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Preparing new generation
for the future



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1. Introduction to the Committee.

UNESCO is the United Nations Educational, Scientific and Cultural Organization founded in 1945. This specialized agency of the UN aims to promote and defend international collaboration to protect science, culture and free communication. This Organisation aims to ensure the basic principles of the Rule of Law: the protection and development of human rights, as well as the fundamental freedoms of the United Nations Charter and the Rule of Law. All this in order to guarantee non-discrimination on the grounds of: race, sex, language or religion and universal respect for justice.

Its objective, according to its very nature, is: "to contribute to the consolidation of peace, the eradication of poverty, sustainable development and intercultural dialogue through education, the sciences, culture, communication and information". There are currently 193 Member States that are members of UNESCO.

Of particular note is UNESCO's pacifist line, which seeks to resolve conflicts through the effective fulfillment of its core functions:

- The creation of prospective studies, with the aim of studying and promoting new forms of education, the implementation of culture and communication for the future.
- The analysis and development of knowledge exchange, using research, universal training and education as a vehicle for information transfer.
- The creation of standards, seeking international collaboration to achieve the pursued goals.
- The documentation and creation of expertise, transmitted only under the co-operation of Member States to cooperation of Member States at the technical level to drive their development policies.
- The exchange of specialized information between Member States, vital for the achievement of the Committee's objectives.

The development of all the principles of the Committee and effective collaboration among all Member States is fundamental to furthering the aims of this Organisation. The objective of all the countries that are part of UNESCO is to try to promote agreements and

negotiations that will result in a resolution. It is essential to highlight the importance of the Committee in achieving peace at international level, which seeks to dignify human beings through education, in order to demand equality and solidarity between countries.

2. Introduction to the topic.

The world is changing, and education must change with it. In recent years, technological progress and new ways of learning and teaching have challenged traditional education, which has had to progressively adapt to all the new challenges presented by technology, sustainability, and human development. Failure to integrate all these variables into education systems can result in new generations being left behind and not making the most of all the opportunities that the world presents.

It should not be forgotten that this new education should not only be developed in developed and high-tech countries, but that efforts should be made to reduce inequalities in educational opportunities, ensuring that those regions with fewer opportunities can also implement Education 4.0.

Artificial intelligence and machine learning in education will be important drivers of growth and innovation and will help people acquire knowledge and skills that would have been unimaginable before. Technology can drive innovation and help people do their jobs faster and better.

On the other hand, the pandemic drastically altered the landscape, forcing instructors to rely on technology for virtual instruction. Artificial intelligence can improve learning and teaching, helping the education industry evolve for the benefit of both students and teachers.

a. What is the Fourth Industrial Revolution?

The Fourth Industrial Revolution presents a change in the way we live, work and relate to each other. It is a new chapter in human development, brought about by extraordinary technological advances on par with those of the first, second and third industrial revolutions.

These advances are merging the physical, digital and biological worlds in a way never seen before. The speed, breadth and depth of this revolution is forcing us to rethink how countries develop, how organizations create value and even what it means to be human.

The Fourth Industrial Revolution is more than technology-driven change; it is an opportunity to help everyone, including leaders, policymakers and people across income groups and nations, leverage converging technologies to create an inclusive, human-centered future. The real opportunity is to look beyond technology and find ways to give the greatest number of people the ability to positively influence their families, organizations and communities. (World Economic Forum, 2022)

Artificial intelligence

Artificial Intelligence (AI) is the process of using computers and machines to mimic human perception, decision-making, and other processes to complete a task. AI has the potential to address some of the biggest challenges in education today, innovate teaching and learning practices, and accelerate progress towards SDG 4. (UNESCO,2022)

Machine learning-based AI is more powerful since the machines can actually learn and become better over time, particularly as they engage with large datasets. In the case of education, machine learning-based AI tools can be used for a variety of tasks such as monitoring student activity or helping them to develop their task in a better and easier way.

