United Nations
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Sustainable
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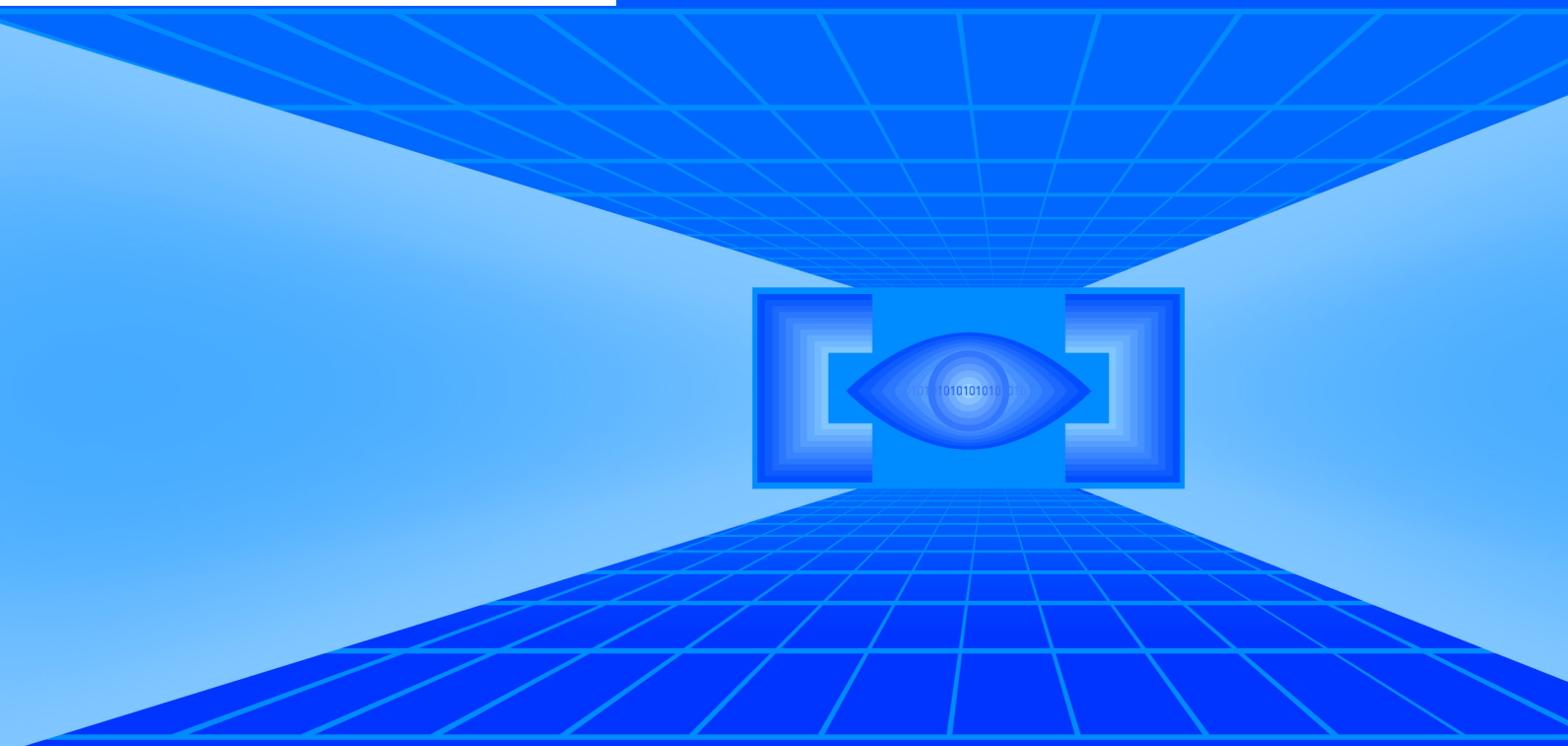
International Conference on Artificial Intelligence and Education

Planning Education in the AI Era: Lead the Leap

Beijing, China 16 – 18 May 2019



Programme

Education 2030

International Conference on Artificial Intelligence and Education

Planning Education in the AI Era: Lead the Leap

16 – 18 May 2019 Beijing, China

Organised by	Ministry of Education of the People's Republic of China	United Nations Educational, Scientific and Cultural Organization	Chinese National Commission for UNESCO	Beijing Municipal People's Government
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Interpretation

