

AGENDA

International educational event - series of Workshops:

**"IMPLEMENTATION OF "GREEN" AND DIGITAL
TECHNOLOGIES
IN INTERNATIONAL EDUCATIONAL ENVIRONMENT"**

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THE ROLE OF INDUSTRY 4.0 IN EDUCATION AND ADVANTAGES FOR IMPROVEMENTS

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The First Industrial Revolution

in the 18th and 19th centuries, involved a change from mostly agrarian societies to greater industrialization as a consequence of the steam engine and other technological developments.

The Second Industrial Revolution

the was driven by electricity and involved expansion of industries and mass production as well as technological advances.

The Third Industrial Revolution

involved the development of computers and IT (information technology) since the middle of the 20th century.

The Fourth Industrial Revolution

is growing out of the third, but is considered a new era rather than a continuation because of the explosiveness of its development and the disruptiveness of its technologies.



The Four Industrial Revolutions



Industry 1.0

Mechanization and the introduction of steam and water power



Industry 2.0

Mass production assembly lines using electrical power



Industry 3.0

Automated production, computers, IT-systems and robotics

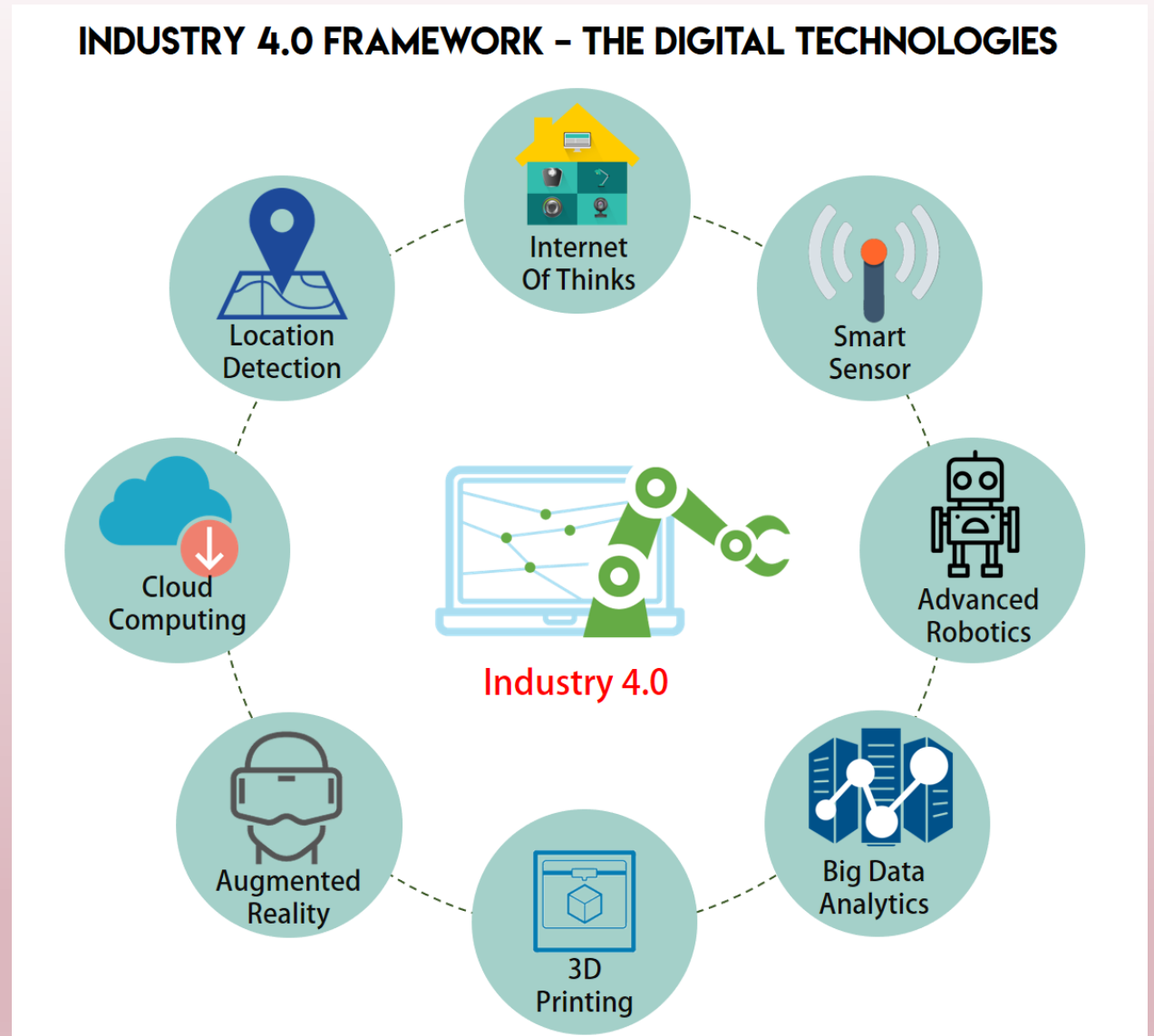


Industry 4.0

The Smart Factory. Autonomous systems, IoT, machine learning

Specific technologies of the Fourth Industrial Revolution include

but are not limited to:



The Evolution of the Learners skills

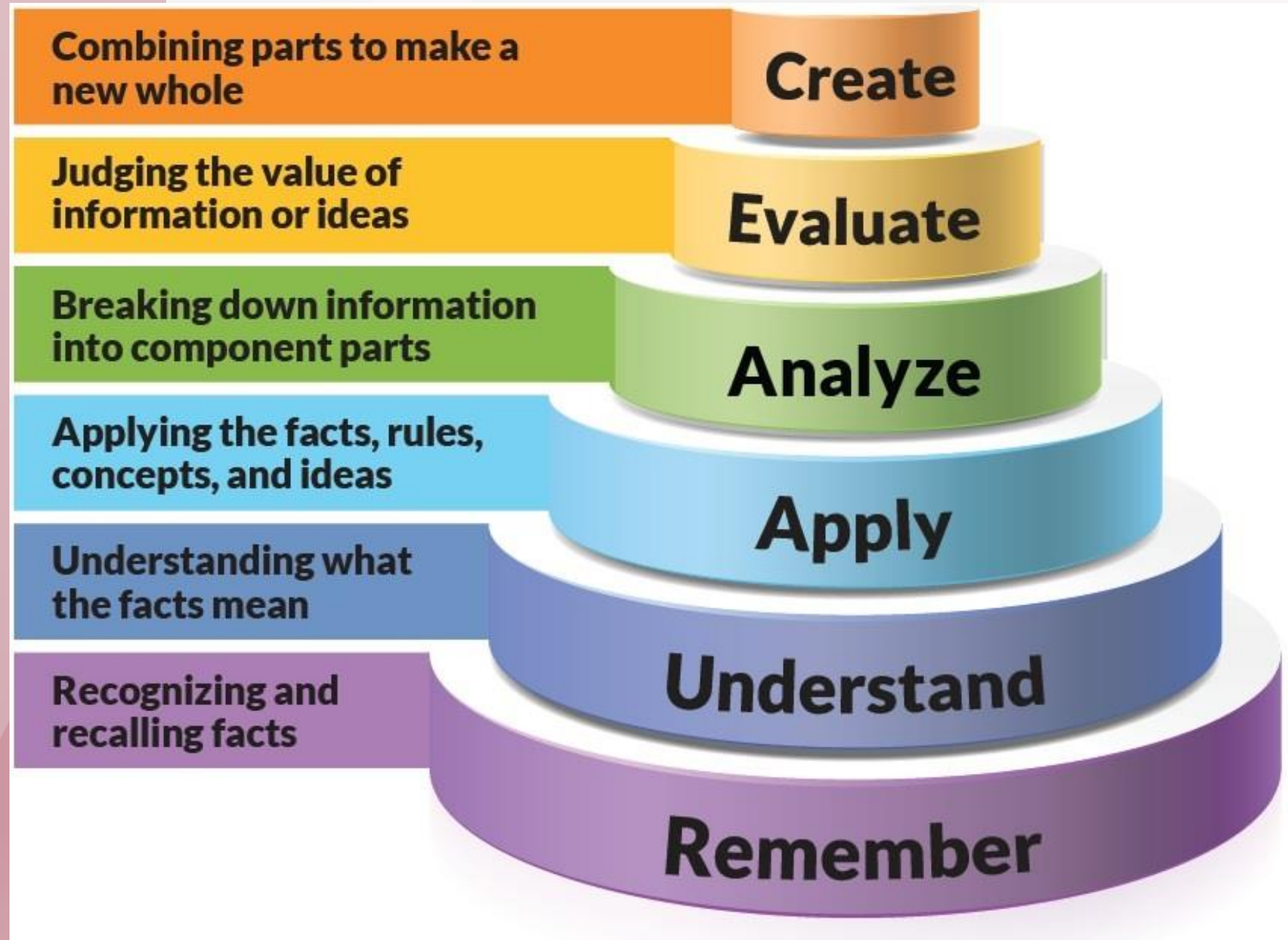
Pre PCs 1990	No Computing skills Hard to get information Used to spend long hours to study Teacher is a main source of information Books and Libraries
Home PSs 2005-15	Computing skills Easier to get information Used to spend long hours to search and study on PCs Teacher is still the source of information
Smart phone tablets 2015-22	Low Computing skills Very easy to get information Used to spend long hours on social media Short attention span - lots of interruptions Teacher is no longer the information source