However, there are some disadvantages when it comes to AI due to the fact that students can use it to cheat on exams or do homework without making an effort, but international organizations are striving to adapt IA to the classroom because of the enormous benefits it can bring.

Also, there are some problems with AI addressing current inequalities regarding access to knowledge, research and the diversity of cultural expressions and to ensure AI does not widen the technological divides within and between countries. The promise of “AI for all” must be that everyone can take advantage of the technological revolution under way and access its fruits, notably in terms of innovation and knowledge. (World Economic Forum, 2022)

3. Definitions.

Technology skills: skills relating to the creation and use of technology, including digital technologies, the internet and new forms of networked information; especially emphasizing skills in deductive reasoning, algorithm design and abstract concepts relating to data and information. (World Economic Forum, 2022)

Artificial Intelligence (AI): the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.(Oxford)

Makerspaces: a place in which people with shared interest, specially in computing or technology, can gather to work on projects while sharing ideas, equipment and knowledge. They can be inside a school, library or a public/private facility.

4. What is education 4.0.?

We are witnessing how technology linked to the development of the Internet is transforming the world and education. Therefore, we can distinguish four stages in education, related to industrial revolutions and technological progress.

Education 1.0 is the traditional education, in which the teacher presented his knowledge to the students. In education 2.0. students started to have interactive media, being able to communicate and interact with the teacher through technology. It also opened the possibility of creating projects on a global level, as technology facilitated communication.

Education 3.0. introduces artificial intelligence for the first time. Thanks to the artificial intelligence of Web 3.0, computers can understand information in a similar way to people, to deliver faster and more accurate results (Huk, 2021).

Education 4.0 focuses on developing a new education framework with eight major transformations to achieve the education of the future, not only focusing on content but also on how we teach to better prepare the next generation for the jobs and societies of the future.

Table 1 shows the eight principles on which education 4.0 is based, as well as a definition of each of them.

Content (built-in mechanisms for skills adaptation)	Experiences (leveraging innovative pedagogies)
 Global citizenship skills To include content that focuses on building awareness about the wider world, sustainability and playing an active role in the global community.	 Personalized and self-paced learning From a system where learning is standardized, to one based on the diverse individual needs of each learner, and flexible enough to enable each learner to progress at their own pace.
 Innovation and creativity skills To include content that fosters skills required for innovation, including complex problem-solving, analytical thinking, creativity and system-analysis.	 Accessible and inclusive learning From a system where learning is confined to those with access to school buildings to one in which everyone has access in learning and is therefore inclusive.
 Technology skills To include content that is based on developing digital skills, including programming, digital responsibility and the use of technology.	 Problem-based and collaborative learning From process-based to project and problem-based content delivery, requiring peer collaboration and more closely mirroring the future of work.
 Interpersonal skills To include content that focuses on interpersonal emotional intelligence (i.e. empathy, cooperation, negotiation, leadership and social awareness).	 Lifelong and student-driven learning From a system where learning and skilling decrease over one's lifespan to one where everyone continuously improves on existing skills and acquires new ones based on their individual needs.

Table 1: Eight skills for Education 4.0. Source: World Economic Forum

This new education focuses on developing new models for the Fourth Industrial Revolution, including schools, school systems and educational programs that are pioneering the path to Education 4.0 competencies and learning experiences. (World Economic Forum, 2022)

5. Main principles of 4.0. education

Although there are eight skills that the new form of education wants to develop, in this study guide we will develop some of them in more depth. Some of them are going to be innovation and creativity skills, technology skills and interpersonal skills like problem-solving, collaboration and adaptability.

a. Innovation and creativity skills

In the fast-paced work environments and competitive products landscapes that the future is going to bring, innovation and creativity are going to be essential skills for the students to compete, iterate, organize and lead in every industry.

Innovation and creativity are needed so as to develop the capacity for complex problem solving, critical and computational thinking, data analysis, and design. All of this helps students to fuel the development of solutions, services, products and frameworks.

How are innovation and creativity integrated in the classroom?

