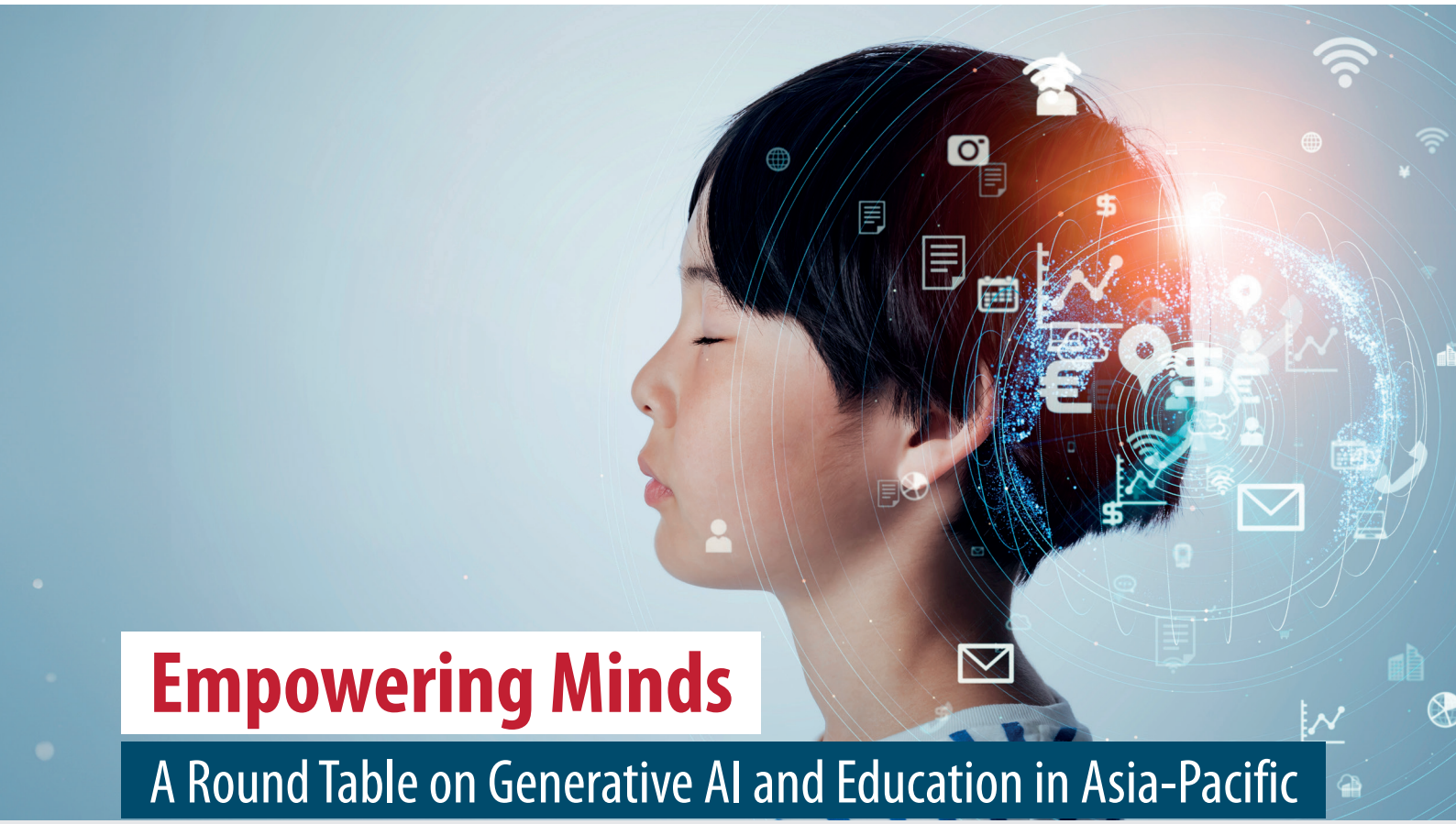

Empowering Minds

A Round Table on Generative AI and Education in Asia-Pacific

Introduction

The emergence of generative AI, a recent groundbreaking artificial intelligence (AI) technology capable of producing sophisticated content from text and images to simulations and audiovisuals, has become a transformative force across multiple sectors. Popular applications like OpenAI's ChatGPT and Anthropic's Claude are prime examples of the rapidly expanding range of generative AI tools that are having an impact in education across the Asia-Pacific. These tools offer unprecedented opportunities for enabling personalized learning experiences at scale and expanding access to high-quality learning resources. However, as generative AI increasingly reshapes classrooms, critical questions remain unanswered, such as:

- How can generative AI be ethically and responsibly integrated into educational settings?
- What policies and safeguards are needed to address issues like misinformation, algorithmic bias and threats to academic integrity?
- What challenges do Asia-Pacific countries face in harnessing generative AI in education, given the region's unique context?
- What are the strategies for Asia-Pacific countries to take up opportunities offered by generative AI, while mitigating the risks?

UNESCO – a global leader in education

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

The Global Education 2030 Agenda

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

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In response to these questions and emerging challenges in the region, the UNESCO Regional Office in Bangkok (UNESCO Bangkok), in collaboration with The Southeast Asian Ministers of Education Organization (SEAMEO), organized the regional experts meeting on 7-9 November 2023 in Bangkok, Thailand. This hybrid meeting, titled 'Empowering Minds: A Round Table on Generative AI and Education in Asia-Pacific', explored the implications of generative AI for teacher training and development. It served as an important platform to leverage opportunities and mitigate risks of generative AI in education across the Asia-Pacific region.

The overarching goal of this round table was to guide the transformation of education systems in the Asia-Pacific by:

1. Exploring implications for responsible and ethical integration of generative AI in teaching and learning, with a focus on ChatGPT and other emerging technologies.
2. Enhancing the capacities of educators to utilize AI competencies in teaching and learning at the school level, while optimizing potential benefits and minimizing risks.

Specific objectives were to:

- ***Enhance*** capacity for generative AI integration in education by providing resources prior to the meeting, hands-on lab learning and the exchange of ideas with AI experts.
- ***Enable*** inclusive and equitable access to AI-driven education by identifying strategies to ensure inclusive, equitable access to AI-enabled education, regardless of learners' socioeconomic status, gender or location.
- ***Empower*** educators and learners with useful skills and competencies to use generative AI in their pedagogical and learning practices.
- ***Foster*** a hub of continuous learning via open dialogue on the challenges, benefits and risks of generative AI, focusing on its responsible use in education.

The round table was attended by ninety experts, educators and youth from twenty UNESCO Member States, international organizations, civil society, academic institutions and the private sector, with thirteen participants joining online. Through dialogue, knowledge sharing and collaboration among diverse stakeholders, the event provided a timely platform to explore options for responsible and ethical adoption of AI-driven teaching and learning in the region.

The key outputs of the round table were recommendations for policy and practice made during the breakout sessions. These recommendations culminated in the Outcome Statement which serves to guide governments, policymakers, educational institutions and stakeholders in the Asia-Pacific region to consider fourteen strategic actions for the responsible and ethical integration of generative AI in education. The Outcome Statement will also inform the preparation of a policy brief to provide guidelines on policy pertaining to Generative AI and education.

PRE-MEETING LEARNING LAB (7 November 2023)

Introduction to Generative AI

The three-day event began with a learning lab on generative AI, offering participants an introductory hands-on primer before the round table discussions started. Designed to equip attendees for the subsequent policy dialogue, the pre-meeting lab aimed to bring all participants to a common level of understanding about these tools' potential applications and current limitations. Since Asia-Pacific countries are at differing stages of AI engagement, it was important to ensure everyone was equally well-informed to facilitate productive talks. By furnishing this baseline knowledge, the session paved the way for more meaningful discourse in the expert round tables to follow.

Ms Faryal Khan, Programme Specialist at UNESCO Bangkok's Educational Innovation and Skills Development (EISD) section, welcomed partners from SEAMEO alongside experts, educators and youth from across the Asia-Pacific region and globally. Noting the historic opportunity presented by the gathering, she discussed generative AI's potential, if harnessed ethically and responsibly, to transform education within the diverse Asia-Pacific context. Ms Khan called for embracing collaborative efforts across sectors and supporting interdisciplinary approaches to making generative AI's impact extend beyond traditional educational boundaries. She outlined objectives and structure, positioning the lab as a preparatory platform to enable informed policy examinations in the upcoming round tables. She concluded by reiterating the significance of equipping participants with hands-on experience and a comprehensive view necessary for meaningful engagement in the upcoming dialogue.

Mr Vikas Kanungo, Senior Digital Development Consultant at The World Bank, introduced participants to generative AI, providing a foundational understanding of this emerging technology. He began by examining the spectrum of AI technologies and gave an overview of generative AI's diverse forms, such as large language models (LLMs), image generators and audio-visual tools. He provided an in-depth look into the key attributes of generative AI and delved into a discussion on LLMs and their ability to understand and respond to prompts. Mr Kanungo addressed common misconceptions about AI capabilities, clarifying that AI is still in its infancy compared to human brain functionality. He also discussed current limitations in terms of information accuracy due to database cut-offs, lack of contextual understanding and issues like hallucination. While noting these limitations, Mr Kanungo showcased LLMs' versatile applications using ChatGPT as an example – from content creation to code optimization and he traced the evolution of GPT. Looking ahead, he discussed the emergence of artificial general intelligence that can make decisions independently and the necessity of regulating AI. Concluding his presentation, Mr Kanungo pointed to ChatGPT's potential to be used in teaching and learning, setting the stage for further discussions on its educational applications.

Youth debate

A youth debate session was jointly facilitated by Mr Kanungo and Ms Ling Tan, Education Officer, EISD section, UNESCO Bangkok. The purpose of this interactive debate was to gather youth perspectives on the potential of generative AI in learning. This thought-provoking topic was debated by two student groups.

Group 1, the AI proponents, comprised youths from Singapore, Lao PDR and China. They were Ms Vedanti Pawar, Ms Souphalath Inthasone and Mr Jiaxuan Dai. This trio championed generative AI as an empowering tool in education, highlighting its role in boosting creativity and problem-solving skills. Their use of generative AI for designing climate change posters served as an example of its capability to spark individual creativity. The group emphasized generative AI's versatile applications, not just in education but also in business. They also discussed how AI could address resource limitations in schools, provide tailored educational experiences and support teachers.

Group 2, the AI opponents, comprising of students from Mahidol University, Thailand, Ms Warisa Kongsantinart, Mr Supawit Phimonjit and Mr Jomchai Chongthanakorn, expressed significant reservations about the use of generative AI in education. They warned of the risk of AI exacerbating biases and facilitating academic dishonesty. The group contended that implementing AI could widen educational disparities and that AI tools could be misused. Additionally, they raised concerns about issues of privacy, over-dependence on technology and the potential sacrifice of comprehensive educational experiences. They also noted AI's inherent limitations regarding explainability[1], copyright and adapting to diverse learning styles while maintaining meaningful human interaction.

Dr Alongkorn Parivudhiphongs, Assistant Professor at Thailand's Chulalongkorn University, added depth to the debate from an educator's perspective. He emphasized the importance of understanding and navigating the complexities of AI in education. He also appreciated students' use of first-hand experiences and observations in the debate, as it added evidence-based credibility to the arguments. Dr Parivudhiphongs pointed out that AI in education is not simply a black-and-white matter; while AI holds promise to benefit education, it requires thoughtful and responsible implementation for this promise to be responsibly fulfilled. Dr Parivudhiphongs raised the critical question at heart, whether the use of AI is for machine learning or for human learning.

He applauded the debaters for addressing how humans should remain in control in the age of AI, balancing technological power and human responsibility. He concluded by reflecting on the disruptive nature of AI in education and expressing optimism about the potential contributions of the younger generation in this evolving landscape.