Six UN official languages for the keynote and plenary sessions

English, French and Chinese for the breakout sessions

Official webpages for the conference

jw.beijing.gov.cn/AI2019en

https://en.unesco.org/themes/ict-education/ai-education-conference-2019

Email address of the conference

aied@unesco.org

Thursday, 16 May 2019

09:15 – 10:00	**Opening Ceremony**
Grand Ballroom (1st Floor of Building C, Beijing Hotel)	**Chair** Hon. Mr CHEN Baosheng, Minister of Education, People's Republic of China **Speakers** • Mr CHEN Jining, Mayor of Beijing Municipal People's Government, People's Republic of China • Ms Stefania Giannini, Assistant Director-General for Education, UNESCO • Hon. Mr LEE Byong-Hyun, Chairperson of the Executive Board, UNESCO • State leader of the Government of the People's Republic of China
10:00 – 10:15	Break
10:15 – 12:15	**Ministers' Forum: Emerging policies and strategies for leveraging AI to achieve SDG 4**
Grand Ballroom (1st Floor of Building C)	AI is evolving rapidly, and emerging AI technologies hold transformative powers in reshaping education and learning. There is a consensus that the impact of AI for education and learning has a benefit–risk duality. To reinvent education systems towards an AI era, policy- makers will need to examine benefits and potential risks of AI in the context of achieving Sustainable Development Goal 4 (SDG 4) of the Education 2030 Agenda on the provision of inclusive, equitable and quality education and lifelong learning opportunities. AI holds the potential to overcome major challenges countries are facing in achieving SDG 4, such as reducing barriers to education access, automating management processes, analyzing learning patterns and optimizing learning processes with a view towards improving learning outcomes. This session will convene high-level debates on how AI trends will reshape education and learning. Key questions to be discussed include: What are the latest trends in AI? How are the trends in AI reshaping education and learning? How should policies be planned to lead systemic change and innovation in education in response to the opportunities and risks presented by the advent of AI? **Chair and opening remarks** Ms Stefania Giannini, Assistant Director-General for Education, UNESCO **Keynote Speech on AI and education in China** Hon. Mr CHEN Baosheng, Minister of Education, People's Republic of China **Introductory remarks** • Hon. Mr Jernej Pikalo, Minister of Education, Science and Sport, Slovenia • Hon. Mr Yutaka Hishiyama, Assistant Minister for Cybersecurity, IT Management and Evidence-based Policymaking, Japan **Panelists** Round 1 • Hon. Mr Mohd Mirwais Balkhi, Minister of Education, Afghanistan • Hon. Mr Arayik Harutyunyan, Minister of Higher Education and Science, Armenia • Hon. Mr Gaspard Banyankimbona, Minister of Higher Education and Scientific Research, Burundi • Hon. Mr Anatole Collinet Makosso, Minister of Primary, Secondary Education and Literacy, Congo Round 2 • Hon. Mr John Chrysostom Muyingo, Minister of State for Higher Education, Uganda • Hon. Mr Emery Okundji Ndjovu, Minister of Posts, Telecommunications and New Technologies of Information and Communication, Ministry of Primary, Secondary and Vocational Education a.i., Democratic Republic of the Congo • Hon. Mr Girirajmani Pokharel, Minister of Education, Science and Technology, Nepal • Hon. Ms Gulmira Kudayberdieva, Minister of Education and Science, Kyrgyzstan • Hon. Mr Deng Deng Hoc Yai, Minister of General Education and Instruction, South Sudan

Thursday, 16 May 2019

12:15 – 14:00	Lunch (Beijing Hotel)
14:00 – 15:10	**Keynote Session: Envisaging the future of education in the AI era**
Grand Ballroom (1st Floor of Building C)	**Chair** Ms Marielza Oliveira, Director, UNESCO Beijing Office **Speakers** • Hon. Mr ZHONG Denghua, Vice Minister of Education, People's Republic of China • Mr WANG Duanrui, Board Chairman, Weidong Group, People's Republic of China • Mr John Shawe-Taylor, Professor, University College London and UNESCO Chair in AI, United Kingdom of Great Britain and Northern Ireland • Mr ZHANG Bangxin, Board Chairman, TAL Education Group, People's Republic of China • Mr LIU Qingfeng, CEO, iFLYTEK, People's Republic of China
15:10 – 16:10	**Plenary Session 1: Guiding the development of AI in education policies**
Grand Ballroom (1st Floor of Building C)	By the end of 2018, approximately eighteen countries or economies across the world had responded to AI's benefits and potential risks by developing and starting the implementation of AI strategies. The array of emerging strategies has featured interdisciplinary and intersectoral approaches and focused on a common set of policy areas, including industrialization and implications for labour markets; research; talent and skills development; ethics; data; AI in government services; and inclusion. While countries have targeted different strategic priorities, pathways of implementation and funding mechanisms, education is central for all. In the education sector, AI holds the potential to profoundly alter every aspect of management, teaching and learning. However, in contrast to other sectors, the long-term implications of the widespread use of AI in education are difficult to predict with certainty. Education policy-makers are also struggling to seize the opportunity and align AI in education strategies with public AI policies in the context of achieving SDG 4 objectives. This session will focus on how lessons learned from emerging AI strategies can inform the development of AI in education policies. Key questions to be discussed include: What are the key lessons learned from the implementation of national strategies? What system-wide planning is needed to lead the transformation of education towards the AI era? How can adequate resources and key stakeholders be mobilized to fund AI in education policy and support its implementation? **Chair** Ms Nada Al-Nashif, Assistant Director-General for Social and Human Sciences, UNESCO **Panelists** • **UNESCO AI in Education Policy Guidelines:** Mr Wayne Holmes, The Open University, United Kingdom of Great Britain and Northern Ireland; Mr Fengchun Miao, Chief, Unit for ICT in Education, UNESCO • **The New-Generation AI Development Strategies of China:** Mr GONG Ke, President of the World Federation of Engineering Organizations (WFEO), Executive President of the Chinese Institute of New-Generation AI Development Strategies, People's Republic of China • **The policy response of Finland:** Mr Olli-Pekka Heinonen, Director-General, National Agency for Education, Finland
16:10 – 16:40	Break

Thursday, 16 May 2019

16:40 – 18:20	Breakout Sessions

Beijing Palace West Hall

(1st Floor of Beijing Hotel International Convention Center)

1.1. Planning AI in education policies and developing AI-ready policy-makers

To maximize AI's benefits and mitigate its potential risks for education, policy-makers need to conduct continuous policy learning on what AI is and how it is being used in life, work and education, as well as how ethical and legal risks should be managed. To lead the transformation of education towards the AI era, AI in education policies need to be based on the examination of the implications of AI for the core foundation of education, including skills development, governance and management of education, curriculum and qualifications, and the organization of teaching and learning.

