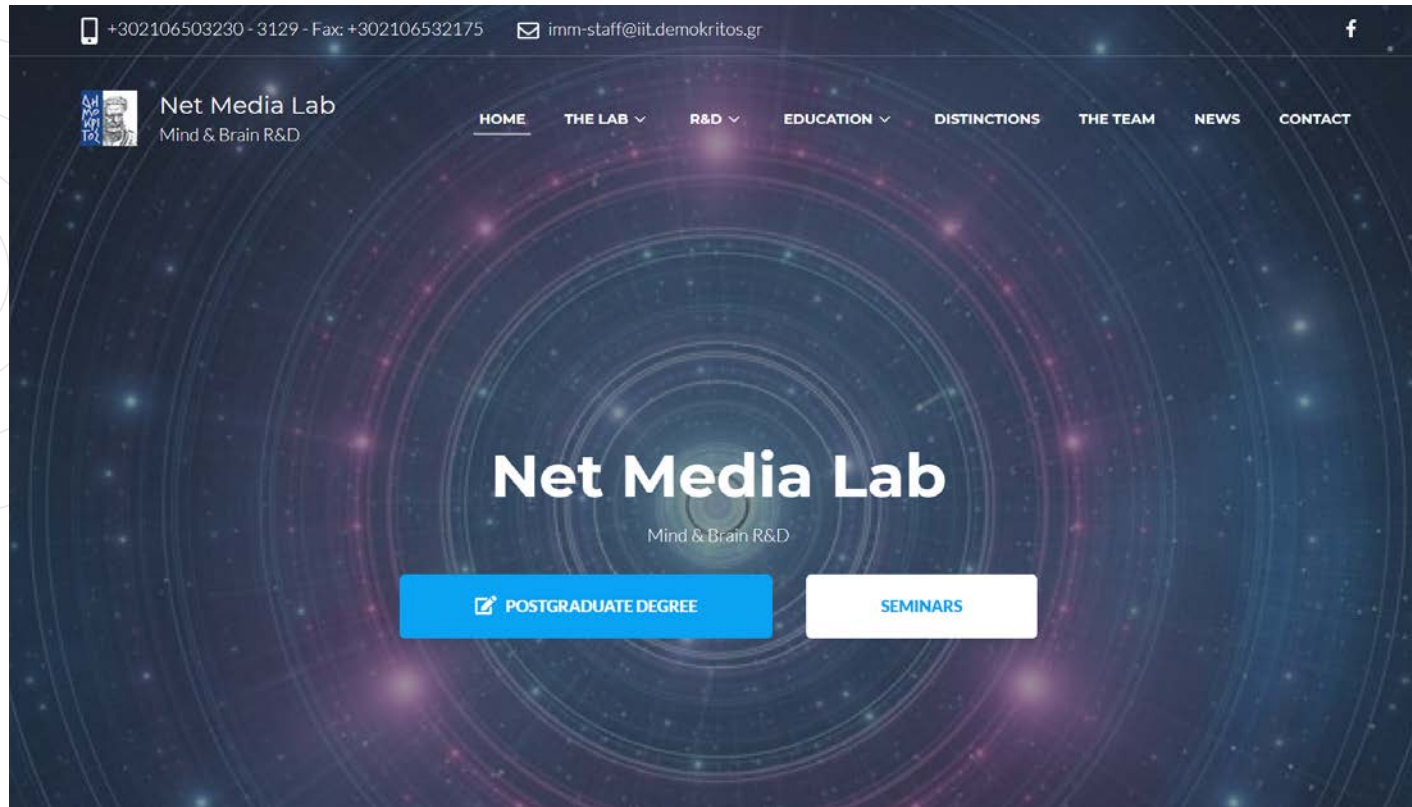


Διαδικτυακή Ημερίδα
"Ο Καταλυτικός Ρόλος των Γυναικών, των Ψηφιακών Τεχνολογιών και των Δεξιοτήτων του 21ου Αιώνα στην Αναβάθμιση του Σχολείου και της Κοινωνίας",

Dr. Athanasios Drigas
Research Director
Engineer & Psychologist
<https://www.researchgate.net/profile/Athanasios-Drigas/research>
<https://scholar.google.com/citations?user=r2w21SUAAAAJ&hl=en>

<http://imm.iit.demokritos.gr/wp-content/uploads/2021/02/drgr.pdf>

15 Μαρτίου 2023




- Net Media Lab, Mind & Brain, R&D (<http://imm.iit.demokritos.gr/>)