Modes of Teaching and Learning

- *Knowledge or Skills*
- *Systems/Design/Critical Thinking*
- *Comfort with Ambiguity*
- *Importance of (Transcending) Disciplines*
- *Compassion, Empathy and the Self*
- *Ways (and Spaces) of Knowing*

Bloom's taxonomy



In the Education 4.0 approach, it is stated that constructivist education systems will be applied in general, and it is defined that a learning process based on the 3 fields explained by going beyond Bloom's taxonomy.

3Rs



that regulate understanding (Recalling-Remembering, Relating-associating, Refining-Refining)

3I



(Inquiring- Questioning, Interacting- Interaction, Interpreting- Interpreting) that trigger the research

3P



(Participating- Participant) based on result generation being, Processing, Presenting)

The main change and transformation points that will occur within the scope of education 4.0



- ❖ Educational learning activities can take place in different places, at different times and by using different tools.
- ❖ The understanding of education/learning will prevail everywhere and at all times. Individuals will be able to receive distance education in line with their own understanding,
- ❖ Theoretical information can be obtained outside the classroom. Practical information will form the cornerstones of face-to-face education.



- ❖ Students will have to perform project-based learning and work as they will have to prepare themselves for independent work in future free economic environments.
- ❖ In other words, they will have to learn how to apply their skills and abilities in a short time.
- ❖ Institutional and organizational time management will be one of the basic requirements that students need to learn in order to prepare them for the future.



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- ❖ The main theme of the courses will focus on field knowledge and experience.
- ❖ Students will be given training to gain skills to solve more real-world problems.
- ❖ This shows that training/learning activities will be enriched with more INTERNSHIP, MENTOR Projects, and TEAMWORK, COLLABORATION-oriented approaches.



