About the committee:

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) was established in 1945 after the two World Wars to achieve the "intellectual and moral solidarity of mankind." The organization seeks to fulfill this goal by developing educational tools, promoting cultural heritage, fostering equal dignity amongst cultures, addressing social and ethical challenges, and mobilizing scientific programs and policies. UNESCO promotes peace and international cooperation, using the UN's Sustainable Development Goals (SDGs) as a framework for its projects. To successfully achieve its aims, UNESCO relies on the cooperation and participation of its member states, as well as the support of other UN agencies.

Mandate:

Its goal is to promote international collaboration in education, culture, science, and communication. The United Nations Educational, Scientific, and Cultural Organisation (UNESCO) is a specialized organization within the United Nations system. UNESCO, which was established on November 16, 1945, in the wake of World War II, strives to contribute to global peace and security by fostering cross-national interchange of information, concepts, and cultural expressions.

• **Education for All:** UNESCO is dedicated to ensuring that all people have access to high-quality education, irrespective of their gender, ethnicity, socioeconomic status, or geographic location. It aims to ensure that education is open to all, current, and adaptable to changing societal requirements.

• **Preservation of Cultural Heritage:** To preserve humanity's various expressions of creativity and identity, UNESCO is committed to preserving cultural heritage, both tangible and intangible. This covers safeguarding cultural practices, languages, historical locations, and aesthetic expressions.

• **Scientific Collaboration:** International scientific cooperation is encouraged by UNESCO to tackle global issues, increase knowledge, and create innovation for sustainable development. It promotes international exchange of scientific knowledge and technological innovations.

• **Media Literacy and Freedom of Expression:** In recognition of the crucial role that independent, free media play in promoting informed societies and democratic governance, UNESCO promotes media literacy and supports freedom of expression.

• **Promotion of Intercultural Communication:** To foster greater respect, tolerance, and cooperation between many cultures and civilizations, UNESCO supports intercultural communication. This helps to avert conflicts and advance peace.

• **Equal Access to Information:** UNESCO strives to ensure equal access to information and knowledge resources, including access to digital technologies, to bridge knowledge gaps and promote lifelong learning.

• **Ethical Dimensions of Science and Technology:** UNESCO addresses the ethical implications of scientific and technological advancements, promoting responsible practices that align with human rights, social justice, and environmental sustainability. UNESCO plays a crucial role in supporting the United Nations' Sustainable Development Goals (SDGs), particularly Goal 4 (Quality Education), Goal 9 (Industry, Innovation, and Infrastructure), Goal 10 (Reduced Inequalities), Goal 11 (Sustainable Cities and Communities), and Goal 16 (Peace, Justice, and Strong Institutions).

Functions:
UNESCO implements its activities through the five program areas: education, natural sciences, social and human sciences, culture, and communication and information. UNESCO coordinates with civil society through its 199 National Commissions, which are agencies established by the governments of UNESCO Member States and Associated Members. Such partnerships not only allow UNESCO to fulfill its mandate and achieve its objectives but also help to increase cooperation in the fields of education, science, culture, communication, and information.

The organization maintains direct partnerships with 370 international NGOs and twenty civil society organizations (CSOs), and formal agreements with 87 IGOs and several institutions in the private sector. UNESCO plays a key role in the protection of cultures as well as the promotion of education and improved learning practices, through the inclusion of modern technologies to better enhance cultural protection and education.

Global Education Monitoring Report
The Global Education Monitoring Report (GEM Report) is an annual report that provides an update on progress towards Sustainable Development Goal (SDG) 4, which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. The GEM Report is produced by the UNESCO Institute for Statistics and is the official monitoring report for SDG 4.

The GEM Report 2023, titled "Technology in education: A tool on whose terms?", examines the use of technology in education around the world through the lenses of relevance, equity, scalability, and sustainability. The report argues that education systems should always ensure that learners' interests are placed at the center and that digital technologies are used to support an education based on human interaction rather than aiming at substituting it.