What is the gender gap and why

weforum.org/agenda/2022/03/international-womens-day-gender-gap-inequality/

Global Agenda | Gender Inequality

What is the gender gap and why is it important? Measuring progress for International Women's Day




Progress to bridge the gender gap is critical, though slow, and might not be attained for more than a century. Image: UNSPLASH/LinkedIn Sales Solutions

04 Mar 2022
Emma Charlton
Senior Writer, Formative Content

f t in r

UpLink - Take Action for the SDGs



VISIT UPLINK TO
SUBMIT, REVIEW
OR SUPPORT
INNOVATIVE
SOLUTIONS TO SDG
CHALLENGES

Take action on UpLink

AUDIO: LISTEN TO THE ARTICLE

07:34

This is an experimental feature. Some words or names may be mispronounced. Does it sound good? Yes / No

- The World Economic Forum's Global Gender Gap Report measures the number of years it will take to achieve gender parity.
- The gender gap in Political Empowerment is the largest of the four areas tracked.
- The findings underscore the importance of International Women's Day on 8 March; this year's theme is #BreakTheBias.

"If you can't measure it, you can't manage it," so goes the adage, often attributed to management consultant Peter Drucker.

And this International Women's Day, being able to measure and monitor the progress toward gender parity is more important than ever; as the quest for equality continues to garner attention, it's important to understand whether actual progress is being made.

What is the Global Gender Gap Index?

<https://www.weforum.org/agenda/archive/gender-parity/>


How is the world helping women x +

weforum.org/agenda/2022/03/gender-gap-strategies-parity-diver... 🔍 📄 ☆ 🔒 📱 ⚙️ 🖨️ N ⋮

WORLD ECONOMIC FORUM Join us Sign in

Global Agenda Gender Inequality COVID-19

15 strategies helping to close the gender gap around the world



<https://www.weforum.org/agenda/archive/gender-parity/>

15 strategies helping to close the gender gap around the world

1. Understanding the problem
2. Invest in policies to help women back into the workplace
3. More female role models
4. Aim for the snowball effect
5. Consider quotas
6. Design tools for “unbanked” women in developing countries
7. Review paternity leave policies
8. Understand more about what motivates women
9. Recognize the value that women provide in supporting colleagues
10. Don't always play safe
11. Address the gender gap at all levels in scientific fields
12. Tackling the patent gender gap
13. The need for more legal rights for women
14. Monitor violence against women
15. Make diversity a priority for start-ups

Gender (in)equality - OECD

oecd.org/general/genderequality.htm

OECD.org Data Publications More sites News Job vacancies

OECD
BETTER POLICIES FOR BETTER LIVES

> A to Z

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[OECD Home](#)

Gender (in)equality

Men earn more than women, work less, and occupy more of the top jobs – but women live longer, are better educated and get to retire younger. How best to harness the talents of both sexes for better lives all round?