1 Noting AI algorithms are often perceived as black boxes making inexplicable decisions, explainability is the extent to which an AI machine learning model and its output can be explained in a way that 'makes sense' to a human being.

The session concluded with vibrant discussions on the multifaceted impacts of generative AI on teaching and learning, emphasizing the necessity of adopting a balanced approach.

Features and benefits of generative AI

In Session Three, Mr Kanungo provided a glimpse into applications in teaching and learning, illustrating immediate benefits, such as personalized learning experiences and automating educational administration tasks. He illustrated AI's transformative role in democratizing and enhancing accessibility in education, particularly for emerging economies. Additionally, he explored how generative AI can assist in tasks such as curriculum design, generating personalized learning materials and simplifying academic texts, introducing tools like Gradescope[2], Fetchy[3], Cognii[4], Quillbot[5], Otter.ai[6] and Sendsteps.ai[7]. The presentation painted a broad picture of generative AI's growing significance in reshaping educational landscapes and teaching and learning approaches.

Mr Joe Hironaka, Adviser for Communication and Information at UNESCO Bangkok, presented UNESCO's approach to AI, which emphasizes human agency and values and avoids extreme views. This approach is encapsulated as 'ROAM-X', detailed in the organization's publication *Steering AI and Advanced ICTs for Knowledge Societies*[8]. Fundamentally, it champions AI's adherence to human rights and fosters openness, inclusivity and multi-stakeholder governance, considering gender perspectives. Mr Hironaka then discussed digital capacity building in the public sector, AI's influence on judicial systems and the creation of AI-focused MOOCs for raising awareness. The session also explored AI governance challenges (as specified in UNESCO's publication *Missing Links in AI Governance*[9]), AI's impact on women in the workforce and the significance of inclusive policymaking.

Ethical usage of generative AI

Session Four was led by Mr Phinith Chanthalangsy, Regional Adviser in Social and Human Sciences at UNESCO Bangkok. Mr Chanthalangsy outlined what is at stake with AI use and addressed the critical importance of ethical considerations, along with introducing UNESCO's *Recommendations on the Ethics of AI*[10] – grounded with interconnected values and principles such as proportionality, harm prevention, safety, security, fairness, non-discrimination,

2 Access: https://www.gradescope.com
3 Access: https://www.fetchy.com
4 Access: https://www.cognii.com
5 Access: https://quillbot.com
6 Access: https://otter.ai
7 Access: https://www.sendsteps.com
8 UNESCO. (2019). *Steering AI and advanced ICTs for knowledge societies: A Rights, Openness, Access, and Multi-stakeholder Perspective*. Paris: UNESCO. Access: https://unesdoc.unesco.org/ark:/48223/pf0000372132.locale=en
9 UNESCO, & Mila – Quebec Artificial Intelligence Institute. (2023). *Missing Links in AI Governance*. Paris: UNESCO. Access: https://unesdoc.unesco.org/ark:/48223/pf0000384787.locale=en
10 UNESCO. (2021). *Recommendation on the Ethics of Artificial Intelligence*. Paris: UNESCO. Access: https://unesdoc.unesco.org/ark:/48223/pf0000381137.locale=en

sustainability, privacy, data protection, human oversight, transparency, explainability, responsibility, accountability, awareness, literacy and collaborative governance.

Adopted by 193 UNESCO Member States, the recommendation provides concrete pathways to translate these values and principles into policies, practices and action in multiple areas, including education and research. Mr Chanthalangsy emphasized the need to develop skills prerequisites for AI education, including literacy, numeracy, coding, digital skills, media and information literacy and socio-emotional and AI ethics skills. He acknowledged the challenges AI technologies pose to human rights and stressed the importance of stringent requirements for AI systems in education, particularly in monitoring and assessing learner behaviours. He concluded with an overview of UNESCO's strategies for AI ethics. These include creating capacity-building and monitoring tools, forming high-level AI expert groups, initiating gender perspective initiatives and setting up global forums and observatories for AI ethics. This approach reflects UNESCO's commitment to addressing the ethical challenges of AI, while fostering human rights, education and global cooperation.

Hands-on workshop – ChatGPT in course design

Session Five was a hands-on workshop focused on integrating ChatGPT into course design. This was led by Mr Kanungo and he began with a detailed explanation of the GPT model, showcasing its capabilities. Mr Kanungo discussed the potential applications of ChatGPT in education, such as the creation of multiple-choice exam questions. He then gave a demonstration of various ChatGPT prompts, ranging from open-ended to multi-part, with an emphasis on chain-of-thought prompting techniques. Mr Kanungo addressed the model's limitations, including its tendency for repetitive or nonsensical text and he also noted improvements in GPT-4. He highlighted the importance of domain expertise in using AI tools, stating that AI cannot replace human understanding and judgment. He provided examples of how background knowledge affects model output and how fine-tuning can optimize results. Participants engaged in hands-on practice to experience the utility of ChatGPT in course development. The workshop concluded with a feedback session where participants shared their experiences and reflections.

The future of AI in education

Session Six featured an online presentation by Dr Ethel Agnes P. Valenzuela, Education Adviser at the ASEAN Secretariat. Dr Valenzuela gave a comprehensive overview of the evolving landscape of AI in education within ASEAN. Highlighting AI's growing influence, she cited projections indicating that the AI education industry is expected to reach US$3.68 billion by 2023. Dr Valenzuela discussed the roles of LLMs and AI applications in tasks such as grading, personalizing education and gathering information. She introduced critical policy measures and frameworks established by ASEAN, including the *ASEAN Digital Masterplan 2025*[11], the *ASEAN Digital Economy Frameworks*[12] and the *Declaration on the*

11 Access: https://asean.org/book/asean-digital-masterplan-2025/

12 Access: https://asean.org/wp-content/uploads/2023/09/Leaders-Statement-DIGITAL-ECONOMY-FRAMEWORK-AGREEMENT.pdf

Digital Transformation of Education Systems of ASEAN[13] – the realization of these requires consideration of digital inclusion and capacity building for educators. Naming a survey revealing ASEAN youth's growing reliance on digital tools, Dr Valenzuela then provided a detailed country-by-country overview of AI in education across ASEAN Member States. She outlined each country's stage of AI development and integration in the educational sector, along with specific educational programmes, national strategies and initiatives related to AI in countries such as Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

Next, Mr Benjamin Vergel De Dios, Programme Specialist at EISD, UNESCO Bangkok, gave a presentation exploring the implications of generative AI in education. He highlighted the emerging divide in AI literacy, emphasizing varying access, understanding and the usage of AI across different groups. Mr De Dios stressed the need to raise awareness and competency to bridge this AI literacy gap. He pointed to actions needed, including enhancing AI literacy with technical, practical and ethical understanding and upskilling teachers in AI tool use.

Dr Tianchong Wang, Chief Rapporteur and Consultant at EISD, UNESCO Bangkok, brought the session to a close with reflections and takeaways. Dr Wang acknowledged the transformative potential and the associated risks of generative AI in education, the importance of a nuanced approach towards its integration and the need for balancing technological advancement with ethical considerations and human-centric values. He noted the necessity of capacity building in technical, ethical and critical thinking skills to navigate and harness AI responsibly. Dr Wang then connected these insights to the broader context of the upcoming expert round table meetings. He highlighted how the pre-meeting discussions had successfully laid a solid foundation, equipping participants with a comprehensive understanding of the multifaceted aspects of generative AI in education. This, he stressed, was crucial for facilitating more meaningful and productive policy dialogues in the subsequent round tables.

Finally, Mr John Arnold Siena, Deputy Director of the SEAMEO Secretariat, gave the closing remarks, expressing his gratitude for the enriching discussions and the breadth of perspectives that had been shared. Mr Siena underscored the significance of the topics addressed, acknowledging their critical role in shaping the future of education in the Asia-Pacific region. He emphasized that the issues and insights raised during the pre-meeting were not just conversation starters but fundamental pillars for the forthcoming round table discussions. Concluding with a note of optimism, Mr Siena expressed a strong conviction that the collective wisdom and insights from these sessions would be pivotal in crafting policy recommendations that not only address the ethical and responsible use of generative AI, but also position the Asia-Pacific region at the forefront of educational innovation and excellence.

13 Access: https://asean.org/declaration-on-the-digital-transformation-of-education-systems-in-asean/

DAY ONE ROUND TABLE EXPERTS MEETING (8 November 2023)

Opening session

Ms Soohyun Kim, Director of the UNESCO Regional Office in Bangkok, gave the opening remarks online. She emphasized the need for cautious and responsible integration of AI in education, particularly given the Asia-Pacific's distinct challenges and diversity. She recognized AI's transformative potential in personalizing learning, fostering creativity and enhancing critical thinking, while stressing the importance of ethical, inclusive and equitable implementation. Ms Kim also pointed out the need for empowering educators, nurturing inclusive student environments and addressing concerns like data privacy and bias. Ms Kim highlighted the value of collective efforts, advocating for continued collaboration, knowledge sharing and developing inclusive guidelines to align understanding and strategize AI's future role in advancing education in the region.

Datuk Dr Habibah Abdul Rahim, Director of the SEAMEO Secretariat, used her welcoming remarks to highlight the transformative potential of AI to revolutionize education in the Asia-Pacific region. She noted AI's ability to personalize learning, provide immediate feedback and assist teachers with administrative tasks – while also acknowledging key challenges and risks. These include the dominance of English-language AI solutions, the need for wider adoption of AI among educators and the importance of educating students about AI. Dr Habibah raised ethical concerns around privacy, data security and risks like plagiarism, along with the need to protect teachers' digital content. She pointed out that AI could exacerbate educational inequalities, especially in areas with limited Internet access, underscoring the importance of inclusive and accessible AI implementation. She referenced UNESCO's *Recommendation on the Ethics of Artificial Intelligence* and the TeachAI's *AI Guidance for Schools Toolkit*[14], positioning the round table as a crucial platform to discuss AI's rapid development in the region and strategize its wise, responsible and inclusive integration into education.

Mr Libing Wang, Chief of EISD, UNESCO Bangkok, used his opening speech to focus on generative AI's impact on education in the context of the Asia-Pacific region. As a collaborative effort between UNESCO Bangkok and SEAMEO, he emphasized the meeting's significance as a crucial step towards shaping a responsible and inclusive educational future with AI. Mr Wang envisioned an AI-driven educational renaissance with the potential to enhance teaching and learning, while acknowledging ethical challenges such as academic integrity and algorithmic biases. He stressed the urgent need to understand AI's implications in the Asia-Pacific while drawing insights from global conversations. He also underscored the importance of cross-sectoral collaboration. Mr Wang positioned the round table as a platform to facilitate ethical AI integration, empower teachers in AI use and ensure equal AI access for all learners. He suggested the Outcome Document from the round table, containing actionable recommendations, would support Member States to build on the opportunities of generative AI in education and mitigate its associated risks.

14 Access: https://www.teachai.org/toolkit

Keynote speech

Ms Faryal Khan's keynote address on state-of-the-art generative AI in education, particularly in the Asia-Pacific region, provided a comprehensive overview of the field. The presentation commenced with a detailed chronicle of AI's evolution, setting the stage for a deeper dive into the current dynamics of generative AI in education. Ms Khan unfolded the multifaceted impacts of this technology, ranging from its capability to transform teaching methodologies and learning experiences, to its implications on data privacy and the proliferation of misinformation. The keynote address illuminated the key advantages of AI in education, highlighting its potential to streamline tasks, assist teaching and unlock new horizons for professional development. The speech also delved into challenges posed by generative AI, such as intricate issues surrounding data privacy, the nuances of cybersecurity threats and the ethical conundrums related to academic integrity and algorithmic biases. It included examples from various Asia-Pacific countries, such as Singapore's pioneering efforts in responsible AI implementation and China's strides in developing generative AI models designed for educational purposes. Additionally, the presentation showcased UNESCO's pivotal role at the global level in shaping the AI landscape in education.