The report finds that the use of technology in education has the potential to improve access, quality, and equity in education. However, the report also warns that the use of technology can also widen existing inequalities if not used carefully. The report calls for a more equitable and sustainable approach to the use of technology in education, one that puts learners at the center and ensures that all learners have access to the resources they need to succeed.

The GEM Report is an important tool for tracking progress towards SDG 4 and for identifying the challenges that need to be addressed. The report is also a valuable resource for policymakers, educators, and other stakeholders who are working to improve education for all.

However, the use of technology can also widen existing inequalities if not used carefully. For example, students from wealthy families are more likely to have access to high-quality technology than students from poor families. The use of technology can also be disruptive to traditional teaching methods and can lead to increased stress and anxiety among students. The GEM Report calls for a more equitable and sustainable approach to the use of technology in education.

The report recommends that countries:
- Develop national policies and strategies for the use of technology in education that are aligned with SDG 4.
- Invest in infrastructure and resources to ensure that all learners have access to quality technology.
- Train teachers on how to use technology effectively in the classroom.
- Monitor the impact of technology on learning and equity.

Reimagining Education: Towards a New Social Contract for Education
UNESCO has been at the forefront of thinking about the future of education that will be needed in the 21st century. Reimagining our future together: A New Social Contract for Education is the third in a series of UNESCO-led once-a-generation foresight and visioning exercises, conducted at key moments of historical transition.

In its 2021 report, UNESCO highlighted the following key trends that are shaping the evolving educational landscape:

The rise of artificial intelligence and automation: These technologies are transforming the way we work, learn, and live. As a result, there is a growing demand for workers with skills in areas such as data science, artificial intelligence, and robotics.

The climate crisis: The climate crisis is one of the most pressing challenges facing humanity today. It is also having a major impact on the world of work, as many jobs are being lost due to environmental factors. As a result, there is a growing demand for workers with skills in areas such as renewable energy, climate adaptation, and environmental protection.

The digital transformation: The digital transformation is also having a major impact on the world of work. As more and more businesses move online, there is a growing demand for workers with skills in areas such as web development, digital marketing, and social media.

The changing demographics: The global population is aging, and there is a growing demand for workers with skills in areas such as eldercare, healthcare, and social services. The global population is projected to reach a peak at around 10.4 billion people during the 2080s, nearly double the global population of 1990 (5.3 billion).

The increasing importance of lifelong learning: In the 21st century, the pace of technological change is so rapid that it is no longer possible to learn everything we need to know in school. As a result, there is a growing demand for lifelong learning opportunities.

Introduction to AI

Artificial intelligence, according to a 1955 definition by John McCarthy, is "the science and engineering of making intelligent machines," but it has gone beyond that in today's technology. AI ranges from computerized chess games to attentive surveillance cameras. In 1935, Alan Turing described a machine with limitless memory and an interior scanner that read symbols, which are instructions, to guide computer functions. This became an outline for all future computers. Turing continued to teach about computer intelligence in the 1940s, saying "What we want is a machine that can learn from experience".

In 1950, the Turing test helped determine what is considered intelligent in the electronic world. In this test, an interrogator asks questions to a computer and a human via digital messaging. The interrogator is trying to discover who the computer is. The computer's goal is to trick the integrator, and the human's goal is to help the integrator. If the integrator is unable to distinguish, the computer is intelligent.

John McCarthy, a Stanford Professor, helped found the Dartmouth Summer Research Project on Artificial Intelligence. This took approximately six weeks and initiated practices such as symbolic methods and systems focused on limited domains. Since this project was so foundational, Dartmouth College founded the field of AI research in 1956. In 1973, James Lighthill released the Lighthill Report. Commissioned by the UK Science Research Council, this report heavily denounced AI research, because "in no part of the field have the discoveries made so far produced the major impact that was then promised".

This spurred an "AI winter". During this period (1974-1980), funding for automation from the American and British governments ceased. Funding returned between 1980- 1987 when businesses invested billions of dollars into AI to solve problems that require human expertise (i.e. identifying chemical compounds).