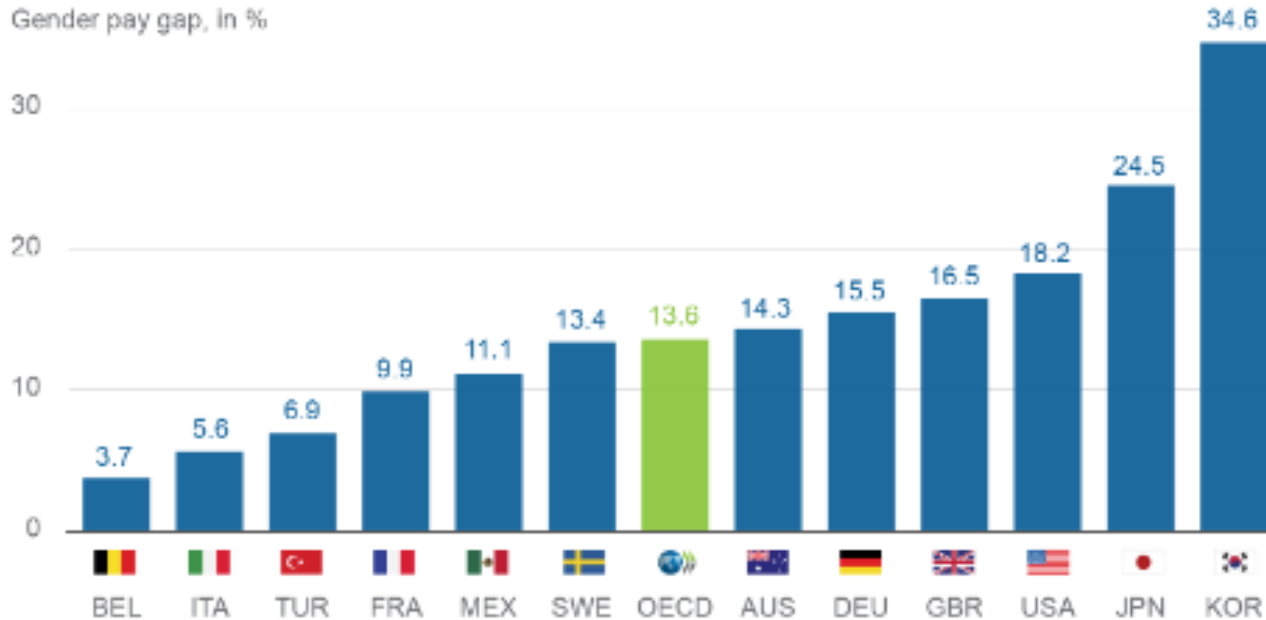
The financial and economic crisis has underlined the importance of making the best use of all our resources if we are to achieve sustainable growth that benefits everyone in the years to come – and that includes people. Making the most of the talent pool means ensuring that men and women, boys and girls, have a fair chance to contribute both at home and in the workplace. The OECD's gender initiative is a measure of the importance of the human element in creating better policies for better lives.

<https://www.oecd.org/general/genderequality.htm>



Gender pay gap in selected OECD countries

Difference between median full-time earnings of men and women, as a % of median earnings of men

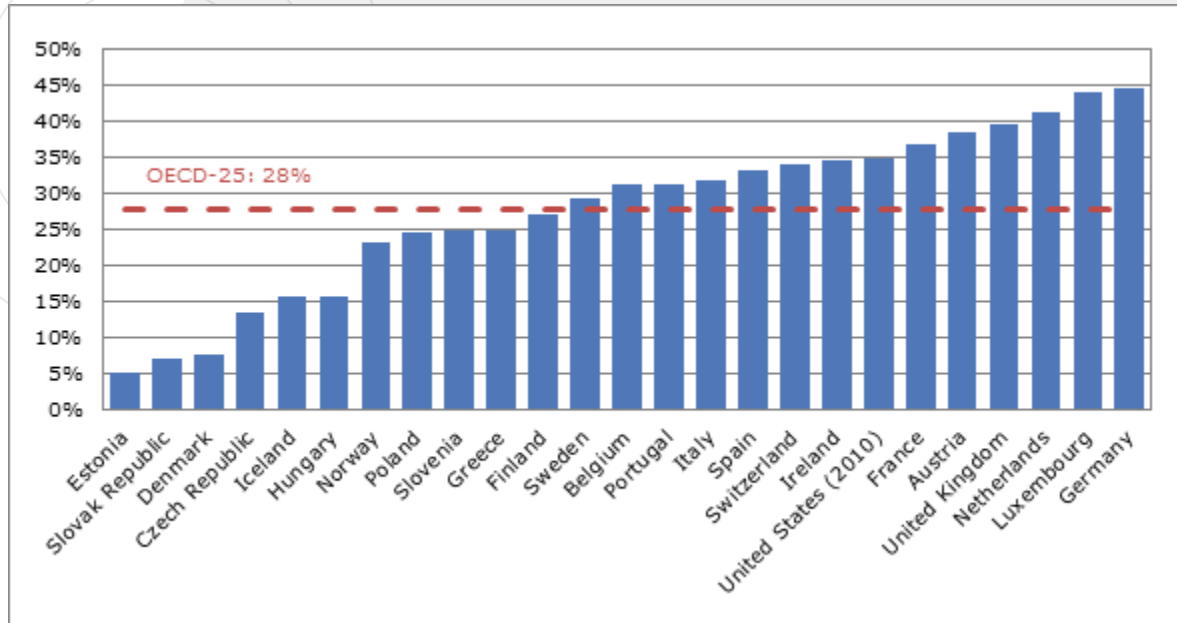


Source: OECD Gender data portal - www.oecd.org/gender/data



<https://www.oecd.org/social/international-women-s-day-progress-on-gender-equality-is-too-slow-says-oecd.htm>

New OECD data and analysis revealing the wide gap in pension benefits between men and women



<https://www.oecd.org/gender/data/newoecddataandanalysisrevealingthewidegapinpensionbenefitsbetweenmenandwomen.htm>

>> The pursuit of gender equality

An uphill battle - Facts & figures

EDUCATION



While young women are more likely to hold a university degree than men (48% of women vs 36% of men), they are still far less likely to study STEM.