This included the development of AI competency frameworks and the publication of comprehensive guidelines aimed at ensuring the ethical, safe and equitable deployment of AI in educational settings. The keynote concluded by underscoring the paramount importance of formulating comprehensive policies and ethical frameworks. It highlighted the necessity for partnerships with the AI industry, stressing the critical need to balance the immense potential benefits of generative AI in education against its possible risks, thereby paving the way for a future where AI and education coalesce to create an era of unparalleled learning and growth.

Potential solutions and good practices on how generative AI is integrated in teaching and learning

Round Table Discussion One sought to assess the current landscape of generative AI in education, with a stock-taking of state-of-the-art solutions and practices pertaining to the use of generative AI in education, plus identifying tools and resources currently available to teachers and students. It was moderated by Mr John Arnold Siena of the SEAMEO Secretariat.

The session began with a video message from Dr Kristen DiCerbo, Chief Learning Officer at the Khan Academy, on 'The Practical Implications of AI for Teaching and Learning'. In her address, Dr DiCerbo highlighted how the Khan Academy's AI-powered tutor, Khanmigo[15], incorporates key learning principles into its design. She emphasized that students learn more when they are cognitively engaged, work at the edge of their capabilities, receive immediate feedback and see value in their learning. Khanmigo provides unique engagement, such as enabling students to interact with literary characters to deepen their understanding.

15 Access: https://www.khanacademy.org/khan-labs#khanmigo

For mathematics, AI acts as a tutor, breaking down problems step-by-step rather than giving direct answers, enhancing the learning process. This approach differs considerably from general AI, such as ChatGPT, as it is tailored for education. Dr DiCerbo also mentioned how AI can provide instant mathematics feedback and engage students in discussions about the relevance of their learning to their interests and goals. Her message concluded that AI, when aligned with insights about effective learning, can significantly augment human intelligence and potential, especially in education.

Following this, Dr Yu Lu, Director of the Artificial Intelligence Lab at Beijing Normal University, gave a presentation on the 'Research and Practice of Generative AI for Education'. He provided an overview of China's AI policy, noting key milestones like the *New Generation Artificial Intelligence Development Plan*[16] from 2017 and the latest *Interim Measures for the Management of Generative Artificial Intelligence Services*[17] released in 2023. Dr Lu also introduced AI adoptions in the education sector and AI education in K-12 schools in China, stating that AI modules have been officially introduced into the national curriculum by the Ministry of Education since April 2022. He said over 158 million students in more than 20,000 primary and junior high schools are expected to engage with AI-related subjects weekly.

Dr Lu then pointed to promising research directions of generative AI in education, including the application of LLMs in educational settings, the evaluation of educational content, ethical considerations and the development of user-friendly interfaces for LLM-based systems. Various research papers exploring these themes were showcased, including topics like how LLMs are used for generating multiple-choice questions, detecting AI-generated code in education and teaching languages. Practical implementations of generative AI in education were also explored, with a presentation on practical platform using LLMs designed to assist teachers in Beijing.

This platform addresses the educational quality gap between urban and rural areas by providing resources and class plans tailored to individual teachers, helping them create more effective and personalized learning experiences. Dr Lu also touched upon persisting challenges like inadequacy of resources and teacher training. To address these, he cited initiatives for developing AI teaching and learning platforms, along with training programmes for educators. The presentation concluded with the recommendation to access a book Dr Lu co-edited that covers the latest AI research in learning, including AI's impact on wellbeing, AI in games and simulations, AI technologies for education and ethical challenges in new learning environments.

Dr Kenneth Y T Lim, Senior Education Research Scientist at the National Institute of Education, Singapore, explored 'Generative AI and its Potential in Nurturing Learner Empathy, Prosocial Values and Environmental Stewardship'. He discussed his team's focus and Singapore's stance on generative AI in education, guidelines on its use at their university

16 Access: https://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm
17 Access: http://www.cac.gov.cn/2023-07/13/c_1690898327029107.htm

and their work using generative AI to help students learn coding. The presentation included a case study on providing students who are new to coding with timely feedback using generative AI. This is undertaken as a collaboration with the Institute of Technical Education, Singapore.

The presentation focused on a tool designed to offer constructive feedback on coding, encouraging problem-solving strategies without providing direct solutions. The tool was piloted with students learning Python and it can be extended to students of other coding languages as well. Dr Lim also delved into the intersection of neuroergonomics, generative AI and data science. He introduced the Life2Well Project[18], which integrates the Internet of Things, data science and generative AI to help learners understand their emotional states, thereby fostering empathy and environmental stewardship. This approach uses IoT devices created by learners as they investigate everyday phenomena, in which generative AI is used to help learners visualize potential scenarios impacting their local environments, as a means to catalyzing empathy and learner agency.

Dr Natalie Lao, Executive Director of the App Inventor Foundation, in her presentation 'Empowering Students as Community-Centered App Inventors within the UNESCO AI Competency Framework for Students', emphasized hands-on learning and real-world problem-solving, based on MIT's 'mind and hand' philosophy. She introduced MIT App Inventor[19], a free, open-source platform, reaching over 9.2 million learners globally. This empowers individuals by enabling them to build fully functional apps for smartphones and tablets. It has a significant impact in under-resourced areas.

The presentation showcased App Inventor's integration of generative AI and its 'Data in Action' curriculum that educates on ethical data science. Dr Lao linked this to UNESCO's recent *Draft AI Competency Frameworks for Teachers and for School Students*[20], focusing on problem scoping, co-design and co-creation in AI learning. She also introduced Appathons[21], a marathon-like initiative that encourages students to build apps for social causes, aligning creativity and social responsibility with AI and app development.

Mrs Bethanie Drake-Maples, Founder of Atypical AI and a fellow at the Stanford Institute for Human-Centered Artificial Intelligence, offered insights on 'Connecting Policy with Reality in AI for Education'. She delved into the major tensions in this field, addressing issues of intellectual property in relation to foundation model data collection strategies, the anthropomorphization[22] of AI with its mental health implications and the challenge of balancing privacy with comprehensive data collection for personalization in the context of equity.

18 Access: https://sites.google.com/site/disciplinaryintuitions/life2well-health-and-well-being-with-data-science-and-the-un-sdg/
19 Access: https://appinventor.mit.edu
20 Access: https://www.unesco.org/sites/default/files/medias/fichiers/2023/12/UNESCO-Draft-AI-competency-frameworks-for-teachers-and-school-students_0.pdf
21 Access: https://appathon.appinventor.mit.edu
22 Anthropomorphization is the tendency to attribute human-like traits to non-human entities.

The session featured youth perspectives from Mr Jiaxuan Dai, who demonstrated the educational apps AVID READER and STORYLIZE. He developed these using the MIT App Inventor and he outlined how these apps are powered by generative AI technology.

The round table enabled insightful dialogue, with panelists exchanging perspectives dynamically. Speakers highlighted generative AI's transformative potential in education and emphasized that critical thinking and collaboration skills become more vital than ever in the AI age. Human-AI collaboration could pioneer a new approach to teaching, learning and assessments, empowering educators to focus on complex mentoring while providing personalized, effective feedback for learners.

Unbiased data sets and inclusive algorithms are essential for AI systems to serve diverse populations equitably, the round table heard. Maintaining transparency and explainability also promotes trust. Moreover, collaborative design between developers, instructors and students is key to meeting diverse and specialized learning needs in the Asia-Pacific region. Accessibility is also critical to ensuring emerging economies can acquire AI skills and overcome connectivity barriers. Quality assurance mechanisms for AI in education are urgently required to promote equitable and empowering impacts for all, overcoming disparities. The discussion highlighted governments' vital coordinating role in this rapidly evolving landscape.

Benefits and risks for generative AI and education

Round Table Discussion Two sought to identify opportunities and benefits of generative AI in education, such as in personalized learning, teacher preparation, AI-driven assessment and related areas. The dialogue also aimed to delineate the challenges, risks and ethical considerations surrounding the use of generative AI in education – including issues like data privacy, governance and algorithmic bias. The session was moderated by Mr Joe Hironaka of UNESCO Bangkok.

The session began with an introductory presentation delivered online by Ms Anna Goldie, Senior Staff Research Scientist at Google DeepMind and PhD Candidate in the Stanford NLP Group. Ms Goldie provided a balanced perspective on generative AI in education, outlining key challenges such as facilitating cheating, model hallucination, inappropriate or dangerous content, algorithmic bias, lack of interpretability and its heavy English-centric focus. She also highlighted the opportunities presented by generative AI, including saving teachers time by assisting in writing assignments, exams and projects, aiding in grading, identifying students needing help, offering feedback to teachers and providing personalized AI tutoring that can offer foreign language practice, immediate feedback on writing and adaptive problem sets for subjects such as mathematics.

Ms Meyda Noor Thertia Nento, Associate Project Officer in Social and Human Science at UNESCO Jakarta, followed with a talk on 'Ethical Perspective: The Benefits and Challenges of

AI in Education'. Ms Nento highlighted three key benefits of AI in education: personalized learning, interactive and immersive learning experiences, and transformative assistive technology.

She also discussed three significant challenges: risks of exclusion and unjust bias, erosion of human agency and the need for a forward look at AI that integrates scientific and technological activities with humanistic disciplines. To raise teacher awareness of these ethical perspectives, Ms Nento shared an example of the Ethics Teacher Training Courses (ETTCs)[23] on AI Ethics hosted at Universitas Gadjah Mada, Indonesia. She concluded by recommending adherence to the ethics of AI, citing UNESCO's *Recommendation on the Ethics of Artificial Intelligence*, *Readiness Assessment Methodology*[24], and *Ethical Impact Assessment*[25] as important guides.

Mr Amit Pawar, Education Solutions Specialist at Microsoft, discussed AI's transformative role in education from an industry view. He highlighted AI's ability to personalize learning, engage students, automate tasks, gain insights and prepare students for future skills. Demonstrating Microsoft's AI platforms like Azure OpenAI Service[26], Mr Pawar noted their benefits in content creation and timesaving for educators. He stressed the importance of responsible AI usage, including oversight and managing risks like academic dishonesty. Mr Pawar shared Microsoft's training and resources for educators to responsibly explore AI, addressing ethical concerns and illustrating current AI applications in education.

Dr Hannele Niemi, a professor at the University of Helsinki, discussed the impact of generative AI on student assessments. She highlighted its ability to produce diverse content types, including text, images and audio and its role in enhancing education through data analysis and personalized learning. Dr Niemi addressed risks concerning bias, safety and ethics in AI use. She gave examples of AI applications in translation, essay scoring, and proofreading. Additionally, she explained AI's potential in multimodal assessments that evaluate learning using text, speech, gestures and biological data, focusing on criteria like critical thinking. Dr Niemi concluded with recommendations for schools to create AI guidelines and teach skills in thinking, literacy and algorithm transparency.

Dr Shitanshu Mishra from the UNESCO Mahatma Gandhi Institute of Education for Peace and Sustainable Development (MGIEP) presented key highlights from MGIEP's upcoming report on AI in education. Keeping with MGIEP's vision to innovate in social-emotional learning and digital pedagogies, the presentation explored the complex interplay of algorithms, big data and education. Dr Mishra outlined objectives for AI in education, including enhancing learning effectiveness, making education more learner-centric, reducing teachers' burdens,

23 Access: https://www.unesco.org/en/ethics-science-technology/education
24 UNESCO. (2023). *Readiness assessment methodology: A tool of the recommendation on the ethics of Artificial Intelligence*. Paris: UNESCO. Access: https://unesdoc.unesco.org/ark:/48223/pf0000385198.locale=en
25 UNESCO. (2023). *Ethical impact assessment: A tool of the recommendation on the ethics of Artificial Intelligence*. Paris: UNESCO. Access: https://unesdoc.unesco.org/ark:/48223/pf0000386276.locale=en
26 Access: https://azure.microsoft.com/en-ca/products/ai-services/openai-service

and promoting inclusion and equity. Dr Mishra advocated for ethical approaches at both individual and systemic levels, focusing on empowering individuals and regulating educational data use. The presentation highlighted principles such as transparency, avoiding bias, protecting data privacy and preserving learner autonomy. The address also provided a preview of the forthcoming MGIEP report, which will cover AI's role in learner-centric models, data privacy protections and developing user competency frameworks.