This session will address key questions regarding the planning of AI in education policies and the knowledge areas around which policy-makers should be empowered, including: What principles should be adopted in harnessing AI to build the future of education and learning while addressing the challenges of achieving the SDGs in different contexts? How can readiness be enhanced and key policy building blocks be integrated to support the achievement of strategic objectives? What essential AI knowledge do policy-makers need to develop in order to lead the design of education policies and planning in the AI era?

Chair

Francesc Pedro, Chief, Section for Education Policy, UNESCO

Panelists

- **UNESCO – Microsoft project on AI-ready policy-makers:** Ms Alexa Joyce, Director, Education Leadership, Microsoft
- **Government AI Readiness Index:** Ms Scarlet George, Consultant, Oxford Insights, Australia
- **Argentina's education strategy for an AI-powered world:** Ms María Florencia Ripani, National Director of Education Innovation, Ministry of Education, Argentina
- **The planning of AI in education policies in Tunisia:** Ms Walaa Turki, Director-General, National Centre for Technology in Education, Tunisia
- Ms WANG Su, Director of the Research Centre for International and Comparative Education of the National Institute of Education Sciences, People's Republic of China

Multi Function Hall

(2nd Floor of Building A)

1.2. AI transforming the delivery and management of education

With a focus rooted in data, AI has demonstrated its power in revolutionizing the sourcing and delivery of programmes of study, education management, and evidence-based policy planning. There is a strong need for policy-makers and practitioners to understand how data can be exploited to improve the delivery and management of education. To make meaningful use of data to drive change, it is critical for education and training providers to develop comprehensive partnerships with the education technology industry. The approach of this partnership should move from a view of the education technology industry as a mere provider of goods and services to richer and more fundamental cooperation on joint reviews of the potential of data, planning and designing AI solutions, and developing guiding frameworks.

This session will demonstrate how AI can be harnessed to enhance and transform the delivery and management of education. Key questions to be discussed include: How can the delivery of education at different levels and in different subsectors (K–12, TVET, HE, lifelong learning) be enhanced by data and AI technology? What are the effective and transformative models for using AI to boost education management information systems (EMIS)? What are the effective partnership or collaboration models for harnessing data for the delivery or management of education, with a special focus on supporting education for the most vulnerable groups?

Chair

Mr Tao Zhan, Director, UNESCO Institute for Information Technologies in Education (IITE)

Panelists

- **Data-based EMIS and education data analytics:** Ms Paula Valverde, Product Director, ProFuturo Foundation, Spain
- **AI-boosted EMIS in the Latin American region:** Mr Alexandre Barbosa, President, Center of Studies on Information and Communication Technologies (CETIC.br), Brazil
- **AI-boosted delivery of education for refugees:** Ms Jacqueline Strecker, Connected Education Officer, UNHCR
- Mr ZHENG Qinghua, Vice President, Xi'an Jiaotong University, People's Republic of China

Thursday, 16 May 2019

Xiagongfu E

(2nd Floor of Beijing Hotel International Convention Center)

1.3. AI empowering teaching and teachers

While there is a possibility that the daily routine and low-skilled tasks assumed by teachers today can be replaced by AI, teaching as an occupation will not be displaced by machines in the near future. With increasingly intelligent support from AI, there will be more possibilities for teachers to focus on high-skilled tasks, including more adaptive curation of educational resources, more effective and efficient teaching methodologies, and better assessment of learning outcomes. Consequently, there is an urgent need to deliberate on how the rights and working conditions of teachers will be affected by the adoption of AI and how system-wide training and support for teachers' career management should be adapted. Additionally, the adoption of AI platforms and tools to enhance teaching must stem from the needs of teachers – the real challenges they are facing in classrooms and their broader education contexts – rather than being dominated by a supply-driven approach or aimless pursuit of new technologies.

This session will address key questions regarding the changing role of teachers in an AI-powered education environment and policy options for better continuing professional development and management of teachers' careers including: How should teachers' roles be redefined dynamically in an increasingly AI-rich education setting? How should teachers be prepared and empowered accordingly with a combination of pre-service and in-service training? How should strategies for addressing teacher shortages be re-examined in this new context?

