs' experience in continuing education in response to the pandemic has shown the world that online education is no longer simply a supplement to the traditional face-to-face instruction, but a critical strategy to expand access to and improve the quality of higher education in developing countries.

Drawing on the research and innovation of Shenzhen's ICT sector and China's experience with inclusive and quality higher education, UNESCO-ICHEI aims to meet the local demand for quality higher education resources and to support Asian and African countries to improve the quality of higher education and promote educational equity. As the flagship project of UNESCO-ICHEI, IIOE aims to strengthen the online education capacity of HEIs in developing countries in Asia and Africa. We hereby encourage HEIs around the world to take the following actions to jointly achieve equitable and quality higher education through online education:

1. Define the mission and vision of HEIs for building the capacity of online education and developing institutional strategic plans to fulfil the HEIs' roles of driving digital economic growth, facilitating innovative practices, and cultivating digital talents for their countries.

2. Strengthen HEI-industry collaboration to inform and drive curriculum reform and incorporate the key competencies in emerging ICT fields (such as Cloud Computing, Big Data, the Internet of Things (IoT), and Artificial Intelligence (AI)) into the curriculum. Leverage emerging technologies, such as Virtual Reality (VR) and Augmented Reality (AR) to create virtual laboratories for teaching and learning in the STEM fields. Invite industry experts and high-tech enterprises from the ICT sector to participate in teaching and research, providing support for curriculum design, instructions, strategic planning, research and development, among others.

3. Conduct in-depth context analysis of each country and build a framework for action to realise the digital transformation of HEIs based on each country's main industrial structure, labour market demand, and future economic development.

II. Capacity Building of Higher Education Professionals for HEI Digital Transformation

Higher education professionals, including teachers, administrators and related government officials, shoulder the important responsibilities of cultivating digital talents, facilitating innovative research, and driving the development of the digital economy for their country. On the 2020 World Teachers' Day, UNESCO reaffirmed teachers' core contribution to continuing education during the pandemic as 'Leading in crisis, reimagining the future'. Therefore, IIOE regards developing the ICT competencies of higher education professionals as the essential pathway to promote the digital transformation of HEIs and strengthen their capacity of planning for and the implementation of online education. Since its establishment, UNESCO-ICHEI has strengthened the ICT competency of higher education professionals

through a series of projects such as the UNESCO-Shenzhen Funds-in-Trust Project (UNESCO-SFIT), Smart Classroom, Capacity-Building Seminars, COVID-19 Response Training Workshops and the IIOE Multilevel Training Programmes. We recommend HEIs, higher education professionals and students around the world to take the following actions to strengthen their ICT competencies:

4. Strengthen teachers' online education competency through a systematic teacher professional development pathway, including the competency of utilising digital tools in education management and the mastery of content knowledge in emerging ICT fields, such as Cloud Computing, Big Data, the Internet of Things (IoT), and Artificial Intelligence (AI). Bring in related education resources from ICT enterprises, MOOC platforms and other channels.

5. Redefine the role of teachers in cultivating students' ICT skills and facilitating the digital transformation of HEIs. Reform the pathway of teacher training and teacher professional development to meet the new requirements for higher education teachers in terms of ICT competency. Incorporate online education into the training programmes for teachers to strengthen their competency to conduct effective online education.

6. Encourage teachers to develop high-quality and localised online curricula and courses for knowledge production and shared benefits. Share these online courses as open educational resources (OERs) with national and international networks to expand opportunities for lifelong learning and quality education.

7. Experiment with and actively apply innovative technologies in educational administration and management. Utilise innovations, such as smart classroom and smart campus to inform the future operation of HEIs. Carry forward the successful examples of ICT application in higher education and share with global higher education networks.

III. Multi-Stakeholder Partnerships for Philanthropic Resource-Sharing

Infrastructure (such as hardware facilities and Internet connectivity) is a prerequisite for the digital transformation of higher education. In terms of software support, complementary content knowledge and curriculum resources can ensure the sustainable development of ICT capacity building for higher education professionals. Multi-stakeholder partnerships among the government, industry, and academia provide a new solution to fill in the gap of resources in developing countries. Through such multi-stakeholder partnerships, UNESCO-ICHEI creates a supportive ecosystem integrating both hardware and software resources for its global partner