The session also included a youth perspective from Ms Warisa Kongsantinart. As a representative of the digital-native generation, Ms Kongsantinart emphasized the natural ease and familiarity her peers have with technology, including AI and how this profoundly shapes their learning experiences and expectations from educational technology. She highlighted the importance of integrating AI literacy into the educational curriculum. Understanding the workings, limitations and potential misuses of AI is crucial, she argued, for students to become informed, responsible digital citizens in a technology-driven world. Ms Kongsantinart raised concerns about the impact of AI on the development of social skills and the importance of human interaction in education. She emphasized that while technology is an invaluable tool, the human element in teaching and learning must not be overlooked. Ms Kongsantinart concluded her perspective with a balanced view on AI in education – expressing both excitement about the possibilities it offers and apprehension about its challenges and risks.

A rich exchange of ideas characterized the round table discussion, with panelists contributing unique perspectives. The session concluded that advancements in AI have profoundly transformed education, enabling personalized learning at an unprecedented scale. However, the ethical implementation of AI in the classroom requires the creation of practical policies and guidelines to ensure technologies align with educational goals and student welfare. These policies should involve the collaborative efforts of teachers, parents, regulators and other stakeholders to account for a diversity of insights and concerns.

Such cooperation can lead to the development of comprehensive frameworks for AI in education. Additionally, issues around data privacy, intellectual property and student protection demand urgent attention as schools integrate advanced AI systems. Creating adaptable governance that keeps pace with rapid innovation is vital for the future-proofing of educational practices, ensuring their ongoing relevance and efficacy. The discussion highlighted how integrating emerging technologies in a balanced, human-centric way, tailored to instructional settings, will allow generative AI to effectively complement and not replace the role of teachers.

DAY TWO ROUND TABLE EXPERTS MEETING (9 November 2023)

Recap of day one by the Chief Rapporteur

Day Two of the round table discussions began with a recap by Dr Tianchong Wang, Chief Rapporteur and Consultant at EISD, UNESCO Bangkok. He revisited critical points from Day One, emphasizing the consensus on cautiously and responsibly integrating generative AI in education. He focused on AI's potential for personalizing learning, enhancing creativity and developing critical thinking, while addressing challenges such as data privacy, bias and equitable implementation.

Dr Wang highlighted key insights underscoring generative AI's transformative educational impact. He highlighted the necessity for a balance between human-AI collaboration and developing unbiased, inclusive AI systems. Discussions on the need for fostering empathy, environmental awareness, quality assurance and government coordination for equity were also noted. Concluding his recap, Dr Wang stressed the requirement for adaptable, ethical policies and guidelines to align AI with educational goals and student welfare. This set the tone for the day's discussions on policy considerations, key competencies for educators and students, empowering approaches and future directions for generative AI in education.

Findings of survey

Dr Kaushal Kumar Bhagat, Assistant Professor at the Indian Institute of Technology Kharagpur and Dr Ahmed Tlili, Associate Professor at Beijing Normal University, detailed the survey results on the adoption and understanding of generative AI in educational settings across the Asia-Pacific region. The findings encompassed educators' awareness and readiness to integrate AI into teaching, emphasizing the importance of equitable access and inclusion. The results also highlighted the need for skill development in ethical AI usage and the creation of transparent policy regulations to safeguard student privacy.

Drawing from a diverse range of demographics and institutional affiliations, the survey revealed key concerns regarding AI's impact on essential skills, regional policy requirements and challenges in accessing AI-related training and tools. This comprehensive overview shed light on both the current state and the potential challenges and opportunities of generative AI in education in the Asia-Pacific.

Policy considerations on generative AI for teaching and learning

Mr Cristobal Cobo, Senior Education and Technology Specialist at the World Bank's Education Global Practice, explored the strategic implications of using generative AI in education. He began by discussing current AI applications in schools, citing Wang & Cheng (2022)'s[27] tripartite AI in education agenda – learning from AI, learning about AI and learning with AI. He also acknowledged uneven adoption across institutions. Mr Cobo highlighted the potential of AI tutoring systems, especially for struggling students, while calling for more evidence on broader impacts.

He then focused on how generative AI could transform assessments, raising concerns about cheating and the need for foundational literacy and numeracy. Mr Cobo emphasized the importance of transparency in training data to ensure fairness and address biases, noting the Global South's underrepresentation in AI adoption. He discussed challenges such as bias, privacy and manipulation, highlighting consent, energy efficiency and training programmes as crucial. Mr Cobo's recommendations included improving AI literacy, establishing diversity audits and developing techniques to detect manipulated information. These insights provided an overview of the opportunities and challenges of implementing generative AI in education, emphasizing the need for ethical frameworks.

Empowering educators and learners with skills and competency to integrate generative AI in teaching and learning

Breakout Session One sought to shed light on the essential skills and competencies required to integrate generative AI effectively into teaching and learning. This session was moderated by Ms Faryal Khan of UNESCO Bangkok.

Chief Rapporteur and Consultant Dr Tianchong Wang addressed the urgent need for AI literacy among educators and learners, given the expanding role of generative AI. Dr Wang focused on the crucial role teachers play in the safe and effective application of generative AI in educational environments. He acknowledged the lack of specific frameworks or guidelines for integrating AI competencies into teaching, suggesting that we can draw valuable lessons from past technological advancements in education.

Dr Wang outlined the benefits of generative AI, such as enhancing personalization, creativity and teacher productivity, thereby augmenting rather than replacing teacher expertise. He introduced models like SAMR[28] and TPACK[29] to assist teachers in seamlessly integrating AI into their teaching methods. The presentation highlighted the significance of appreciating

27 Wang, T., & Cheng, E. C. K. (2022). *Towards a Tripartite Research Agenda: A Scoping Review of Artificial Intelligence in Education Research. Artificial Intelligence in Education: Emerging Technologies, Models and Applications* (pp. 3-24). Singapore: Springer Nature Singapore.

28 Puentedura, R. (2006). Transformation, technology, and education. Access: http://hippasus.com/resources/tte/

29 Mishra, P., & Koehler, M.J. (2006). Technological Pedagogical Content Knowledge: A Framework for Integrating Technology in Teacher Knowledge. *Teachers College Record*, *108*(6), 1017-1054.

the human aspect in empowering educators to utilize generative AI, promoting a continuous, evolving learning process.

Additionally, Dr Wang emphasized the importance of equipping teachers with clear knowledge and connecting them to share experiences and insights through communities of practice and professional networks.

Participants then engaged in breakout sessions and were divided into four groups. Upon the completion of discussions, all participants returned for the 'reporting back to plenary' session. Dr Antonia Mandry, Education Specialist at the UNICEF East Asia and Pacific Regional Office, served as the moderator. Representatives from each breakout group were invited to summarize the discussions held within their respective sessions.

Group A – 'Skills for Educator's Effective AI Integration'	
Lead	Dr Vaikunthan Rajaratnam, Adjunct Professor of Innovative Digital Learning at the Asia Pacific University of Technology and Innovation.
Guiding Questions	• What specific technical proficiencies are essential for educators and students to effectively navigate and implement AI-driven educational solutions? • What are the core pedagogical skills educators need to effectively integrate generative AI tools into their teaching approaches?
Results and Key Insights	• An ideal 'GenAI-powered' teacher should use AI to supplement and enhance, not replace, their teaching. • Three domains of teachers' competencies were identified: knowledge (including understanding AI's capabilities and limitations and content curation); skills (like digital literacy, validation of AI responses and trial-and-error learning); and attitudes (such as being humble, fearless, innovative, and curious).
Group B – 'Literacy for Student Ethical and Responsible Generative AI Use'	
Lead	Dr Sherlyne Acosta, Senior Educational Research and Development Specialist, SEAMEO INNOTECH.
Guiding Questions	• What skills and competencies are essential for students to critically assess and interpret AI-generated content? • What skills and competencies are essential for students to ethically and responsibly use and interact with generative AI?
Results and Key Insights	• Key competencies include critical thinking, philosophical inquiry, the art of questioning, agency and empathy, information literacy, understanding AI and computer science fundamentals and an interdisciplinary approach. • They also emphasized the importance of ethical awareness, comprehensive ethical guidelines and a learner-centric approach in the use of AI.

Group C – 'Empowering Educators'	
Lead	Ms Danting Cai, Education Officer, UNESCO Bangkok.
Guiding Questions	• How can teacher education curricula be adapted to better equip educators with the knowledge and skills needed to utilize generative AI effectively in their teaching? • How can government and education institutions cultivate a culture of continuous learning and adaptability among educators, given the rapid evolution of AI technologies? • What resources and support structures are needed for educators to stay technologically updated and pedagogically informed with the evolving AI landscape?
Results and Key Insights	• This group suggested introducing AI as a tool to aid teachers, addressing equity and the digital divide, providing access to technology and infrastructure and raising standards for teacher training. • They highlighted the importance of public-private partnerships, educating parents about AI and maintaining motivation and curiosity among educators towards new IT developments.
Group D – 'Empowering Learners'	
Lead	Ms Abigail Lanceta, Programme Officer, SEAMEO SEPS.
Guiding Questions	• How can students be equipped to understand the capabilities, limitations, ethical implications and potential biases of Generative AI tools they interact with? • How can students be equipped with the skills to navigate potential misinformation or inaccuracies produced by generative AI tools in their learning journey? • What kinds of support are needed for students to ethically and responsibly use and interact with generative AI?
Results and Key Insights	• They underscored the importance of ICT knowledge, digital citizenship, ethical considerations and scaffolded skill-building in AI. • They also stressed the need for support, not just in technical aspects, but in educating teachers and parents and embedding AI knowledge in the curriculum for a holistic approach to learning.

Policy recommendations and future directions for inclusive and equitable access to AI in education

Round Table Discussion Three aimed to work towards policy recommendations and explore future directions for responsible generative AI adoption in education, specifically in teaching and learning in school settings. This session was moderated by Mr Vikas Kanungo of the World Bank.

In his presentation, Dr Songphon Munkongsujarit, Director of Strategy Monitoring and Evaluation Division at Thailand's National Science and Technology Development Agency, comprehensively outlined Thailand's strategic vision for integrating AI in education. Dr Munkongsujarit detailed Thailand's *National AI Strategy and Action Plan (2022-2027)*[30], focusing on developing and implementing AI technologies in educational settings.

30 Access: https://ai.in.th/en/about-ai-thailand/

He recognized AI's role in enhancing educational outcomes but warranted the necessity to overcome challenges like the digital divide and ensure ethical AI use. Dr Munkongsujarit also pointed out the need to prepare educators and students for an AI-influenced educational landscape. The presentation offered insights into Thailand's commitment to leveraging AI in education, discussing key initiatives, objectives and anticipated challenges in effectively adopting AI within the education sector for inclusive and equitable access.

Mr Wong Teck Kiong, Senior Specialist, Technologies for Learning Branch, Ministry of Education of Singapore, presented 'Policy Recommendations from Singapore's perspectives'. He introduced the Student Learning Space (SLS)[31] platform as an example of Singapore incorporating AI in education. Mr Wong elaborated on how this system's development and use, aimed at personalizing learning and supporting student development, align with Singapore's AI-in-Education Ethics framework. This framework, built on Agency, Inclusivity, Fairness and Safety principles, ensures AI upholds learner agency and avoids biases. Furthermore, he discussed the 'Transforming Education through Technology' Masterplan 2030[32], Singapore's post-COVID-19 strategy to harness technology's potential for improving education. This masterplan sets strategic goals, including customizing learning, boosting digital literacy, developing 21st-century skills, enhancing teacher development and improving infrastructure. Mr Wong's presentation spotlighted Singapore's holistic, policy-driven approach to integrating AI in education.