Chair

Mr REN Youqun, Director-General, Department of Teacher Education, Ministry of Education, People's Republic of China

Panelists

- **The use of AI to support teachers in the under-developed regions of China:** Mr GUO Shaoqing, Professor of Northwest Normal University, People's Republic of China
- **Teacher support with AI and Learning Analytics:** Mr Mutlu Cukurova, University College London, United Kingdom of Great Britain and Northern Ireland
- **The use of AI to empower teachers in Korea:** Mr Ki-Sang Song, Professor at the Korea National University of Education, Republic of Korea
- **AI empowering teachers:** Ms Héloïse Dufour, Science and Society Director, #Leplusimportant, France
- **Concerns about the right and capacities of teachers under the AI-rich environments:** Mr Dennis Sinyolo, Senior Coordinator for Education, Employment and Research, Education International, Zimbabwe
- **The use of AI to empower teachers and teaching in Arabic region:** Mr Mohamed Jemni, Director of ICT, ALECSO

Jewel Room

(B1 Floor of Building E)

1.4. Unleashing the potential of AI for better learning outcomes and effective learning assessment

The computing power of machine learning has demonstrated its capacity in operating tasks that mainly require narrow intelligence, including language processing, facial recognition, and mechanical music composition, drawing and poem writing. AI technology has also been widely used to automate grading and to proctor tests as well as distance learning assessments. Yet evidence remains scarce on how AI can improve learning outcomes and whether it can help learning scientists and practitioners better understand how effective learning happens. AI's potential remains to be explored in terms of supporting the tracking and recognition of learning outcomes across different contexts as well as assessing and performing quality assurance for competencies, especially those acquired in non-formal and informal contexts.

This session will address key questions regarding the potential of AI to improve the quality of learning and achieve better learning outcomes, including: How can AI be used to improve learning processes and outcomes in major subject areas and for the development of interdisciplinary competencies? How can data and AI technology be used to enable innovative methods for assessment and recognition of learning outcomes across institutions and borders? How can AI improve the recognition and validation of prior learning within a lifelong learning perspective?

Co-Chairs

- Mr Fengchun Miao, Chief, Unit for ICT in Education, UNESCO
- Mr XIN Tao, Deputy Director, National Assessment Centre for Education Quality, Ministry of Education, People's Republic of China

Panelists

- **Hybrid Human-AI Systems in Education:** Ms Inge Moleenaar, Assistant Professor of Educational Sciences, Radboud University Nijmegen, Netherlands
- **The impact of AI on learning, teaching, and education:** Mr Ilkka Tuomi, Founder and Chief Scientist, Meaning Processing, Finland
- **The use of AI to support learning of English:** Mr YU Minhong, Chairman of the New Oriental Education and Technology Group, People's Republic of China
- **Personalized learning environment:** Ms Mona Laroussi, Deputy Director, Institute of the Francophonie for Education and TVET under the International Organization of the Francophonie (OIF), Senegal

19:15 **Reception Dinner** Grand Ballroom (1st Floor of Building C, Beijing Hotel)

Friday, 17 May 2019

09:00 – 11:00	Plenary Session 2: Anticipation and development of skills needed for life and work in the AI era
Grand Ballroom (1st Floor of Building C)	The penetration of AI comes with a growth of new occupations and a sharp rise in unemployment triggered by the automation of low-skilled tasks. It presents a source of social and political tension and a risk of worsening income inequalities. A recent global estimation shows that 30 percent of 'work activities' could be automated by 2030. Up to 375 million workers worldwide could be affected, starting with blue-collar workers, then white-collar employees and managers, and even reaching parts of the art industry. Meanwhile, AI and other frontier technologies are increasing the number of high-skilled jobs that require the utilization of unique human creative abilities, socio-emotional skills and human interaction. This session will address key questions regarding the capacities of education and training systems to proactively respond to changes in labour markets, including: What occupations are at risk with the advent of AI, and what new occupations are being created? How can education and training systems anticipate these changes to simultaneously equip the existing workforce and prepare new generations with job skills to succeed in the AI era? How can the private sector be involved in the governance, financing and management of technical and vocational education and training (TVET) programmes? **Chair** Mr Borhene Chakroun, Director, Division for Policies and Lifelong Learning Systems, UNESCO **Keynote speeches** • **Response to the impact of AI on the future of work and skills development:** Mr ZHANG Jiaming, Vice Mayor of Beijing Municipal People's Government • **Capital, labour and power in the age of automation:** Mr Carl Benedikt Frey, Oxford Martin School, United Kingdom of Great Britain and Northern Ireland **Panelists** • Ms Nathalie Smuha, Coordinator, High-Level Expert Group on AI, European Commission, Directorate-General for Communications Networks, Content and Technology • **The report of Global Commission on the Future of Work - Work for a brighter future:** Ms Irene Zhou Chang, Labour Law Specialist, ILO Beijing Office • **The use of AI in workforce transformation, skills development and job matching:** Mr Gary Gan, CEO, JobKred, Singapore • **UNESCO-CRI Open Alliance for reimaging and developing Human–Machine Collaborative Intelligence:** Mr Francois Taddei, President, CRI, France
11:00 – 11:30	Break