HEIs, helping HEIs in developing countries overcome a lack of resources. Through partnerships with global ICT enterprises, UNESCO-ICHEI has implemented the Smart Classroom project at partner HEIs. The Smart Classroom is a digital learning environment that integrates emerging ICT, such as Big Data, Cloud Computing, Internet of Things (IoT) and Artificial Intelligence (AI) to support multimedia teaching and learning, localised curriculum design, cross-campus resource sharing, learning analytics, administration and management, among other basic requirements for realising the digital transformation of HEIs. In addition, IIOE has connected with global HEIs and online learning platforms, and swiftly mobilised course resources to help higher education professionals update their ICT content knowledge and skills. We hereby encourage global HEIs, enterprises, international organisations and the ministries of education to explore multi-stakeholder partnership for resource sharing:

8. Establish multi-stakeholder partnerships among government, enterprises and HEIs to provide hardware facilities and open educational resources (OERs) for online and blended teaching and learning in higher education during and after the COVID-19 pandemic. Facilitate dialogues and collaborations among the academia, industry, and government, and design innovative funding mechanisms to secure the necessary financial resources for HEIs in developing countries.

9. Monitor and evaluate the unbalanced distribution of resources faced by developing countries, especially regarding education continuity during and after the COVID-19 pandemic. Focus on supporting countries, HEIs, and populations with the greatest needs and allocate resources in accordance with the Priority Africa and Priority Gender Equality advocated by UNESCO. Align strategic plans of international cooperation with each country's development goals to ensure education continuity.

IV. Evidence-based Policies for Online Education Quality Assurance

Evidence-based education policies and implementation plans can provide clear guidance for the digital transformation of HEIs. A well-developed quality assurance system can ensure international recognition of online degree programmes and certifications. Active monitoring and evaluation are necessary to ensure that teacher capacity-building effort can result in a positive impact on students' learning outcomes. Through the UNESCO Shenzhen Funds-in-

Trust Project, UNESCO-ICHEI has developed and strengthened the quality assurance mechanism in 10 African countries, and implemented the necessary quality assessment tools to facilitate mutual recognition of higher education diploma, programmes, and qualifications. IIOE has also tailor-designed an M&E plan for developing countries in Asia and Africa, which monitors and evaluates progress on both the HEI and IIOE initiative-levels. The key deliverables to be evaluated include but are not limited to ICT in education capacity of teachers, partner HEIs' capacity to support an online and blended learning ecosystem, quality higher education resources, personalised talent cultivation, HEI-labour market linkage, and equality and gender inclusion in ICT. In addition, the IIOE Quality Assurance Self-Assessment Tool provides a ready-to-use and quick evaluation of an HEI's institutional capacity of online and blended teaching and learning and follows up with specific recommendations on how the HEI might improve its capacity accordingly. To 'promote a culture of quality assurance in higher-education institutions and systems, and develop the capacities necessary for ensuring reliability, consistency and complementarity in quality assurance, qualifications frameworks, and recognition of qualifications in order to support international mobility', as stipulated by the *Global Convention on Recognition of Qualifications Concerning Higher Education* (the Global Convention), we hereby encourage higher education professionals to devise evidence-based policies and guidelines based on their national context, and thus guiding the digital transformation of higher education:

10. Develop a national strategic plan for the cultivation of digital talents based on the needs of future economic development and industry standards set by employers. The strategic plans will serve as a guide for ICT-related curriculum design and skill-based certifications, and thus accelerating the country's transition to the digital economy.

11. Based on stipulations of the *Global Convention*, develop a national quality assurance system and a qualification framework for online education, which will guide HEIs in designing and implementing high-quality online degree and certification programmes that are mutually recognised by countries.

12. Monitor and evaluate progress and impact throughout the design, implementation, and expansion phases of each project. Actively monitor and evaluate the impact of the Ministry of Education, HEIs, and international organisations on enhancing the ICT competency of higher education professionals, quality assurance and effective assessments of online education, strengthening the capacity for online teaching and learning, and their progress towards realising SDG4 and the Education 2030 Agenda.

Way Forward

The International Institute of Online Education (IIOE) has taken a three-pronged strategy towards realising SDG4 and the Education 2030 Agenda through building the online education capacity for higher education professionals in Asia and Africa, building and sharing hardware and software resources, and propelling the digital transformation of higher education. We, the global partner HEIs and enterprises of IIOE, must devise a framework for action in light of the above recommendations. Given the joint efforts and experience of IIOE, its partner HEIs and enterprises in maintaining education continuity in response to the COVID-19 pandemic and the gradual normalisation of online and blended teaching and learning, we will jointly devise a framework of action for implementing the above recommendations and share the final version of the framework as an open invitation to global HEIs, international organisations, ICT enterprise partners, education policymakers, and the Assistant Director-General for Education of UNESCO. In this way, we hope to inspire and lead the HEIs around the world in realising the digital transformation of higher education.