In the presentation 'Integrating Generative AI in the Classroom: Fostering a Supportive Environment', Ms Anna Pons, Schools+ Project Lead, highlighted the rapid advancements of generative AI in performing academic tasks, as demonstrated by improvements in the Programme for International Student Assessment (PISA) tests from 2022 to 2023 in reading and mathematics. The presentation examined generative AI's educational implications, including providing feedback, support, classroom interaction, cognitive engagement, content enhancement and socio-emotional development for students.

A focus was on how the traditional one-size-fits-all education model could be replaced by more personalized approaches tailored to individual students through AI. This included meeting the needs of disadvantaged students, those requiring special education, immigrants and refugees, remote learners and gifted students. The presentation emphasized creating policies that enable effective teaching and learning with generative AI. Key considerations covered included future learning requirements, involving teachers and students in AI design, assessing risks and benefits and ensuring equitable and safe access.

Dr Sherlyne A. Almonte-Acosta's presentation 'Continuous Review and Adaptation of Education Policies in the Age of Generative AI' examined evolving education policies as generative AI becomes integrated into classrooms. She highlighted this policy's vital role in upholding the right to education alongside generative AI adoption, questioning its inclusion

31 Access: https://www.learning.moe.edu.sg
32 Access: https://www.moe.gov.sg/education-in-sg/educational-technology-journey/edtech-masterplan

in legislation, policies and discourse. The presentation addressed primary obstacles to implementing generative AI and how current policies have tackled these, while pinpointing remaining gaps and challenges. Key issues included access, quality and existing policies' consideration of generative AI, balancing resource allocation to expand access and improve quality.

Dr Almonte-Acosta also explored whether generative AI could increase disadvantaged students' access to quality education, sharing implementation experiences and lessons learned. Recommendations focused on the proposed Generative AI in Education Readiness Framework for analyzing contexts and the Generative AI Readiness Index for evidence-based insights to ensure successful access and quality education with generative AI. She emphasized the need to continuously reassess and adapt education policies given generative AI integration in classrooms.

The presentation 'Benefits and Risks of Generative AI in Education' by Ms Souphalath Inthasone and Ms Vedanti Pawar provided youth perspectives on inclusive AI in education. The presentation emphasized the need to ensure inclusive AI access, highlighting ethical use guidelines, privacy considerations and support for diverse learners, including those with disabilities and English language learners. The address stressed the importance of educator training in AI and developing appropriate AI-powered educational tools for all students. Future directions discussed included enhancing personalized learning through AI, improving assessment methods, expanding AI initiatives to remote areas and addressing the digital divide. The presentation also highlighted the necessity of establishing ethical guidelines and managing student expectations regarding inclusivity, accessibility, digital literacy and curriculum integration. It also offered a nuanced view of the benefits and challenges posed by generative AI in education.

A round table discussion followed, with panelists contributing to a rich exchange of ideas and viewpoints and they shared their perspectives on the policy recommendations and future directions. The discussion highlighted the need for policies that address language barriers and technological infrastructure and the need for guidelines that ensure AI's equitable and practical use in classrooms. The discussion showcased an alignment among panelists regarding the significance of policy harmonization for effective AI integration in education, emphasizing the importance of inclusive access to technological resources, ongoing training for educators and cultivating a learning environment that adapts to rapidly evolving AI technologies. There was a consensus on the necessity of continuous dialogue, collaboration between sectors and the development of tailored, adaptive educational practices to ensure equitable access and effective implementation of AI in diverse educational settings.

Recommendations to ensure inclusive and equitable access to AI to enhance teaching and learning

Breakout session Two revolved around 'Recommendations to ensure inclusive and equitable access to AI to enhance teaching and learning'. This session sought to collaboratively identify, discuss and formulate strategic recommendations across pivotal areas that concern inclusive and equitable access to AI to enhance teaching and learning. An introduction was given by Mr Kanungo of the World Bank. Participants then engaged in breakout sessions and were divided into five groups. Upon the completion of discussions, all participants returned for the 'report back to plenary' session. Mr Arnold Siena of the SEAMEO Secretariat served as the moderator. Representatives from each breakout group were invited to summarize the discussions held within their respective sessions.

Group A – 'Recommendations at the Policy Level'	
Lead	Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank.
Guiding Questions	• How can policies be framed to ensure equitable access to AI resources across diverse educational settings? • What safeguards should be in place to ensure ethical considerations are central to AI integration in education? • How can policies support continuous adaptation and evolution in response to the rapidly changing AI landscape?
Results and Key Insights	• Vision and Mission: Countries should define a clear vision and mission for AI in education for the next ten years, considering both macro and micro levels. • Readiness and Needs Assessment: Assess the readiness for AI adoption in education and tailor approaches to suit local contexts. • Skill Requirement Guidelines: Establish guidelines for minimum AI competency skills in education. • Policymaker Capacity Building: Enhance the capacity of policymakers to understand and implement AI strategies effectively. • Public-Private-Pupil Partnership: Move from public-private partnerships to include pupils, allowing for broader stakeholder engagement. • Monitoring and KPIs: Implement monitoring and KPIs for policy execution. • Benchmarking Educational Tools: Establish benchmarks for educational AI tools against standards for ethics, affordability, and scalability.

Group B – 'Recommendations for Teacher Training'	
Lead	Ms Ling Tan, Education Officer, EISD, UNESCO Bangkok.
Guiding Questions	• What specific skills and competencies should teacher training programmes incorporate/prioritize for effective generative AI integration? • How can continuous professional development be ensured to keep educators updated with the latest AI tools and methodologies? • What support structures are essential for educators to navigate the challenges of AI integration confidently?
Results and Key Insights	• Emphasize the role of teachers and school leaders as models of lifelong learners. • Highlight the importance of trust within the education system, allowing for autonomy and authenticity. • Promote the role of local champions in schools and celebrate small successes. • Encourage a shift from teacher training to teacher education.
Group C – 'Recommendations for Pedagogy and Assessments'	
Lead	Dr Orawan Sriboonruang, STEM Education Specialist, SEAMEO STEM-ED.
Guiding Questions	• What are the notable practices of generative AI related to pedagogy and assessments that warrant wider adoption in the Asia-Pacific region? • What are the key enabling factors and the lessons learnt for those promising practices?
Results and Key Insights	• Use AI tools for assessments. • Implement gamification and educational escape rooms for engaging learning. • Upskill teachers in using AI tools and align technology with learning objectives. • Integrate AI educational technology guidelines into every course module.
Group D – 'Ethical and Responsible Use of Generative AI for Teaching and Learning'	
Lead	Ms Meyda Nento, Social and Human Sciences, UNESCO Jakarta.
Guiding Questions	• What measures and safeguards can be implemented to mitigate ethical risks, such as bias and privacy concerns, when utilizing generative AI in teaching and learning contexts? • What strategies can be adopted to educate students about the ethical implications of AI-generated content, ensuring they become responsible users of such technologies?
Results and Key Insights	• Educate on validating work to safeguard against bias. • Enhance engagement using gamification and visual learning strategies. • Implement scenario creation for understanding ethical implications and focus on personalization. • Prioritize upskilling programmes for teachers and students in AI.

Group E – 'Recommendations for Areas for Research and Networks for Knowledge Exchange'	
Lead	Dr Tipajin Thaipisutikul, Expert in Generative AI and ChatGPT, Mahidol University, Thailand.
Guiding Questions	• What are the critical areas of research that can advance the harnessing of generative AI for promoting equitable, quality and inclusive education for all? • How can networks be established to facilitate knowledge exchange among educators, researchers and policymakers? • What collaborative initiatives can be undertaken to drive innovation and share best practices in AI-enhanced education?
Results and Key Insights	• Leverage AI in research, literature reviews, data analysis and peer reviews. • Emphasize understanding of plagiarism, ethical risks and responsible AI. • Adapt research methodology teaching to include AI technologies. • Establish networks for knowledge exchange among educators, researchers and policymakers. • Create digital collaboration spaces and organize regular meetings and conferences. • Encourage interdisciplinary research teams and share online resources in multiple languages.

Closing remarks and presentation of the draft Outcome Document

In her closing remarks, Ms Faryal Khan of UNESCO Bangkok captured the essence of the round table's key messages. She resonated with the attendees, who unanimously appreciated the event for its timely focus on Asia-Pacific issues. Expressing her gratitude to the participants, panelists and youth, Ms Khan highlighted their invaluable contributions that enriched the discussions. The participants viewed the highlights of the meeting video, showcasing the lively interactions and deep engagement among the participants during the three-day discussions. The release of an updated video and a comprehensive report that would distill the essence and key insights gleaned from the event was announced. She emphasized the critical role of diverse perspectives and collaborative efforts in adding depth and richness to the dialogue throughout the round table. This collective wisdom, she noted, was instrumental in shaping the Outcome Statement. This pivotal document would not only be widely circulated but also integrated into a policy brief, to serve as a significant step towards actionable change.

Dr Tianchong Wang of UNESCO Bangkok, presented the draft Outcome Document that encapsulates the key discussions, insights, and recommendations that emerged from the various sessions and breakout groups (Please see Annex). He informed the participants that the draft Outcome Statement would be distributed to all participants for further feedback, ensuring a collaborative and inclusive finalization process.

In closing, Ms Khan reiterated her thanks to UNESCO partners and team members. She emphasized the critical importance of the dialogue and collaboration that were initiated at the round table. This ongoing effort was essential for the responsible and ethical integration of generative AI in education across the Asia-Pacific region. It also positioned the region to potentially set a distinctive example in harnessing AI's transformative power, evolving educational paradigms and inspiring global trends.

The way forward

The 'Empowering Minds: A Round Table on Generative AI and Education in Asia-Pacific', co-organized by UNESCO Bangkok and SEAMEO, marked a significant event in addressing the integration of generative AI in the region's educational systems. This round table facilitated meaningful discussions and collaborative efforts among diverse stakeholders – establishing a hub of continuous learning for the responsible and ethical adoption of AI in education throughout the Asia-Pacific region.

As we look ahead, we must acknowledge that integrating generative AI into education across the Asia-Pacific region is multifaceted, requiring careful consideration and cross-sector collaborations. Central to this endeavour is the creation of dynamic, responsive policy frameworks. These policies need to be adaptive, evolving with technological advances while addressing vital issues like data privacy, governance and algorithmic bias, thereby fostering trust in AI applications in educational contexts.

Ensuring equity, cultural sensitivity and accessibility of generative AI tools is paramount. This challenge calls for concerted efforts towards enhancing infrastructure and localizing resources, particularly in less developed areas. Such an initiative is key to preventing an expanded digital divide and promoting inclusive learning opportunities for all.

Empowerment of educators and students through specialized training and curriculum development is another critical aspect. Equipping educators and students with AI literacy and skills prepares them for an AI-integrated future. Additionally, it is essential to tailor AI-driven education to various learning needs and ensure the cultural and contextual relevance of these tools for their effectiveness and acceptance.

The importance of public-private partnerships in sharing resources, expertise and driving innovation in AI education cannot be overstated. These collaborations are vital for the development of comprehensive AI-driven educational models that can be adapted across different regional contexts.

Continuous research and monitoring of generative AI's impact on education will provide the necessary insights for shaping policy and practice. This evidence-based approach is crucial for navigating future challenges and maintaining the relevance and effectiveness of generative AI in educational settings.

Fostering a culture of ethical AI use is crucial, involving educating all stakeholders about the potential benefits and risks of generative AI. Additionally, forming advisory committees with diverse representation will offer valuable insights and help guide best practices and policy directions.