- Offer opportunities for **makerspaces**, project-based learning, and hands-on activities both in groups and individual settings.
- Integrate synchronous and asynchronous online collaboration.
- Give students hands-on opportunities to create with technology, such as coding their own games.
- Interact with real-world data and information, and teach them to organize, analyze, and visualize it.
- Encourage iterative design projects with multimedia tools and online simulators, and push students to perform continuous testing and interact with end users for feedback.

b. Technology skills

A digital transformation towards Education 4.0 must be based on the use of digital technologies taking into account the individual needs of students; but also the training of teachers in digital competencies to be able to teach students, who are digital natives.

Among the main technological drivers of the digital transformation in education are educational software that is associated with the skills and competencies needed for students to learn in the 21st century.

New technologies have changed the way people interact with information. The proliferation of the internet and mobile computing devices has led to a massive increase in the amount of knowledge and information and therefore, new technologies are also needed to collect, process and interpret it.

c. interpersonal skills: problem-solving, collaboration and adaptability

Education 4.0 reimagines education as an inclusive, lifelong experience that places the responsibility for skill-building on the learner, with teachers and mentors acting as facilitators and enablers.

Problem-solving

Problem-solving skills go hand in hand with some additional skills developed: creativity, data analysis, perseverance and critical-thinking. What are the advantages? First, students can approach problems with curiosity. Second, they allow them to study the situations to identify the root cause. Also, it leads to brainstorming of potential solutions and tests on a small scale. The last step to develop an actual skill on problem-solving is to review the outcomes, scale up and keep monitoring the situation.

Collaboration

Collaboration involves working effectively with others, whether as a leader or a member of a team. Being collaborative means being open to changing your perspective when presented with evidence that contradicts your initial beliefs, and using good data and persuasive techniques to influence others. Successful collaborators are skilled at building relationships with individuals from diverse backgrounds, personalities, and working styles, and are quick to defuse tension and resolve conflicts within a team. They communicate respectfully, whether in person, through writing, or when listening to others.

Adaptability

For a long time, the skill of being able to adapt to new situations and circumstances has been undervalued due to the difficulty in defining what 'adaptability' means. The range of adaptability skills varies from being comfortable with uncertainty, sudden changes, and unfamiliar circumstances, to the ability to create effective solutions and make decisions under pressure. Young people with adaptability skills can easily switch between being a follower and a leader. They are always eager to learn new things, master new skills, and challenge themselves in various ways.

6. Conclusion and Questions a Resolution Must Answer

The emergence of Education 4.0 offers a unique opportunity to upgrade our educational systems to ensure that we effectively prepare the world's two billion young people for the Fourth Industrial Revolution, while also reducing inequalities in educational systems and capitalising on the promise of educational technology. By centering individual skill-building and classroom learning around problem-solving, collaboration and adaptability, Education 4.0 offers young people the greatest possible opportunity to succeed in a global economy. However, this global institution must make sure that the change is global, with no big divergence between the educational system of the developed and the developing countries. On the other hand Education must be always in an adaptation and updating process, so as to keep up with the technological changes that are present in our society.

Taking into account all of this information, this UNESCO Committee must address the following questions in a resolution:

- 1) What are the potential downsides or challenges of Education 4.0, and how can they be addressed?
- 2) How can schools and universities integrate technology into their curriculums effectively?
- 3) How can educators ensure that Education 4.0 is accessible to students from diverse backgrounds and socioeconomic statuses?
- 4) How can we measure the effectiveness of Education 4.0 in terms of student learning outcomes and success?
- 5) How can we ensure that Education 4.0 is ethical and aligned with principles of social responsibility and sustainability?
- 6) How can Education 4.0 be globally present? How will UNESCO oversee the implementation of Education 4.0 in order not to magnify the already present gap in education between developed and developing countries?
- 7) How will Education 4.0 help educational systems be up to date with the technological change? In which ways can we assure that the educational system does not become obsolete?
- 8) In developing countries, which opportunities does Education 4.0 bring to schools with poor material resources?

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