Friday, 17 May 2019

11:30 – 13:00	Breakout Sessions
Beijing Palace West Hall (1st Floor of Beijing Hotel International Convention Center)	**2.1. Anticipating the future of work and defining an AI skills framework** AI and automation have transformed value chains in industry, service and agriculture sectors. In contrast to the fears around job displacement and a jobless world caused by automation, the optimistic perspective highlights the fact that technology is increasing the number of high-skilled jobs that require latent human creative abilities that were wasted before routine jobs were automated. Economies and societies will be less affected by automation if job-displaced workers are prepared with the skills needed for new jobs. In this context, education and training systems need to develop a robust and reliable understanding of the future of work, continuously define skill needs in the labour market, and renew skill and qualification frameworks in order to keep abreast of the changing demands of the AI-rich world of work. This session will address key questions related to anticipating the future of work and defining AI skills framework, including: How should we assess the impact of AI and automation on employment and skills development in different contexts? What are the emerging international, regional or national frameworks on AI skills? What is the core set of human–machine collective values and skills, including the unique human skills needed for striving in the AI era? **Chair** Ms Claudia Uribe Salazar, Director, UNESCO Regional Bureau for Education in Latin America and the Caribbean **Panelists** • Hon. Ms Claudiana Ayo Cole, Minister of Basic and Secondary Education, Gambia • **AI and skill needs identification: EU approach:** Mr Konstantinos Pouliakas, European Centre for the Development of Vocational Training (CEDEFOP), Greece • **Promoting skills development for jobs in the AI era:** Mr Sameer Sharma, Senior Advisor, Regional Office for Asia-Pacific, ITU • **Promoting AI skills development in Commonwealth countries:** Mr Venkataraman Balaji, Vice President, Commonwealth of Learning • **Integrating AI skills into K-12 school curriculum:** Mr HUANG Ronghuai, Professor of Beijing Normal University, People's Republic of China
Multi Function Hall (2nd Floor of Building A)	**2.2. Mainstreaming AI skills development in school and institutional curricula** It is estimated that more than 100 million new roles will be generated to manage the collaboration between humans and AI or algorithms by 2022. There is an increasing demand for AI skills like programming and AI app development, along with unique human skills that computers cannot easily master such as creative thinking, problem-solving and negotiating. Schools and TVET institutions need to prepare a massive pool of graduates and workers with basic sets of skills to meet immediate demand and provide an adequate basis for reskilling. The mainstreaming of AI skills in schools and TVET institutions needs to combine the teaching of AI with more practical approaches including Makers' practices, hackathons, and challenge-based co-designing of AI apps. This session will share experiences on how schools and TVET systems should respond to the key questions relating to the development of AI literacy and the building of a pre-service AI workforce, including: What are the effective methodologies and models for integrating AI skills development in school and TVET curricula? How can high-quality AI courses and necessary AI tools be made openly accessible, especially for the most vulnerable groups? **Chair** Mr Anasse Bouhlal, Programme Specialist in Higher Education, UNESCO Beirut Regional Bureau for Education in the Arab States **Panelists** • **SkillsFuture initative of Singapore:** Mr Michael Fung Jin Lung, Deputy Chief Executive (Industry), Chief HR and Data Officer, SkillsFuture, Singapore • Mr Jean-Marc Merriaux, Director of Digital Education, Ministry of National Education, France • **UNESCO-Ericsson project on AI skills development:** Mr Hiromichi Katayama, Acting Chief, Section for Youth, Literacy and Skills Development, UNESCO • **Mainstreaming AI skills development in schools:** Mr XU Li, CEO, SenseTime, People's Republic of China

Friday, 17 May 2019

Xiagongfu E

(2nd Floor of Beijing Hotel International Convention Center)

2.3. Upskilling and lifelong learning opportunities for the existing workforce for AI

Automation and changes in the value chain within the industry, service, and agriculture sectors are displacing traditional and low-skilled jobs, which are being replaced with new digital and high-skilled jobs. This has resulted in a reduction of demand for workers with traditional intermediate-level skills. Recruiters and employers are shifting their focus to finding workers with basic or appropriate AI skills. Equipping job-displaced adults with attainable AI skills will help them find jobs that require proximally higher skills and contribute to the upskilling of career development. Many companies are taking proactive approaches to providing upskilling and reskilling programmes to prepare their employees for the future generation of jobs and an AI-driven future.

This session will discuss key strategies that are needed to bridge the AI skills gap. Questions to be discussed include: How should governments coordinate multistakeholder partnerships and develop appropriate financing schemes to promote inclusive reskilling and upskilling in AI for low-skilled adult workers? What are the successful models from the private sector in reskilling employees for the future of jobs? How can lifelong learning entitlements (such as vouchers, subsidies and study leaves) help to address the skills needs?

Chair

Mr Libing Wang, Chief, Section for Educational Innovation and Skills Development (EISD), UNESCO Bangkok Asia and Pacific Regional Bureau for Education

Panelists

- **AI skills development:** Ms Kelly Shiohira, JET Education Service, South Africa
- **AI-boosted online platform for TVET:** Mr Raphaël Moraglia, CEO, Skillogs
- **Data analytics on skill gaps to bridge job seekers and employers:** Mr Davor Miskulin, Head, International Business Development, Burning Glass Technologies, United States of America
- Mr CHENG Jiangang, Professor of Tsinghua University, People's Republic of China

Jewel Room

(B1 floor of Building E)

2.4. Developing AI professionals and promoting research in AI in higher education

One of the main impediments preventing countries and organizations from developing and incorporating AI in the economy and education is a lack of AI professionals and AI talent. A key to closing the international AI divide is to cultivate local AI talent, including creating a pool of local AI professionals who have the expertise to design, programme and develop AI systems, as well as entrepreneurs in AI with complementary skills in management and leadership. This requires the introduction of new courses in higher education, including in engineering studies as well as master's and Ph.D. programmes. Governmental agencies, universities and partners need to address short-term and long-term needs, strengthen capacities to build a solid foundation in STEM and support interdisciplinary research and trainings.

This session will deliberate on fundamental questions about the actions required to develop local AI professionals and nurture innovations, including: How can AI talent and AI professional gaps be assessed and monitored? What is the role of universities and institutions? What are successful practices in accelerating the development of local AI professionals and AI talents? How can youth be mobilized and empowered in promoting local innovation in AI?