Since these programs were expensive and difficult to maintain, another AI winter manifested from 1987 – 1993. After that, there was an explosive growth. 1997, specifically, was monumental, because a chess-playing AI program beat the grand champion Gary Kasparov in a game of chess. This demonstrated what AI could do.

Types of AI

There are three different classifications of artificial intelligence: Artificial Narrow Intelligence (ANI), Artificial General Intelligence (AGI), and Artificial Super Intelligence (ASI). ANI is the simplest type since it has a forte in a single area. For example, Siri can only do functions within a phone. Next, AGI refers to human-like intelligence within a machine. An example of this would be a customer service chat box directing others as a general human would. Lastly, ASI refers to machines that surpass human capabilities in multiple or all fields. For example, the Mayo

Clinic's AI rapidly creates better treatment ideas for cardiovascular issues like weak heart pumps and strokes.

Human rights concerns
Some countries, notably China, have embraced AI as a tool for extensive surveillance, employing social scoring systems that adjust based on individuals' behavior. This has raised concerns among human rights advocates and the UN, which has warned about the risks of excessive governmental surveillance and the need for safeguards to protect human rights in the face of AI advancements.

During the COVID-19 pandemic, AI has played a dual role. Ethically, it has assisted researchers in analyzing the virus and developing more effective responses. However, some countries have utilized AI in ways that encroach upon privacy and civil liberties. For instance, in South Korea, AI was deployed to monitor compliance with self-isolation orders, while in China, citizens were compelled to use phone applications for tracking symptoms and movements, with consequences like being denied access to public transit or trains.

While defenders argue that such measures can help curb the pandemic, critics highlight the potential erosion of individual freedoms. Moreover, flexible data protection policies in many countries and corporations have made data gathered by AI vulnerable to exploitation by criminals.

Another concerning aspect is the role of AI in spreading misinformation about the pandemic and vaccines on social media platforms. AI-powered bots can rapidly disseminate false information, undermining public trust and contributing to reduced vaccination rates in some regions. This issue isn't new; even before the pandemic, bots linked to the Russian government spread vaccine misinformation on platforms like Twitter, sowing doubt in Western nations.

Scientific Advancements with AI
The fight against climate change has found valuable allies in automated tools, such as Microsoft's AI for Earth program. This initiative provides scientists with crucial geological data sourced from organizations like NASA and Chinese Meteorologists, empowering them to develop innovative solutions for monitoring and managing Earth's natural systems. Platforms like "This Climate Does Not Exist" utilize AI imaging to visualize potential future scenarios of climate change impacts on renowned tourist sites, aiding policymakers in advocating for climate action.

Moreover, AI plays a significant role in scientific research, particularly in biology and medicine. In biology, AI assists in analyzing protein structures and genetic sequences, contributing to the discovery of cures for rare diseases and improving existing treatments. In medicine, AI aids doctors in analyzing medical imaging, enhancing diagnostic accuracy, and potentially saving lives. However, the widespread adoption of AI remains concentrated in economically advanced countries, highlighting global disparities in technological access and utilization.

On the flip side, AI also presents ethical concerns in scientific research. Recent studies have shown that AI systems developed for pharmaceutical research could potentially be exploited to develop biological and chemical weapons rapidly. This dual-use nature of AI poses significant risks, as it can lead to the creation of dangerous weapons targeting specific traits or individuals. Despite its positive contributions to scientific advancements, the misuse of AI underscores the need for careful regulation and ethical considerations in its development and application.

Examples of AI Applications in Education

AI is already making significant strides in revolutionizing education worldwide. One key application is personalized learning, where AI algorithms analyze students' strengths and weaknesses to tailor learning experiences accordingly. For example, adaptive learning platforms can adjust the difficulty level of assignments or recommend personalized study materials based on individual progress.

Additionally, AI-powered tutoring systems provide students with real-time feedback and assistance, mimicking the support of a human tutor. These systems can answer questions, explain concepts, and offer customized study plans to help students grasp challenging topics more effectively.