The success of integrating generative AI in education hinges on the unwavering commitment and collaborative efforts of all stakeholders involved. It requires a shared dedication from governments, educational institutions, private sector entities, civil society and the international community to align efforts with broader educational goals, particularly those outlined in the *Education 2030* Agenda. By working together and upholding a commitment to responsible and equitable AI practices, we can ensure that the adoption of AI in education across the Asia-Pacific region leads to innovative, inclusive and effective educational outcomes.

ANNEX I

Empowering Minds
A Round Table on Generative AI and Education in Asia-Pacific
Outcome Statement

Preamble

1. We, the participants of the *Empowering Minds: A Round Table on Generative AI and Education in Asia-Pacific*, including ninety experts, educators and youth from twenty UNESCO Member States, international organizations, civil society, academic institutions, and the private sector (with thirteen joining online), met in Bangkok, Thailand, from 7 to 9 November 2023.
2. We reviewed the evolution of generative AI, taking stock of the current practices globally and in the Asia-Pacific and the diverse perspectives from stakeholders on opportunities, risks and priorities regarding responsible and ethical use of generative AI for teaching and learning. We reaffirmed our commitment to ensuring that generative AI in education is guided by key principles such as fairness, safety, privacy, equity, reliability, transparency, security and human-centeredness for inclusivity and accountability.
3. In alignment with the *Beijing Consensus on Artificial Intelligence and Education*, we recognize that addressing equity, inclusion, quality and infrastructure within the broader educational ecosystem is crucial for tackling multi-layered challenges and steering the future course of generative AI in education across the Asia-Pacific region.
4. We thus recommend that governments, policymakers, educational institutions, and stakeholders in the Asia-Pacific region consider strategic actions for the responsible and ethical integration of generative AI in education.

Recommended Strategic Areas for Consideration

For Governments/Policymakers

1. Form a multi-stakeholder, national-level advisory body on AI in education

Asia-Pacific countries could consider forming a national-level advisory group on AI in education, comprising various stakeholders. This body could be tasked to regularly assess the technology's impact and offer policy recommendations. Integral to its mission, the advisory body should actively involve young people and minority groups, ensuring their perspectives and needs are reflected in its policy recommendations. By conducting inclusive consultations and considering diverse viewpoints, this group could effectively address the needs of vulnerable populations, consolidate different perspectives and provide advice on matters like infrastructure development, data governance, inclusive algorithms/datasets,

ethical checks of AI tools, societal impact, industry responsibility, environmental sustainability and AI literacy.

2. Establish national frameworks, regulations, ethical standards and recommendations for generative AI and education

Countries in the Asia-Pacific region may benefit from establishing national frameworks, regulations and ethical standards to guide the responsible use of generative AI in education. These high-level documents should address critical concerns such as bias, safety, and privacy, in accordance with UNESCO's *Recommendation on the Ethics of Artificial Intelligence* and should also lay out plans for readiness and equitable implementation. By providing guiding principles and overarching strategies, schools can be better equipped to navigate generative AI. The frameworks could mandate ethical reviews of AI tools, emphasizing their transparency and explainability, coupled with vigilant oversight of student data usage, to uphold public trust in their educational use. Additionally, the regulatory frameworks and standards should also be subject to an ongoing review, ensuring they remain relevant and in line with technological advancements, evolving understanding of the issues and the changing needs of local contexts. Moreover, it would be beneficial to provide recommendations on the use and integration of generative AI in designing and reforming curricula and assessment frameworks. While these recommendations aim to guide and inform, they should not be seen as mandates but as tools to assist education leaders and educators in making informed decisions that best suit their unique contexts and needs.

3. Incorporate AI components in teacher education

Incorporating AI components into teacher training is crucial for preparing future educators to use generative AI effectively and responsibly in teaching practices. Programmes should offer courses that comprehensively cover generative AI's technical concepts, prompt engineering skills, pedagogical applications and impacts. Engaging in hands-on projects can enhance skills in evaluating tools, applying them contextually, monitoring their impacts and developing strategies for equity and inclusion. Importantly, this training should involve teachers in a critical examination of AI's broader implications and ethical challenges. This approach fosters a human-centred perspective, putting teachers in the driver's seat, empowering them to be able to make informed integration decisions and proactively mitigate associated risks. Updating accreditation standards to include AI competencies can further systematize preparation.

4. Create a centralized resource repository of generative AI in education

Governments might explore establishing a regional or national repository of high-quality resources to aid the integration of generative AI in education and facilitate knowledge exchange. This constantly expanding central hub, stocked with carefully selected generative AI tools, country-specific case studies, emerging evidence and exemplary uses, aims to promote equitable access to quality resources, especially for those unsure of where to begin. This repository could serve as a foundational reference point, enabling institutions

and educators, particularly in underserved areas, to access and adapt these resources to meet their unique needs or to inform policy and praxis. Moreover, the careful selection and distribution of these validated resources could offer some level of quality assurance, supporting the safe and responsible application of generative AI in education.

5. Introduce AI literacy in early childhood, elementary and secondary curricula

Governments could consider incorporating age-appropriate general AI literacy education into early childhood, elementary and secondary curricula. For the early grades, the focus could be on building awareness by introducing foundational concepts and capabilities of AI. As students advance, the curriculum could expand to include critical analyses of biases, societal impacts, AI ethics and information literacy. This proactive approach aims to equip students with the skills necessary for the responsible and ethical use of generative AI in learning and to prepare them for various engagements in a world where AI is becoming increasingly ubiquitous.

6. Foster partnerships with AI industry for the localization of AI solutions

Partnerships between policymakers, educators and the AI industry are key to ensuring generative AI programmes are tailored to local educational needs. Instead of relying on generic applications, these collaborations should focus on customizing solutions to meet various curriculum goals, address the needs of diverse student populations and include multilingual options for minority groups. Policy advocates can reduce access barriers, thus preventing exclusivity. Such partnerships, by leveraging local context expertise, could lead to the creation of ecosystems comprising secure, locally relevant AI applications, thereby enabling equitable benefits for all students.

7. Promote regional cooperation and knowledge exchange

Regional cooperation and knowledge exchange within the Asia-Pacific region could be instrumental in harmonizing standards and identifying promising practices for the responsible and effective integration of generative AI in education. Ongoing dialogues, research partnerships and the exchange of insights among policymakers and educators across the region can cultivate a shared understanding of effective policies, emerging best practices and key lessons learned. By pooling resources, countries can develop and take advantage of generative AI solutions in a more cost-effective way, avoiding unnecessary duplication of efforts. Such regional cooperation, with a focus on AI implementations that are appropriate for diverse contexts, may better address the unique needs of the Asia-Pacific.

8. Support and incentivize generative AI innovation or practices that cater to local needs and are inclusive and accessible to all educators and learners in the community.

Governments could provide resources to startups or universities pioneering AI solutions that address local challenges, integrate with cultural contexts and consider equity and inclusion. Governments can scale grassroots innovations making AI more accessible

for lower-resourced schools and disadvantaged communities. Supporting homegrown innovation ecosystems can yield more equitable impacts than importing one-size-fits-all solutions. Participatory design engaging educators and learners continuously could enhance human-centeredness. With supportive policies, countries can catalyze context-specific AI development, reflecting diverse community needs and upholding equitability principles.

For Institutions/Schools:

9. Develop clear policies or guidelines on student AI use

Institutions/schools could consider developing policies or guidelines on student uses of generative AI to leverage benefits and uphold academic integrity. Guidelines may encourage educational uses while prohibiting misuses that could undermine assessment validity. Guidance cautioning against potential misinformation, biases and directing to learning resources could promote responsible use of AI's learning potential while mitigating risks proactively. With swift technology advancement, ongoing refinement based on teacher and student feedback may help ensure responsive guidance evolution. A commitment to regular student and teacher training and evaluation on the use of AI in schools is also recommended.

10. Upskill students for responsible and ethical generative AI use for learning

Upskilling students for responsible and ethical AI use should prioritize critical thinking and ethical discernment. Students need exposure to AI limitations and biases through real-world examples. Equipping students with technical skills like prompt engineering, along with training on safe, responsible interaction, is important. Curricula should aim to instill core AI ethics principles aligned with national frameworks. Discussions weighing risks and benefits can inform responsible usage decisions. Evaluating model outputs can prompt reflections on issues like biases and societal impacts. Developing thoughtful interaction skills reinforces that AI technologies require discernment, not unquestioning use.

11. Update curricula and assessments to focus on skills that AI cannot replicate

Institutions/schools could consider reviewing and updating curricula and assessments. As generative AI excels at content, curricula should be redesigned to feature activities that encourage more complex reasoning and the generation of innovative ideas. Meanwhile, assessments could pivot towards open-ended, real-world problems that emphasize social and emotional skills, empathic skills, critical thinking, problem-solving and creativity – non-cognitive as well as higher-order skills that AI cannot easily replicate. Such changes could not only address academic integrity concerns but also amplify human strengths in the educational process.

12. Build teacher competencies for effective generative AI integration

Continuous professional development could help build teachers' understanding of generative AI and capabilities to integrate it effectively. Workshops and communities of practice that introduce emerging tools, prompt engineering and promising practices, while also promoting critical analysis of capabilities, limitations and ethics, can empower informed practice. This approach may help teachers meaningfully utilize generative AI to advance student learning and their own professional development.

13. Prioritize inclusiveness and bridge digital divides

Introducing generative AI must prioritize learning opportunities for all students, irrespective of disability, gender, socioeconomic status, culture or location. Recognizing that the level at which schools can implement generative AI is heavily dependent on the broader ecosystem, a multi-tier response is needed. This necessitates establishing sufficient connectivity and infrastructure, along with securing access to digital devices, as foundational prerequisites for ensuring equitable generative AI access in classrooms. With these foundational elements in place, the next critical step involves the careful design of integration approaches. Such integration approaches should proactively address risks of exclusion and bias and practices must prevent exacerbating digital divides. Assessments could pinpoint barriers faced by marginalized communities, to then address through advocacy and resource mobilization. Periodic impact evaluations may help ensure unintended reinforcement of inequalities is avoided. Beyond passive inclusion, active efforts to examine and harness the potential of generative AI to enhance personalized learning and empower children with disabilities are encouraged.

14. Implement monitoring mechanisms and support evidence-based research

Institutions/schools are advised to implement monitoring mechanisms to regularly assess the impacts, effectiveness, relevance and sustainability of generative AI for teaching and learning. Such mechanisms should focus on gathering data on key indicators like learning outcomes, student engagement, teacher adoption and unintended consequences, identifying issues early on. The findings can inform the continuous improvement of institutional policies on AI use, ensuring that practices enhance learning and equity as intended. Additionally, encouraging and supporting evidence-based research could allow a more comprehensive and critical understanding of generative AI's diverse applications in teaching and learning. This research should examine benefits and risks across different age groups and subjects, considering various socio-economic, socio-environmental, socio-political, and socio-cultural contexts. Additionally, it should address long-term implications, sustainability and emerging ethical concerns. The insights gained can then guide policymaking, strengthen teacher training, inform student competency-development strategies and intensify collaboration with industry and communities for private and public partnerships in education.

ANNEX II

Concept Note and Agenda

Background

To better enable UNESCO Member States to address the implications of generative AI in Education, as well as to mobilize various stakeholders to envision the futures of education in light of such rapidly emerging technologies, the UNESCO Regional Office in Bangkok (UNESCO Bangkok), in collaboration with The Southeast Asian Ministers of Education Organization (SEAMEO), are organizing the regional experts meeting, ***Empowering Minds*: A Round Table on Generative AI and Education in Asia-Pacific, 7-9 November 2023 in Bangkok, Thailand.** Round table discussions will explore the implications of generative AI for teacher training and their professional development, thus serving as an important platform to leverage opportunities and reduce risks of generative AI to education. The round table offers an opportunity to exchange ideas, experiences, and practices towards optimizing the use of generative AI to enhance teaching and learning for the present and the future in Asia Pacific Member States.