Chair

Mr Peter Wells, Chief, Section for Higher Education, UNESCO

Panelists

- **The first faculty of AI and AI academy in the Arab region**: Hon. Mr Khaled Abdel Ghaffar, Minister of Higher Education and Scientific Research, Egypt
- Mr YANG Zongkai, President of Xi'an University of Electronic Science and Technology, People's Republic of China
- **Romanian experience in developing AI professionals and high level research in AI:** Mr Stefan Trausan Matu, Senior Researcher and Professor, Faculty of Automation and Computer Science, University Politehnica of Bucharest, Romania
- **Learning analytics and Support Online Services (S.O.S):** Mr Daniel Burgos, Vice-rector, Knowledge Transfer, Universidad Internacional de La Rioja, Spain
- Mr LI Ming, Director, UNESCO International Centre for Higher Education Innovation (ICHEI)

13:00 – 14:30 Lunch (Beijing Hotel)

Friday, 17 May 2019

14:30 – 16:30 | **Plenary Session 3: Promoting the equitable, inclusive, and transparent use of AI in education**

Grand Ballroom

(1st Floor of Building C)

AI and automation have led to a high concentration of profits among a few countries and companies, contributing to growing inequality. Gender gaps in terms of AI skills and representation in AI professionals are widening. Without policy intervention, the deployment of AI in education will exacerbate digital divides and deepen gender inequalities. Cases of the misuse of personal data by machine learning have also intensified concerns about ethics, privacy and security in using AI to manipulate individual data across areas. Educational institutions, students and especially children are more susceptible to this threat. It is of great concern that less than 30 per cent of countries across all regions, excluding Europe, have comprehensive data protection laws in place.

This session will deliberate on how key international partners should take immediate actions and plan long-term cooperation to ensure that the AI revolution is a revolution that bridges divides, strengthens inclusion and leaves no one behind. Questions to be discussed include: How can low-resource countries be supported in boosting the development of AI technology for education? Can data and AI solutions be leveraged to break through access barriers to quality education for vulnerable groups? What are the successful strategies and programmes for promoting gender equality in accessing and applying AI technology for life, learning and work?

Chair

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

Keynote speeches

- **Leveraging AI for poverty elimination and equity in education:** Hon. Mr SUN Yao, Vice Minister of Education, People's Republic of China
- **Protection of data privacy:** Ms Malavika Jayaram, Director, Digital Asia Hub

Panelists

- Hon. Mr Mohibul Hassan Chowdhury, Deputy Minister of Education, Bangladesh
- **The policy response of India:** Mr N. Saravana Kumar, Joint Secretary, Ministry of Human Resource Development (MHRD), Government of India
- **Unlocking potential - the ethics of AI in education:** Ms Ivana Bartoletti, Founder, Women Leading in AI Network and Head of Privacy and Data Protection, Gemserv, United Kingdom of Great Britain and Northern Ireland
- Mr WU Zhaohui, President of Zhejiang University, People's Republic of China

16:30 – 17:00 | Break

17:00 – 18:30 | **Breakout Sessions**

Beijing Palace West Hall

(1st Floor of Beijing Hotel International Convention Center)

3.1. Promoting human-centred and responsible AI for education and learning

While regulatory frameworks have been adopted to safeguard the transparent and auditable use of education data and learners' personal data, strict regulation undermines the availability of data for learning analytics and other potential benefits. There is an urgent need to address the dilemma between making education data available and protecting the confidentiality and privacy of learners' personal data. There is emerging technology that enables decentralized or distributed data management that remains under the control of users rather than being controlled centrally.

This session will address key questions concerning promoting human-centred and responsible AI and mitigating the risks, including: What international and national frameworks on the responsible and ethical development and deployment of AI have been adopted, and how are they affecting business models? Will the new generation of AI technology enable or disable the protection of confidentiality and privacy for learners' personal data? How will hidden perils in the use of AI in education be illuminated and prevented?

Chair

Mr Saurabh Roy, UNESCO Mahatma Gandhi Institute of Education for Peace and Sustainable Development (MGIEP)

Panelists

- **Securing the trust in the Era of 5G and AI:** Mr Joe Guan, Head of Public Policy, GSMA
- **The role of AI in improving teacher productivity and student learning outcomes:** Mr Avik Sarkar, Head of the Data Analytics Cell, NITI Aayog, India
- **AI and social inclusion or exclusion of youth in Latin America:** Mr Lionel Brossi, University of Chile, Chile
- Mr Maxim Fedorov, Director, Skoltech Center for Computational and Data-Intensive Science and Engineering, Russia
- **Ethics-Embedded AI for Education:** Mr ZHANG Hongjiang, Chairman, Beijing Academy of Artificial Intelligence, People's Republic of China

Friday, 17 May 2019

Multi Function Hall

(2nd Floor of Building A)

3.2. Reducing the AI divide in education with Africa priority

Harnessing the Youth Dividend in Africa through AI and reducing the AI divide in the continent. The risk of divides in terms of benefitting from AI's potential for growth and sustainable development is high. A concerted effort is needed to promote North–South and North–South–South cooperation to share skills, knowledge, technologies, algorithms and facilities among governments or universities and other institutions, in order to ensure that AI developments are accessible to a wider range of countries. Without such effort, there is real risk of a global divide and further gaps, particularly for the Least Developed Countries (LDCs). Education can support addressing these challenges by developing AI-savvy learners, research and development. In particular, there is a perceived lack of awareness among policy-makers and educators in sub-Saharan Africa about AI and its implications for education, as well as a lack of capacity in planning sector-wide policies and programmes to harness the potential of AI to transform education systems and practices. The need to bring AI to the attention of decision-makers in Africa is key to reducing the AI divide and ensuring that AI developments are accessible to a wider range of countries, particularly in Africa.