STEM



Only around 20% of university students enrolling in subjects like computer science & engineering are women.

By age 15, boys are twice as likely as girls to expect to work as engineers, scientists or architects.

2x

ENTREPRENEURSHIP

Women are much less likely than men to be self-employed.



17%
male
workers
self-employed



10%
female
workers
self-employed



Working women are also half as likely to employ their own staff.

Women earn less from self-employment, too - at least a fifth less than their male peers, in almost all OECD countries.



EMPLOYMENT



On average, women are 11 percentage points less likely to be in paid work than men.

Mothers are 23 percentage points less likely to be employed than fathers.



Less than 1/3 of all managers are women on average across OECD countries.



GENDER PAY GAP

The median full-time female employee still earns almost 15% less than her male counterpart (OECD average).



PUBLIC LIFE

FEMALE MANAGERS FEMALE POLITICIANS



% of managers in central government that are women (OECD average, 2015)

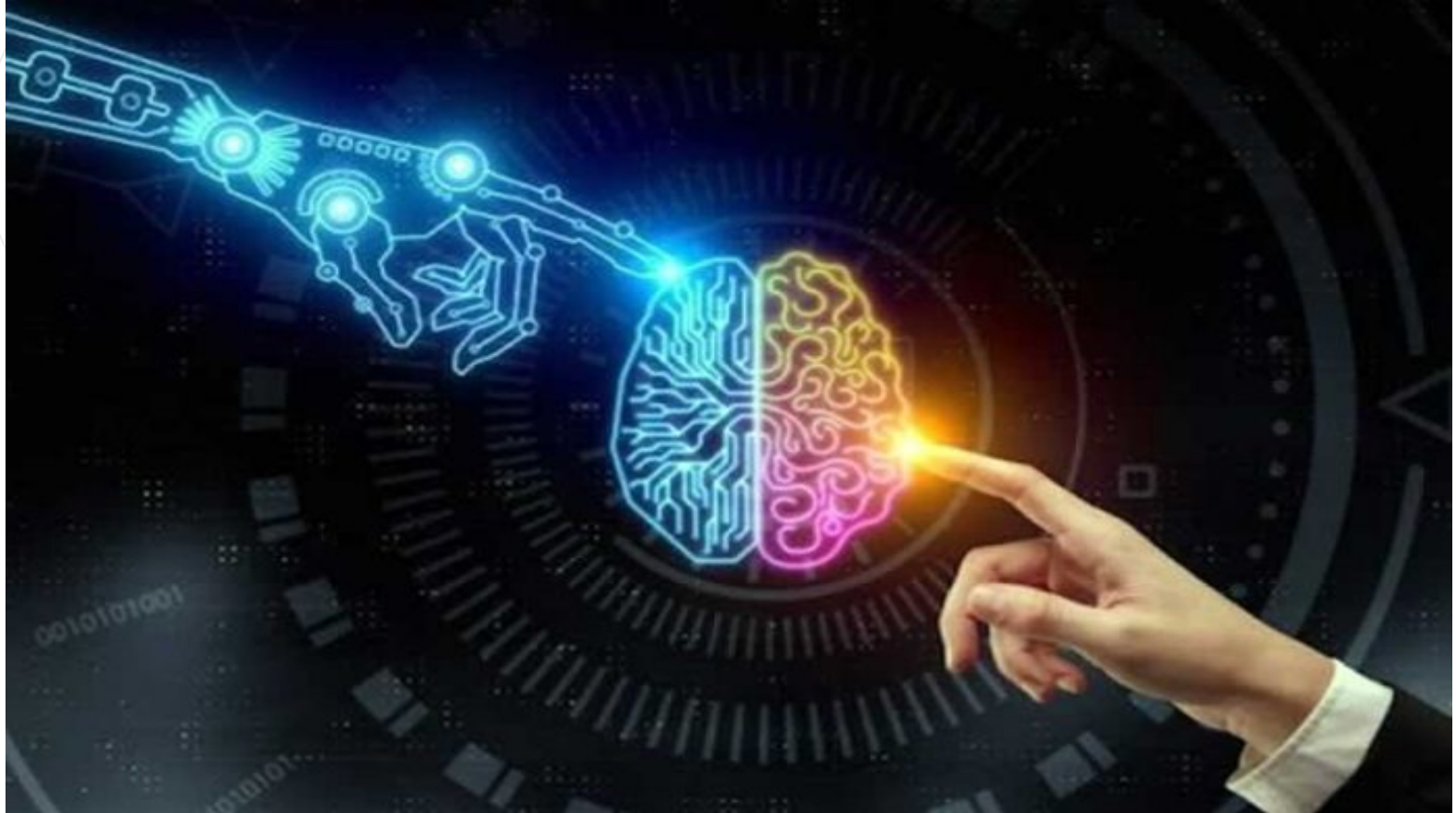


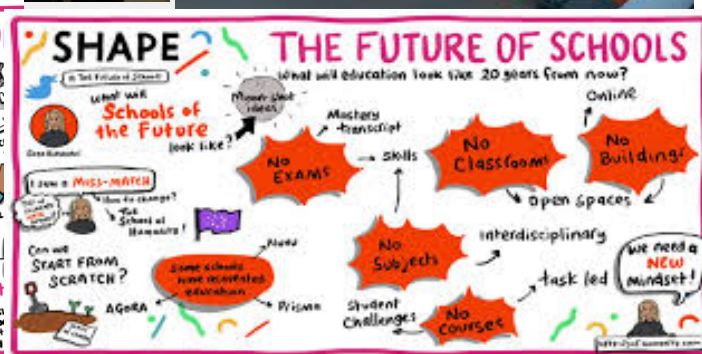
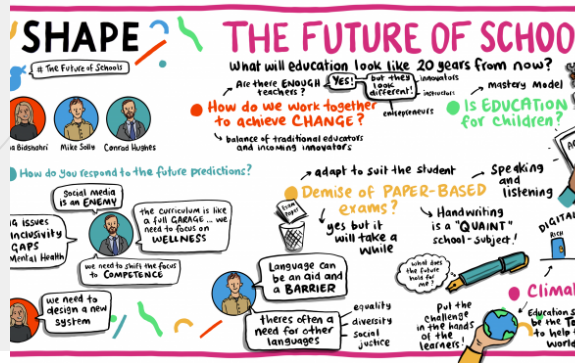
% of seats in national legislatures that are held by women (OECD average, 2016)

URL: oe.cd/gender2017



ΤΟ ΣΧΟΛΕΙΟ ΤΟΥ ΜΕΛΛΟΝΤΟΣ ΤΕΧΝΟΛΟΓΙΕΣ, ΠΕΡΙΕΧΟΜΕΝΟ, ΔΙΑΔΙΚΑΣΙΕΣ, ΠΡΟΤΕΡΑΙΟΤΗΤΕΣ





The Seven Gears of the Future Ready Framework:

- Curriculum, Instruction, and Assessment
- Personalized Professional Learning
- Technology and Infrastructure
- Data and Privacy
- Community Partnerships
- Budget and Resources
- Use of Space and Time



02

Machine Learning (ML)

Machine learning is a kind of data analysis that automates the creation of analytical models. It is a field of AI based on the premise that computers can learn from data, recognize patterns, and make judgments with little or no human input.



03

Robotic Process Automation

This technology enables anyone to build computer software, or a robot to mimic and incorporate human activities while interacting with digital systems in order to create business processes.



04

Data Science

Data Science is the automation that aids in the simplification of complex data.



05

DevOps

DevOps is a methodology that brings together software development and IT operations.



06

Blockchain

Blockchain is the most advanced and cutting-edge technology when addressing electronic records in the year 2021. In simpler terms, a Blockchain is an electronic record that may be shared among several users.



07

Edge Computing

At the end of the week, the teacher has to send the study materials to the students for them to study at home also for project reference.