Since the term 'Artificial Intelligence (AI)' was first used in the mid-1950s to describe the 'science and engineering of making intelligent machines, especially intelligent computer programs' (McCarthy et al., 2006, p. 2), AI has seen significant advancements over the past seven decades, such as improvements in computing power and innovation in algorithmic techniques. This has had a profound impact on various aspects of our lives, including education and research (Lu et al., 2023; Rahman & Watanobe, 2023).

One specific type of AI is called 'generative', which refers to the use of AI to create new content, including audio, code, images, complex text, simulations, and videos. Generative AI has made significant

breakthroughs in recent years (UNESCO, 2023). For example, in November 2022, OpenAI launched its newly innovated generative AI platform, 'ChatGPT', which then spread virally across the globe to boast more than 100 million users. This ground-breaking generative AI application demonstrates AI's potential to bring radical changes to the education sector, considering its ability to digest a bulk of information swiftly, understand complex questions, and provide reasonable and 'human-like' answers to users (Zhu et al., 2023). Given these features, generative AI applications, such as ChatGPT, Anthropic Claude, Midjourney, and others provide new opportunities for both learners and educators, such as personalized and interactive responses to complex questions, increased accessibility to information, more informed lesson preparation, and various kinds of instructional support (Rahman & Watanobe, 2023).

Although generative AI applications continue innovating the education sector, significant ethical issues are arising. One critically important and urgent concern for schools and teachers is how to uphold academic integrity. ChatGPT, as well as competitors Claude, and others, can answer many complex questions, including traditional exam questions; thus, how a teacher can evaluate whether a student is producing authentic work has fast become a heated topic (Chaudhry et al., 2023).

Another urgent ethical concern is related to algorithmic biases and the reinforcing of systemic injustices, which may emerge from the design of artificial intelligence, namely due to its 'learning' with inconsistent or biased data, or a lack of ethical supervision (Filgueiras, 2023). In addition, other ethical considerations related to education governance include data privacy and cybersecurity, which call for national governments to implement relevant measures to properly address them (Filgueiras, 2023). Furthermore, the extensive usage of ChatGPT could reduce human interaction, and individuals could become dependent on the tool (UNESCO, 2023). Key decisions regarding digital technology applied to education and knowledge are based on a long-established foundation of education as a public good, so as to ensure equitable and inclusive access for all learners (UNESCO, 2021). Some policy approaches have developed in response to these challenges, such as banning the use of ChatGPT completely, or detecting AI-generated text using software tools, while their effectiveness has not been confirmed yet (UNESCO, 2023).

In summary, emerging generative AI technologies have already exercised a direct impact on teaching and learning. It is thus crucial to address implications for training of teachers in the effective and efficient use of AI; equally important is for educators to be equipped with the skills and capabilities to cultivate critical thinking and problem-solving skills in their students (Ali et al., 2023). Notably, a recent UNESCO global survey of 450 secondary schools and universities found that only 10 percent of schools currently have formal guidance in place on the use of AI in education and the school curriculum (UNESCO, 2023). Addressing these issues would help us enhance the potential use of generative AI in education to optimize learning, in the process reducing teachers' workloads and educating students with twenty-first-century skills so that they can better prepare for the future.

Global Context

At the global level, to envision transformations in the future of education and promptly address new challenges brought by AI, UNESCO has made significant contributions. For example, UNESCO has devised numerous guidelines for policy-makers and Member States, such as the publication, *Reimagining Our Futures Together: A New Social Contract for Education*, which suggests the current need to comprehensively evaluate the biases and blind spots of our digital research methods from a lens of justice and equity, that is, if we are to account for what lies beyond the purview of AI and its particular kind of programming. More specifically, UNESCO has drafted a Recommendation on the Ethics of Artificial Intelligence as well as the ChatGPT and Artificial Intelligence in Higher Education Quick Start Guide, to mobilize Member

States in devising a coordinated approach to handling the education challenges—as well as embrace the opportunities—brought on by generative AI and the ever-growing number of 'chat' applications available to learners and teachers.

In addition, UNESCO organized, in cooperation with China, the first International Conference on AI and Education, in Beijing, in 2019, and adopted the *Beijing Consensus on Artificial Intelligence and Education*. Shortly thereafter, and in keeping with its UN mandate to catalyze important synergies across Member States, UNESCO went on to organize the second International Forum on AI and Education in December 2020, as well as the third International Forum on AI and Education in December 2021. Currently, UNESCO is developing frameworks of AI competences for students and teachers, which are expected to be released during Digital Learning Week in September 2023.

In response to the continued, rapid development of innovative and powerful generative AI tools, UNESCO convened the First Global Meeting of Ministers of Education, of May 2023, to discuss opportunities, challenges, and risks of generative AI in education. More than 40 regional government ministers participated to share policy approaches on how to integrate generative AI tools in education. During the meeting, challenges similar to those mentioned above emerged from the meeting, including how to integrate generative AI into curricula, how to reduce the likelihood of producing biased information, and how to deal with the current lack of appropriate policy regulations. In addition, UNESCO presented a 'roadmap' on education and generative AI. The roadmap included plans for open multistakeholder dialogue to foster collaboration and effective implementation of AI in education.

Asia-Pacific Context

In line with UNESCO's global guidelines, at the regional level, many Asia- Pacific Member States have enacted educational policies regarding generative AI applications. For instance, the Singapore Ministry of Education highlights that ChatGPT and similar tools can be useful to complement students' more traditional modes of learning, but students should not use ChatGPT exclusively due to the possibility of generating inaccurate or biased responses (Athena Information Solutions, 2023). Furthermore, many countries such as Thailand and Malaysia have already developed regulations on the ethics of AI. That being the case, there remains very limited guidance that targets the challenge of how to effectively enhance professional development, and how to empower teachers in utilizing generative AI while innovating their teaching skills.

Objectives

The overarching purpose of this Experts Round Table is to inform and guide the transformation of education systems in the Asia-Pacific region by 1) Exploring implications for responsible and ethical integration of generative AI in teaching and learning, with a focus on ChatGPT and other emerging technologies; 2) Enhancing the capacities of educators to utilize AI competencies in teaching and learning at the school level, optimizing potential benefits and minimizing risks. By fostering dialogue, knowledge exchange, and collaboration among diverse stakeholders, the Experts Round Table aims to facilitate the responsible and equitable adoption of AI-driven teaching and learning in the region.

The specific objectives of the round table are as follows:

- ***Enhance*** capacity for generative AI integration in education: Participants at the Experts Round Table will be provided: resources prior to the meeting; opportunities to participate in a learning lab on ChatGPT and its implications for teaching and learning; and an opportunity to exchange potential solutions, practices and ideas with generative AI specialists and practitioners.

- ***Enable*** inclusive and equitable access to AI-driven education: Identify strategies and approaches for ensuring that all learners, regardless of their socioeconomic status, gender, or location, have equal access to the benefits of generative AI in education.
- ***Empower*** educators and learners with useful skills and competences to use generative AI in their pedagogical and learning practices.
- ***Foster*** a hub of continuous learning via open dialogue and knowledge exchange: Enable dialogue, learning, and collaboration among stakeholders in the Asia-Pacific region, to better understand the challenges, potential benefits, and risks associated with the responsible and inclusive use of generative AI in education.

Expected Outputs

The expected outputs from the Experts Round Table include:

- An outcome document with recommendations for responsible, inclusive and equitable implementation of AI in teaching and learning, guiding Member States to prepare AI-driven educational action plans and strategies that optimize benefits and mitigate risks.
- Strategies to enhance educators' and learners' capabilities to effectively incorporate generative AI in their pedagogy and learning, respectively.
- Raised and informed awareness on how generative AI platforms can reinforce curriculums, teacher preparedness, pedagogy, and assessments to enhance learning. Knowledge exchange and learning networks established within the Asia-Pacific region regarding generative AI in the education sector.

Organization

Organized by the Educational Innovations and Skills Development (EISD) Section, Social and Human Sciences (SHS) and Communication and Information (CI) sections at UNESCO Regional Office in Bangkok, in collaboration with The Southeast Asian Ministers of Education Organization (SEAMEO).

Meeting Proceedings

The three-day meeting proceedings will begin with a Learning Lab on Generative AI on the first day as an introductory hands-on experience to workshop participants before delving into the two-day Round Table Experts Meeting on 8-9 November 2023.

Pre-meeting (7 November 2023):

Learning Lab on Generative AI, using ChatGPT as an example for educators and learners.

During the Round Table Experts Meeting (8-9 November 2023):

- Stock-taking of state-of-the-art policy and practices pertaining to use of generative AI in education, and identification of tools and resources available to teachers and students.
- Opportunities and benefits of generative AI in education, such as in personalized learning, teacher preparations, AI-driven assessment, and beyond.
- Challenges, risks and ethical considerations of generative AI in education, such as data privacy and governance, and algorithmic bias.
- Policy recommendations and future directions for responsible generative AI adoption in education, specifically in teaching and learning in school settings.

Participants

The Learning Lab and Round Table will bring together leading researchers, policy-makers, practitioners, educators, youth, university administrators and researchers, tech companies and diverse stakeholders to discuss the emergent trends of generative AI and education technology advancements in the Asia-Pacific region.

All registered participants are invited to the all-day Learning Lab on 7 November 2023 followed by the two-day Regional Experts Round Table, 8-9 November 2023.

Exhibition

Join us for an Exhibition on Generative AI and Teaching and Learning, brought to meeting participants by UNESCO in collaboration with SEAMEO. This is an opportunity to delve deep into the nexus of AI and education, fostering insightful discussions and knowledge sharing.

We cordially invite all participants to share invaluable resources—publications, policy & strategy documents, toolkits, or audio-visual materials, shedding light on AI's role and impact on education, dovetailing with the themes to be discussed at the Experts Meeting. Your contributions will not only enhance the exhibition and enrich dialogues but also drive forward the narrative on responsible and innovative AI adoption in education.

To share your materials and be a part of this collaborative endeavor, please reach out to Ms Danting Cai UNESCO at learning.future@unesco.org by15 October 2023.