This session will discuss the determining factors for improving the ability of all Member States to absorb, adapt and further develop AI technologies and their applications in education. Key questions to be discussed include: How can education support the bridging of digital and AI gaps? What is the role of international cooperation? How can networks such as UNESCO's Chairs be mobilized? What programmes are already in place, and what new programmes are required?

Video
Mr Firmin Edouard Matoko, Assistant Director-General, Priority Africa and External Relations, UNESCO

Introductory remarks
Mr Yao Ydo, Director, UNESCO Abuja Office

Chair of panel 3.2.1
Mr DU Yue, Director of the Africa Department, UNESCO

Panelists
- Hon. Mr Anatole Collinet Makosso, Minister of Primary and Secondary Education and Literacy, Congo
- Hon. Mr Afework Kassu, State Minister of Science and Higher Education, Ethiopia
- Hon. Mr Alton V. Kesselly, Deputy Minister for Planning, Research and Development, Ministry of Education, Liberia
- Hon. Ms Itah Kandjii Murangi, Minister of Higher Education, Technology and Innovation, Namibia
- Hon. Mr John Chrysostom Muyingo, Minister of State for Higher Education, Uganda

Chair of panel 3.2.2
Ms Zulmira Rodrigues, Chief, Session for Regional Cooperation, Africa Department, UNESCO

Panelists
- Hon. Mr Bagalatia Arone, Minister of Basic Education, Botswana
- Hon. Mr Emery Okundji Ndjovu, Minister of Posts, Telecommunications and New Technologies of Information and Communication, Minister of Primary, Secondary and Vocational Education a.i., Democratic Republic of the Congo
- Hon. Mr Khaled Abd El-Ghaffar, Minister of Higher Education and Scientific Research, Egypt

Friday, 17 May 2019

Xiagongfu E

(2nd Floor of Beijing Hotel International Convention Center)

3.3. Promoting gender equality and empowerment of women in AI

According to a recent UNESCO report, women and girls are 25 per cent less likely than men to know how to leverage digital technology for basic purposes, four times less likely to know how to programme computers and thirteen times less likely to file for a technology patent. There is also evidence of widening gender gaps in AI, featured by the gap in AI professionals. According to the 2018 Global Gender Gap Report, only 22 per cent of AI professionals globally are female. In addition, AI applications are demonstrating gender bias, due to gender-biased data fed by humans to machine learning systems. There is an urgent need to adopt gender fairness as a fundamental principle in machine learning and to close the gender gap in AI skills.

This session will discuss education interventions that can help women and girls cultivate the digital and AI skills they need to thrive in life, learning and work. It will address key questions relating to gender equality in AI areas, including: How can gender bias in AI be prevented? How can UN agencies, governments, NGOs and private partners join forces to promote women's representation in AI professionals?

Chair
Ms Saniye Gülser Corat, Director, Division for Gender Equality, UNESCO

Panelists
- Hon. Ms Kudayberdieva Gulmira Karimovna, Minister of Education and Science, Kyrgyzstan
- **The situation in Lao PDR:** Hon. Ms Khanthaly Siriphongphanh, Vice Minister, Ministry of Education and Sports, Lao People's Democratic Republic
- **Biases in AI:** Ms Moojan Asghari, Co-Founder, Women in AI
- Ms Ethel Agnes Pascua-Valenzuela, Director, Southeast Asian Ministers of Education Organization (SEAMEO), Thailand

Jewel Room

(B1 Floor of Building E)

3.4. Leveraging AI to promote inclusion and equity in education

Inclusion and equity in and through education is the cornerstone of achieving SDG 4 – Education 2030. All forms of exclusion and marginalization, as well as disparities and inequalities in access and learning outcomes, should be addressed. One of the main focuses of using AI in education should be those marginalized by disability, gender, socio-economic conditions, language, refugee or migrant status and location. Globally, one-third of the most vulnerable population are migrants, and about 1.3 per cent are displaced. Refugee enrolment rates are approximately 61 per cent for primary school and 23 per cent for secondary school, and it is estimated that 1 in 3 out-of-school children has a disability. With an increasingly stronger capacity to use remote imagery technology to collect and optimize resource allocations based on data analytics, AI provides immense potential to promote inclusion in education. AI-based tools such as natural language processing tools, intelligent online tutorials and voice-controlled assistants have provided means for breaking through barriers to inclusive and equitable access to education for the most vulnerable groups. The AI workforce should also promote inclusive approaches and value diversity.

The session will feature examples and discuss fundamental questions on the use of AI to promote inclusion and equity in education, including: How can AI be harnessed to support education for the most vulnerable groups, including persons with disabilities? What are the risks of AI applications that may exacerbate exclusion and marginalization and disparities and inequalities in access? How can funding and partnerships be mobilized to ensure the inclusive and equitable deployment of AI in education as a precondition for using AI for inclusion and equity?