AI is enhancing administrative tasks for educators, such as grading assignments and managing student data. AI algorithms can automate these processes, freeing up valuable time for teachers to focus on more meaningful interactions with students.

AI-driven educational content creation tools are enabling educators to develop engaging and interactive learning materials. These tools can generate quizzes, simulations, and multimedia presentations tailored to specific learning objectives, enhancing student engagement and comprehension.

Overall, AI is transforming education by personalizing learning experiences, providing real-time support, streamlining administrative tasks, and facilitating the creation of dynamic educational content. As AI continues to advance, its impact on education is expected to grow, unlocking new opportunities for learning and development.

Increased Online Access, Mobile Devices and Connectivity
Societal shifts driven by technology are reshaping education, impacting teaching methods, infrastructure, and learner experiences. Greater access to multimedia content, online courses, mobile devices, social networking, and digital games presents opportunities for personalized learning. However, many educational institutions are lagging, failing to adapt to this digital renaissance.

While some schools invest in infrastructure like wireless networks, there's a disconnect between technological advancements and educational practices. This gap threatens to make schools irrelevant to students' lives. To bridge this divide, schools must transform into connected

learning communities, embracing social media tools to unlock student creativity. Despite the abundance of technology tools available, many schools struggle to keep pace, widening the digital divide based on the quality of educational technology.

Interactive Whiteboards (IWBs)

Considered by many to be a standard in schools nowadays, the IWB is a presentation device connected to a computer and projector. It is typically mounted to a wall, but can also be configured to a rolling stand. A projector displays the computer's image in the IWB, and users can control the image using finger or interactive marker devices designed by the manufacturer.

Tablets

Tablets have exploded into the marketplace and have begun to be integrated into schools. These devices are more portable than laptops, and they are smaller and cheaper, which makes them very attractive centerpieces for 1:1 initiatives that is, where every student has a device. Recent advances in digital publishing have resulted in many traditional textbooks now being available on tablet devices for a fraction of the cost. Apple has dominated the tablet market with its iPad, which launched in 2012. As of 2013, the Apple App Store supports over 700,000 apps for the iPad. For example, students and educators can access iTunes U for free and access entire courses of educational content for K-12 schools.

Document Cameras

These devices work very similarly to their ancestor, the overhead projector. Document cameras are connected to a projector to display the image of anything put underneath the camera, which is the main function of an overhead projector. What makes these devices more dynamic is their ability to record both video and sound, a useful feature that allows teachers to capture lessons and notes to make available to their students through a website. They are cost-effective, small, and portable. Some models even use wireless technology, so they don't have to be hardwired to a projector.

Cloud Computing

This term refers to any hosted service that can be accessed over the Internet. Many schools are now investing in virtual servers, which are much more cost-effective than traditional ones. For schools and administrators, the "cloud" has become a more effective and efficient way of managing documents, projects, and general information, as they can all be stored virtually and accessed anywhere. This has resulted in the adoption of Google's suite of free tools by many schools and educators alike. As cost-effective and enticing as cloud computing is, many schools fear losing control of private student information.

Mobile Technology

Mobile technology (i.e., mobile phones, tablets, e-readers) has exploded into the marketplace and homes. This trend has not gone unnoticed in the education world. Schools and leaders are beginning to see the value in purchasing mobile technology for 1:1 initiatives, while others are opting for more cost-effective programs that utilize the technology that students already own.

These latter initiatives are commonly referred to as either Bring Your Own Device (BYOD) or Bring Your Own Technology (BYOT) programs.

Video Conferencing
As the Internet has evolved, so has video-conferencing technology. Long past are the days when this tool was only available to schools in affluent areas or through sparse grants. All one now needs is a webcam-enabled device (i.e., desktop, laptop, tablet, or smartphone), an Internet connection, and either a program or app (e.g., Skype, iChat, Adobe Connect, Google Hangouts) to create a video feed. Schools now have the means to conduct virtual field trips, connect with authors, and collaborate with colleagues from across the globe.