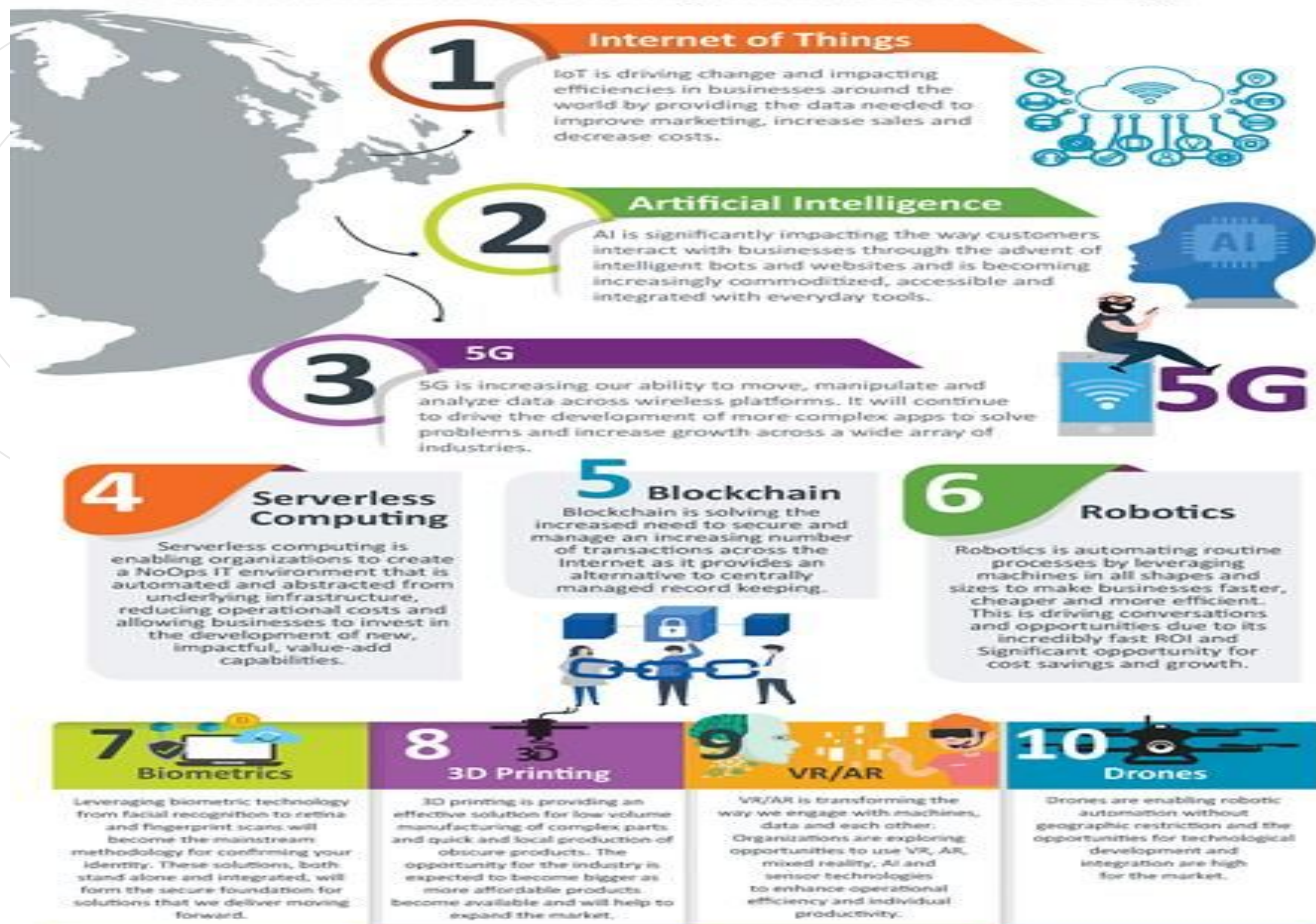
08

Virtual Reality

This cutting-edge technology creates sounds, lifelike visuals, and other emotions that transport you to a fantastical realm. Virtual reality is a technology that allows one to immerse in an environment that appears to be incredibly real.



CompTIA's Emerging Technology Community selected the top 10 technologies that have near-term business and financial opportunity for the IT channel and those working in the business of technology.



Learn more at CompTIA.org/EMTechCommunity.

21st-century worker

Leadership

Take a cross-disciplinary approach to project team-work. Participate in leading and following in order to prepare for your career.

Many businesses are adopting a participative management style, which involves employees in decision making.

George DeMetropolis
University of Phoenix faculty member
and leadership consultant

Collaboration

Choose courses that are collaborative and measure success by team results.

Adaptability

Take advantage of flexible course schedules and learning platforms in order to work, raise a family, volunteer and learn.

Innovation

Seek out learning environments that build technology and media fluency.

Global citizenship

Learn in a diverse classroom to gain opportunities to build cross-cultural understanding.