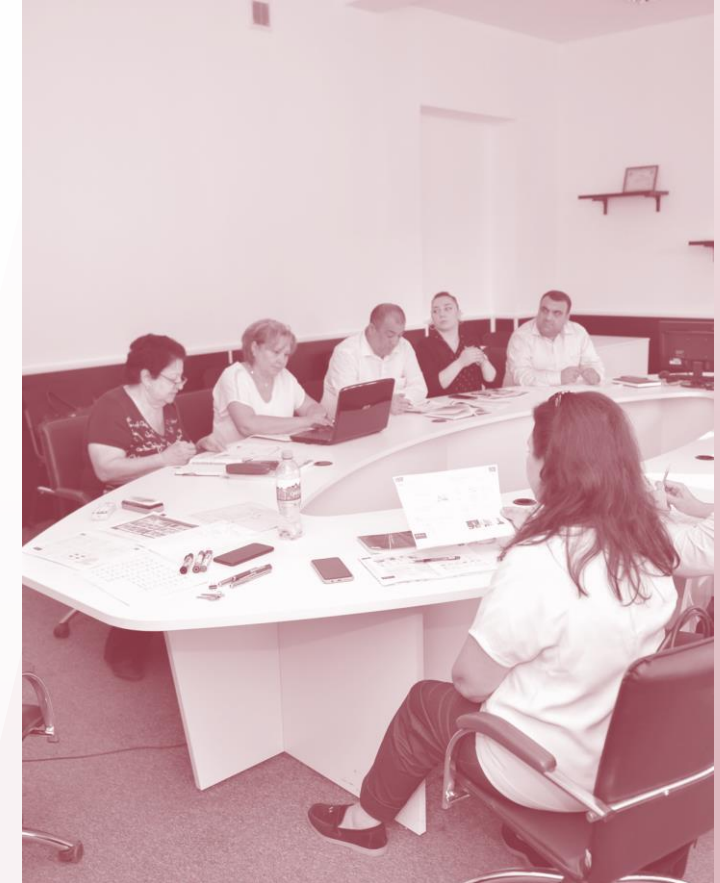
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- ❖ Exam formats will also change completely. Now the Question-and-Answer application will be abandoned.
- ❖ Students will be able to memorize the topics to the end and avoid forgetting them the day after the exam.
- ❖ During the learning process, their knowledge will be measured and their ability to apply their knowledge in the field will be tested with the performance of the projects they work on. In short, instead of EXAM, the concept of SITUATION EVALUATION will be on the agenda.



- ❖ Students will be more and more involved in creating course content.
- ❖ It will be possible to reach up-to-date, modern and realistic content with the contents prepared by students and teachers together.
- ❖ The most important input of the learning programs will be the students' criticisms about the content.



The main change and transformation points that will occur within the scope of education 4.0



- ❖ Using a mentor will be more important every day. Students' learning processes will be more independent, so using mentors will make a significant contribution to student success.
- ❖ Since the education will be carried out remotely, teachers and educational institutions will be more important for academic performance. Virtual mentors will be actively used in the world of Education 4.0



- ❖ It will be possible to access all courses and courses over the Internet.
- ❖ Web interfaces and access systems will be implemented for students to learn in the most appropriate way.
- ❖ Based on these explanations, there will be changes in the education/training strategies of universities.



Among them, the following can be counted:

- Ensuring the transformation into educational environments where Digital Culture becomes widespread
- Implementation of innovation-driven training programs
- Implementation of new business models and multidisciplinary training programs (structuring of faculties accordingly)
- Keeping up with the change in accreditation processes, abandoning fixed training programs, training programs based on the innovation cycle
- The use of new educational technologies and approaches, such as enriched education programs with virtual simulation systems (integration of augmented reality and real world)
- Implementation of distance education technologies and new computer-based learning processes
- Commissioning of personalized education environments



Achieved ADVANTAGES of Education 4.0 for Teachers

Revolution of Education 4.0 offers new education system and transform innovative learning thereby causes improvement in teaching



ADVANTAGES of Education 4.0 for Managers and Administrators

One of the most important challenges of implanting Education 4.0 is lack of knowledge among managers and administrators



ADVANTAGES of Education 4.0 for students

Students will learn new digital skills which will enhance their career growth



Influence of Industrial Revolution 4.0 on Higher Education

It will bring smart machine integrated with internet of things



Today, qualifications and knowledge relevant to the labor market are studied and analyzed and added to teaching materials. It is taught not only theoretically but also practically.

The goal of universities today is to become more relevant.





Education should also be upgraded using Industry 4.0 to be more relevant and useful. Otherwise, the role of the digital environment in the world changes, and the relevance and function of universities may become redundant.

Thank you for your attention!



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