OpenCourseWare (OCW) and Massive Open Online Courses (MOOCs). One of the major recent advancements in educational technology has been the availability of entire courses from some of the nation's most prestigious universities and professors free of charge. The movement began with the Massachusetts Institute of Technology (MIT), which believed that making OCW available would enhance human learning worldwide through the availability of a web of knowledge (Vest, 2004).

The role of the UNESCO and UN
UNESCO and the UN play crucial roles in addressing the agenda of AI in education through various initiatives and actions. They have emphasized the importance of leveraging AI to enhance educational opportunities globally. For instance, UNESCO has advocated for inclusive and equitable access to AI-driven educational tools and resources, particularly in underserved communities.

Moreover, both organizations have facilitated discussions and collaborations among member states, experts, and stakeholders to develop guidelines and frameworks for the ethical and responsible use of AI in education. This includes promoting transparency, accountability, and data privacy in AI-driven educational systems.

Additionally, the UN and UNESCO have supported research and pilot projects aimed at exploring the potential of AI to improve learning outcomes and address educational challenges. They have also encouraged partnerships with technology companies, educational institutions, and civil society organizations to foster innovation and knowledge-sharing in the field of AI in education.

UNESCO has framed guidelines for ICT in education policies and masterplans, providing a framework for integrating AI technologies into educational systems worldwide. Additionally, UNESCO has regulated education and blockchain, exploring innovative ways to utilize blockchain technology to enhance educational processes and credentials.

UNESCO has developed K-12 AI curricula, mapping government-endorsed AI curricula to ensure that students are equipped with the necessary knowledge and skills for the AI-driven

future. These efforts align with the UN's forward-thinking culture and commitment to cutting-edge skills, as highlighted in the UN 2.0 resolution released in September 2023.

While concrete resolutions may not have been passed specifically on AI in education, UNESCO and the UN have demonstrated a steadfast commitment to advancing this agenda through advocacy, research, and collaboration efforts. Their ongoing initiatives contribute to shaping a future where AI enhances educational opportunities and fosters better impacts within the United Nations system.

Implementation of AI
Several countries have taken bold measures to implement AI in education and address related challenges:

China: China has integrated AI into its education system extensively, with initiatives like AI-powered tutoring platforms and smart classrooms. The government encourages the use of AI to personalize learning experiences and improve teaching efficiency.

Finland: Finland has adopted a holistic approach to AI in education, focusing on teacher training and curriculum development. The country emphasizes the ethical and responsible use of AI while promoting collaboration between educators and technology developers.

United States: In the US, AI is being utilized in various educational settings, including adaptive learning platforms, AI-driven content creation tools, and virtual tutoring systems. Some states have implemented AI curricula in K-12 schools to prepare students for future AI-driven careers.

United Arab Emirates (UAE): The UAE has launched initiatives like the National AI Strategy and AI in Education Policy to integrate AI into its education system. The government promotes AI-driven personalized learning and invests in AI research and development in educational institutions.

United Kingdom: The UK has invested in AI research and development in education, particularly focusing on AI-driven assessment tools and data analytics to support teaching and learning. The government also supports initiatives to upskill educators in AI technology.

These examples highlight the diverse approaches taken by countries worldwide to incorporate AI into education and leverage its potential to enhance learning outcomes. However, challenges such as providing equitable access to AI technologies and addressing ethical concerns remain important considerations in these efforts.

Struggle of Developing Nations
All countries need to adapt to the rapidly evolving world of education today. The slow rate of digitization and technology-driven education in many underdeveloped nations hinders global growth. Teaching strategies and facilities frequently remain insufficient despite attempts to develop and fund schools made by local governments, NGOs, and international agents. Making

more schools and teachers accessible isn't enough; the true issue is making sure students receive high-quality instruction.

Particularly in developing countries, international efforts are required to provide comprehensive approaches that offer meaningful education, including skill-based learning. In addition, inclusive education is a social justice issue and a human right, and it requires addressing hurdles including poverty, conflict, disability, gender discrimination, and cultural norms. To achieve UNESCO's objective of providing education for everyone, it is imperative to democratize access to the newest advancements in education and allocate resources fairly.

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