Time, Venue, and Working Language

Time: 7-9 November 2023
Venue: Hybrid with in-person meetings in Bangkok, Thailand
Working Language: English

Additional Readings/References

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Contacts

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Provisional Agenda
Empowering Minds:
A Round Table on Generative AI and Education in Asia-Pacific

Date: 7 Nov 2023
Venue: Bangkok, Thailand

PRE-MEETING LEARNING LAB: 7 November 2023		
9:00-9:30	**Registration**	Foyer of Dejavu, 2nd Floor
9:30-10:00	**Session One: Introduction to Generative AI** ▸ Welcome and Overview • Ms Faryal Khan, Programme Specialist, EISD, UNESCO Bangkok (3') ▸ What is Generative AI? Examples? Understanding the genre (models for languages/images/audio-visuals, etc.) • Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank ▸ Applications and Impact on Education • Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank	Dejavu, 2nd Floor
10:00-11:00	**Session Two: Youth Debate** **Session Lead:** Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank with Ms Ling Tan, Education Officer, EISD, UNESCO Bangkok **Introduction** • Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank (5') **"The Role of Generative AI in Learning: Empowering or Hindering Teaching and Learning?" (40')** **Youth's perspective** **Group 1** Mr Jiaxuan Dai, Ms Souphalath Inthasone, Ms Vedanti Pawar **Group 2** Ms Warisa Kongsantinart, Mr Supawit Phimonjit, Mr Jomchai Chongthanakorn **Teachers' perspective (5')** • Dr Alongkorn (AL) Parivudhiphongs, Assistant Professor, Chulalongkorn University **Discussion and Q&A (10')**	Dejavu
11:00-11:15	***Coffee Break***	Dejavu
11:15-11:45	**Session Three: Features and Benefits of Generative AI** **Session Lead:** Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank with Mr Joe Hironaka, Adviser for Communication and Information, UNESCO Bangkok ▸ Exploring Key Features ▸ Benefits for Educators and Students ▸ Case Studies and Real-world Applications	Dejavu

PRE-MEETING LEARNING LAB: 7 November 2023		
11:45-12:30	**Session Four: Ethical Usage of Generative AI** **Session Lead:** Mr Phinith Chanthalangsy, Regional Advisor, Social and Human Sciences, UNESCO Bangkok ▸ Ethical Considerations and Guidelines ▸ Responsible Integration in the Classroom ▸ Discussion and Q&A	Dejavu
12:30-13:30	***Lunch Break***	Cuisine Restaurant Ground Floor
13:30-14:45	**Session Five: Hands-on Workshop - ChatGPT in Course Design** **Session Lead:** Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank ▸ Practical Demonstration ▸ Participants' Hands-on Practice ▸ Feedback and Insights	Dejavu
14:45-16:30	**Session Six: Generative AI in Specialized Educational Fields and the Future of AI in Education** **Session Lead:** Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank ▸ Enhancing Interaction and Engagement ▸ Collaborative activities ▸ The Future Landscape of AI in Education • Dr Ethel Agnes P Valenzuela, Adviser, ASEAN Secretariat (10') (Online) ▸ Directions of the future of Generative AI • Mr Benjamin Vergel De Dios, Programme Specialist, EISD, UNESCO Bangkok (5') ▸ Reflections and Takeaways • Dr Tianchong Wang, Chief Rapporteur and Consultant, EISD, UNESCO Bangkok (10') ▸ Q&A **Closing Remarks and Acknowledgements** • Mr John Arnold Siena Deputy Director, SEAMEO Secretariat (5')	Dejavu
16:30-17:00	***Coffee and Networking***	Dejavu

Date: 8-9 Nov 2023
Venue: Bangkok, Thailand
Online meeting link: https://unesco-org.zoom.us/j/82701558956 (8-9 Nov Plenary)

DAY ONE: ROUND TABLE EXPERTS MEETING (8 November 2023)		
09:30-10:00	**Registration**	Foyer of Dejavu, 2nd Floor
10:00-10:25	**Opening Session** ▸ Welcome remarks by Ms Soohyun Kim, Director, UNESCO Regional Office Bangkok ▸ (Video Message) ▸ Welcome remarks by Datuk Dr Habibah Abdul Rahim, Director, SEAMEO Secretariat ▸ (Video Message) ▸ Opening remarks by Mr Libing Wang, Chief of EISD, UNESCO Bangkok **Presentation of the agenda** • Ms Faryal Khan, Programme Specialist, EISD, UNESCO Bangkok	Dejavu
10:25-10:30	***Photo Session***	Dejavu
10:30-11:00	**Keynote Address** **Introduction of the current state of generative AI and implications for education in the Asia-Pacific region** • Ms Faryal Khan, Programme Specialist, EISD, UNESCO Bangkok	Dejavu
11:00-11:15	***Coffee Break***	Dejavu
11:15-13:15	**Round Table Discussion One** **Potential solutions and good practices on how generative AI is integrated in teaching and learning** **Moderator:** Mr John Arnold Siena, Deputy Director, SEAMEO Secretariat **Video Message:** "Practical Implications of AI for Teaching and Learning", Dr Kristen DiCerbo, Chief Learning Officer, Khan Academy (5') ▸ "Research and Practice of Generative AI for Education" • Dr Yu Lu, Director of Artificial Intelligence Lab, Beijing Normal University ▸ "Who let the brain out? Generative AI and its potential in nurturing learner empathy, prosocial values and environmental stewardship" • Dr Kenneth Y T Lim, Senior Education Research Scientist, National Institute of Education, Singapore ▸ "Empowering Students as Community-Centered App Inventors within the UNESCO AI Competency Framework for Students" • Dr Natalie Lao, Executive Director, App Inventor Foundation ▸ "Connecting Policy with Reality in AI for Education" • Mrs Bethanie Drake-Maples, Founder, Atypical AI, Fellow, Stanford Institute for Human Centered Artificial Intelligence ▸ Youth Perspectives (Regional): Mr Jiaxuan Dai (3') **Round Table Discussion** (3' for each contribution) **Concluding Remarks by Panelists** (10')	Dejavu

DAY ONE: ROUND TABLE EXPERTS MEETING (8 November 2023)		
13:15-14:15	***Lunch Break***	Cuisine Restaurant Ground Floor
14:15-16:30	**Round Table Discussion Two** **Benefits and Risks for generative AI and education** **Moderator:** Mr Joe Hironaka, Adviser for Communication and Information, UNESCO Bangkok**,** UNESCO Bangkok **Introductory presentation** by Ms Anna Goldie, Senior Staff Research Scientist at Google DeepMind, PhD Candidate in the Stanford NLP Group (7') (Online) ▸ "Ethical Perspective: The Benefits and Challenges of AI in Education" • Ms Meyda Noor Thertia Nento, Associate Project Officer, Social and Human Science, UNESCO Jakarta ▸ "Generative AI – Benefits, Opportunities and Challenges" • Mr Amit Pawar, Director of Worldwide Education-Modern Work and Security, Microsoft ▸ "Students' Learning and assessments: Challenges and opportunities with generative AI in education" • Dr Hannele Niemi, Professor, University of Helsinki ▸ "Key Highlights from the Report on the Ethics of AI in Learner-Centric Education" • Dr Shitanshu Mishra, National Information Technology Officer, UNESCO Mahatma Gandhi Institute of Education for Peace and Sustainable Development (MGIEP) ▸ "Generative AI in Schools: Designing Guidelines that Are Right for Your School" • Ms Angela Kim, Chief Education Officer, Women in AI (Online) ▸ Youth Perspectives (Thailand): Ms Warisa Kongsantinart (3') **Round Table Discussion** (3' for each contribution) **Concluding Remarks by Panelists** (10')	Dejavu
16:30-17:30	**Reflections and wrap up of Day 1**	Dejavu
18:00-19:30	**Welcome reception**	Glen Bar, Ground Floor
19:30-20:30	**Working meeting of core group to discuss outcomes**	Dejavu

DAY TWO: ROUND TABLE EXPERTS MEETING (9 November 2023)		
9:30- 10:00	**Recap of Day One by chief rapporteur** • Dr Tianchong Wang, Chief Rapporteur and Consultant, EISD, UNESCO Bangkok (5') **Findings of Survey** • Presenters: Dr Kaushal Kumar Bhagat, Assistant Professor, Indian Institute of Technology Kharagpur with Dr Ahmed Tlili, Associate Professor, Beijing Normal University (15')	Dejavu, 2nd Floor
10.00-10.25	**Presentation and Q&A** ▸ "Policy considerations on Generative AI for teaching and learning" • Mr Cristobal Cobo, Senior Education and Technology Specialist, Education Global Practice, World Bank (25')	

DAY TWO: ROUND TABLE EXPERTS MEETING (9 November 2023)		
10:25-12:00	**Breakout session One** **Moderator:** Ms Faryal Khan, Programme Specialist, EISD, UNESCO Bangkok **Empowering educators and learners with skills and competency to integrate generative AI in teaching and learning** • Key presentation on this topic by Dr Tianchong Wang, Chief Rapporteur and Consultant, EISD, UNESCO Bangkok and preparation for breakout groups (15') **Breakout group work 10.40 – 12.00 (80')** **Group A: Skills for Educator's Effective AI Integration** • Led by Dr Vaikunthan Rajaratnam, Adjunct Professor of Innovative Digital Learning, Asia Pacific University of Technology and Innovation **Group B: Literacy for Student Ethical and Responsible Generative AI Use** • Led by Dr Sherlyne Acosta, Senior Educational Research and Development Specialist, SEAMEO INNOTECH **Group C: Empowering Educators** • Led by Ms Danting Cai, Education Officer, UNESCO Bangkok **Group D: Empowering Learners** • Led by Ms Abigail Lanceta, Programme Officer, SEAMEO SEPS	Dejavu Dejavu, 2nd Floor Delta, 2nd Floor
12:00-12:30	**Report back to plenary** **Moderator:** Dr Antonia Mandry, Education Specialist, UNICEF East Asia and Pacific Regional Office	Dejavu
12:30-13:30	***Lunch Break & Drafting of outcome report***	Cuisine Restaurant Ground Floor
13:30-14:45	**Round Table Discussion Three** **Policy recommendations and future directions for inclusive and equitable access to AI in education** **Presenter/Moderator:** Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank ▸ "Education Sector" in Thailand AI Strategy and Action Plan (2022-2027)" • Dr Songphon Munkongsujarit, Director of Strategic, Monitoring and Evaluation Division, National Science and Technology Development Agency of Thailand ▸ "Policy Recommendations from Singapore's perspectives" • Mr Wong Teck Kiong, Senior Specialist, Technologies for Learning Branch, Ministry of Education of Singapore ▸ "Policy Priorities from OECD" • Ms Anna Pons, OECD, Project Lead OECD Global Teaching InSights and the Schools+ Network ▸ "Continuous review and adaptation of policies" • Dr Sherlyne Acosta, Senior Educational Research and Development Specialist, SEAMEO INNOTECH ▸ Youth Perspectives (Regional): Ms Vedanti Pawar with Ms Souphalath Inthasone (3') **Round Table Discussion** (3' for each contribution) **Concluding Remarks by Panelists** (10')	Dejavu

DAY TWO: ROUND TABLE EXPERTS MEETING (9 November 2023)		
14:45-15:45	**Breakout session Two** **Recommendations to ensure inclusive and equitable access to AI to enhance teaching and learning** ▸ Introduction by Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank (5') ▸ Preparations for breakout groups (10') ▸ Breakout group work 14.45 – 15.30 (45') **Group A: Recommendations at the policy level** • Led by Mr Vikas Kanungo, Senior Digital Development Consultant, The World Bank **Group B: Recommendations for teacher training** • Led by Ms Ling Tan, Education Officer, EISD, UNESCO Bangkok **Group C: Recommendations for pedagogy and assessments** • Led by Dr Orawan Sriboonruang, STEM Education Specialist, SEAMEO STEM-ED **Group D: Ethical and Responsible use of Generative AI for Teaching and Learning** • Led by Ms Meyda Nento, Social and Human Sciences, UNESCO Jakarta **Group E: Recommendation for areas for research and networks for knowledge exchange** • Led by Dr Tipajin Thaipisutikul, Expert in Generative AI and ChatGPT, Mahidol University	Dejavu, 2nd Floor Delta, 2nd Floor
15:45-16:00	***Coffee break***	Dejavu
16:00-16:30	**Report back to plenary** **Moderator:** Dr Natalie Lao, Executive Director, App Inventor Foundation	Dejavu
16:30-17:00	**Closing remarks and presentation of the draft outcome document** • Ms Faryal Khan, Programme Specialist, EISD, UNESCO Bangkok • Dr Tianchong Wang, Chief Rapporteur and Consultant, EISD, UNESCO Bangkok	Dejavu

ANNEX III
List of Participants

In-Person Participants

No.	Prefix	First Name	Last Name	Position/Designation	Organization
1	Mr	Jiaxuan	Dai	Student	Keystone Academy, Beijing China
2	Prof	Yu	Lu	Director of Artificial Intelligence Lab	Beijing Normal University, China
3	Mr	Vikas	Kanungo	Senior Consultant	The World Bank
4	Dr	Natalie	Lao	Executive Director	App Inventor Foundation
5	Dr	Tianchong	Wang	Chief Rapporteur and Consultant	UNESCO Bangkok
6	Miss	Souphalath	Inthasone	Student	National University of Laos
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4 QUALITY EDUCATION

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