Critical thinking

Take coursework that offers an opportunity to engage in self-directed, project-based and applied learning.

Communication

Learn in an environment that requires participation in many modes of communication.

Students must hold themselves accountable and have the opportunity to hold others accountable for the good of the team.

Irene Blundell
University of Phoenix
faculty member

Productivity and accountability

Select a school that provides a code of conduct in learning situations to build accountability and productivity.

Accessing, analyzing and synthesizing information

Seek out a market-driven curriculum focused on real cross-functional issues to help you think about how issues interconnect.

Entrepreneurialism

Work on developing the ability to solve current and relevant issues in the safety of the classroom environment.





Claudine Habak, Mohamed L. Seghier, Mohamed A. Fahim, Scott
Parkman
Emirates College for Advanced Education

Schools of the Future_Sample 2

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Schools o... 29 / 51 | 80%

Leaders as community coordinators

Teachers as facilitators

Individualized customized learning experiences within communities

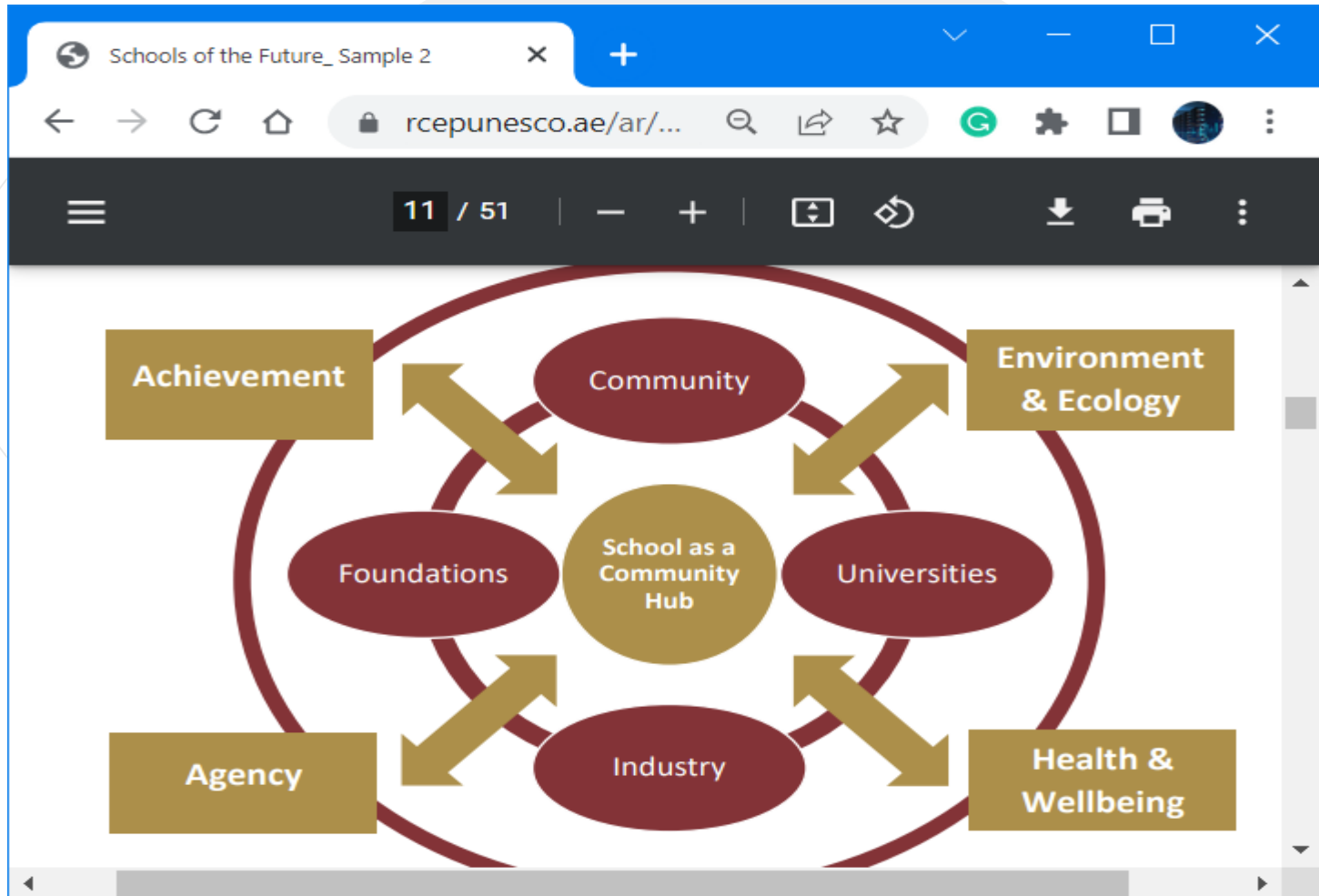
Customized Teacher development and training