Chair
Ms Natalia Amelina, Chief, Unit for Teacher Professional Development and Networking, UNESCO IITE

Panelists
- **AI in Education – Is the African perspective excluded?:** Mr John Walubengo, Lecturer, Multimedia University of Kenya, Kenya
- **Inclusive AI:** Mr Shadi Abou-Zahra, Accessibility Strategy and Technology Specialist, World Wide Web Consortium (W3C), Austria
- **AI for social responsibility:** Mr Brent Young, Vice President, Intel China, United States of America
- Ms Gail Wong Yeng Hoong, Senior Vice President, Limkokwing University of Creative Technology, Malaysia
- **Education for persons with disabilities:** Ms CHEN Jingying, Professor, National Engineering Research Center for E-learning, Central China Normal University, People's Republic of China

18:30 Dinner (Beijing Hotel)

Saturday, 18 May 2019	
09:00 – 12:30	**Study Tours and Exhibition**
	Three parallel visits to a local middle school, Tsinghua University, and an exhibition of AI applications for education: **Site 1. Beijing National Day School** Beijing National Day School (BNDS) provides education to over 4,300 students from grades 7 to 12. The school has conducted a wide range of experiments aimed at effectively integrating AI into the teaching, learning and school administration processes. The visit to Beijing National Day School will provide opportunities for participants to see the integration of AI and other frontier technologies in the classroom, thereby helping participants develop a better understanding of basic education reform and its achievements in China. On the day of the visit, the school will open up its underwater robotics classroom, technology classrooms and the student maker space to participants. Demonstration classes on algorithm and semantic recognition will also be arranged for visitors to sit in and experience. **Site 2. Tsinghua University** Tsinghua University ranks as one of the top academic institutions both locally and globally. It is an important base to cultivate talents, especially for science and technology studies in China. During the visit, the university will demonstrate its latest research achievements in AI and its application in education to participants. Visitors will have the opportunity to see exhibitions on AI basic research and some of the university's cutting-edge achievements. Empirical examples of AI in education will also be displayed, such as intelligent human–computer interaction (IHCI), Mu Book, and the Rain Classroom. **Site 3. The Zhongguancun Demonstration Zone** The Zhongguancun Demonstration Zone is the largest and most influential AI innovation cluster in China and formed a world-leading AI eco-system composed of R&D institutes and industries in fields of high-end chips, basic software, core algorithms, and industry-wide comprehensive solutions. The planned exhibition will include eight clusters: the cluster of new-generation industry in the cutting-edge areas of AI, big data, cloud computing, mobile internet, Internet of Things, network security, virtual reality and other fields; the cluster of intelligent equipment featured by industrial Internet technology, 3D printing technology and industrial intelligent robots; the cluster of intelligent transportation industry built on deep integration of autopilot, rail transit and other emerging technologies; the cluster of culture-technology integration industry to demonstrate new trends of integrated development among digitalization, AI, and integrated technologies; the cluster of world-leading new material industries featured by nano-materials, advanced carbon materials and quantum dot materials and technology; the cluster of biological and healthcare industry covering bio-medicine, medical devices, healthcare services and bio-agriculture; the cluster of energy-saving and environmental protection industry and new-energy industry featured by technological services, Engineering Procurement Construction, and integrated innovation; and the cluster to demonstrate resources for generating scientific and technological innovations with independent intellectual property rights.
12:30 – 14:30	Lunch (Beijing Hotel)

Saturday, 18 May 2019	
14:30 – 16:00	**Plenary Session 4: International partnerships towards an AI-enhanced future of education**
Beijing Palace East Hall (1st Floor of Beijing Hotel International Convention Center)	**Chair** Mr Yao Ydo, Director, UNESCO Abuja Office **Panelists** • Mr TAO Xiping, Honorary President of the World Federation of UNESCO Clubs, Centres and Associations • Mr Sameer Sharma, Senior Advisor, ITU • Ms Jacqueline Strecker, Connected Education Officer, UNHCR • Mr Mohamed Jemni, Director of ICT, ALECSO • Mr Larry Nelson, Regional general manager of Education, Microsoft Asia • Ms Paula Valverde, Product Director, ProFuturo Foundation • Mr Joe Guan, Head of Public Policy, GSMA • Mr SHEN Dai, Senior Vice President, Weidong Group • Mr YANG Songfan, Senior Director of AI Business, TAL Education Group
16:00 – 16:30	Break
16:30 – 18:00	**Plenary Session 5: Adoption of the outcome document**
Beijing Palace East Hall (1st Floor of Beijing Hotel International Convention Center)	This session is designed to present and adopt the outcome document of the conference developed by a drafting committee composed of expert representatives from diverse stakeholder and regional perspectives. **Chair** Ms Stefania Giannini, Assistant Director-General for Education, UNESCO • Presentation of the outcome document by the head of the drafting committee • Comments and adoption • Remarks of congratulations • Representatives of UNESCO governing bodies and its Member States, UN agencies, and partner organizations
	Closing Ceremony
	Chair Mr QIN Changwei, Secretary-General, National Commission for UNESCO, People's Republic of China • Senior Official of Beijing City, People's Republic of China • Ms Stefania Giannini, Assistant Director-General for Education, UNESCO • Hon. Mr TIAN Xuejun, Vice Minister of Education, Chairperson of National Commission for UNESCO, People's Republic of China
18:30	Dinner (Beijing Hotel)