Policy: flexibility system-wide stakeholder input

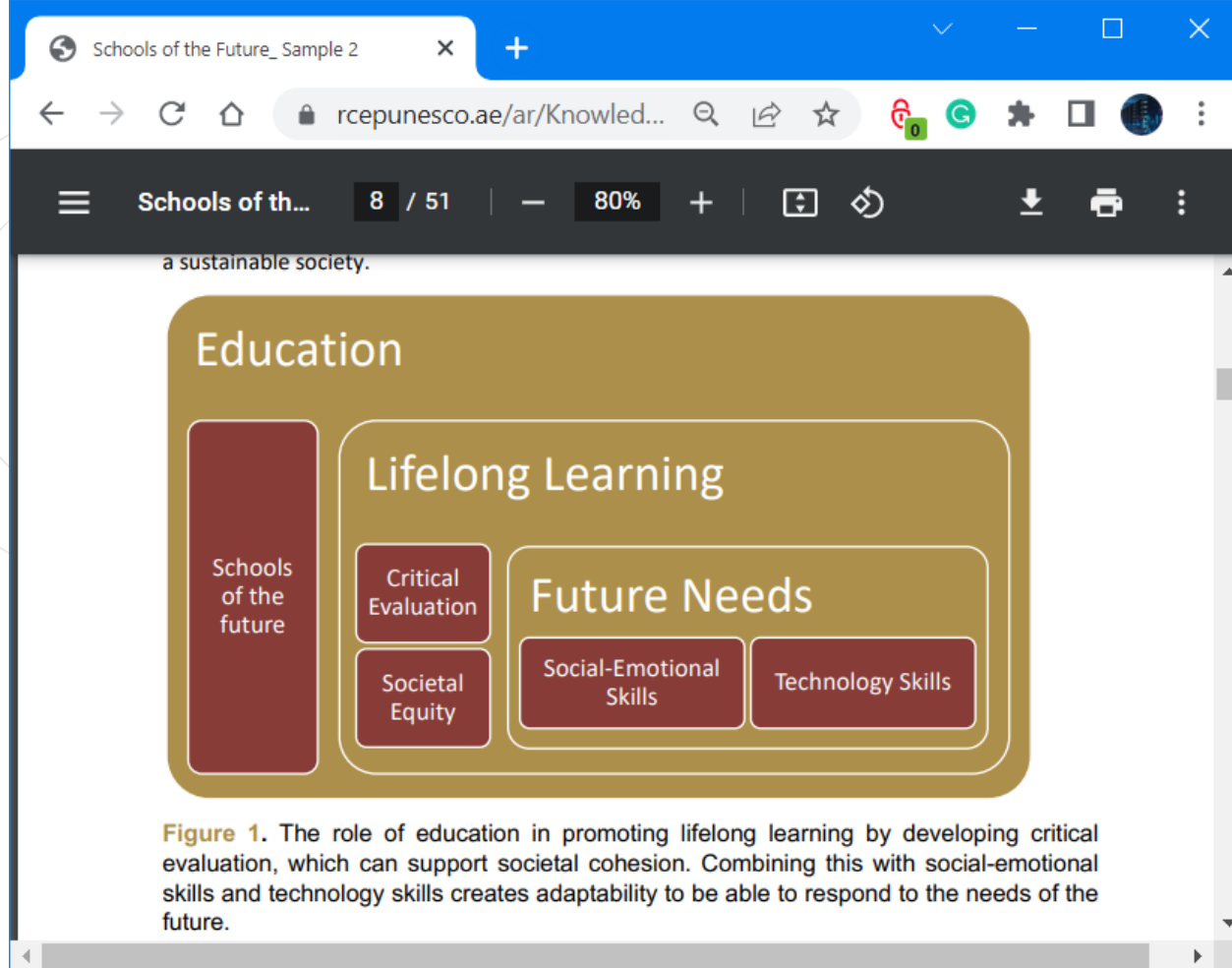
Community opportunities for sustainable flexibility

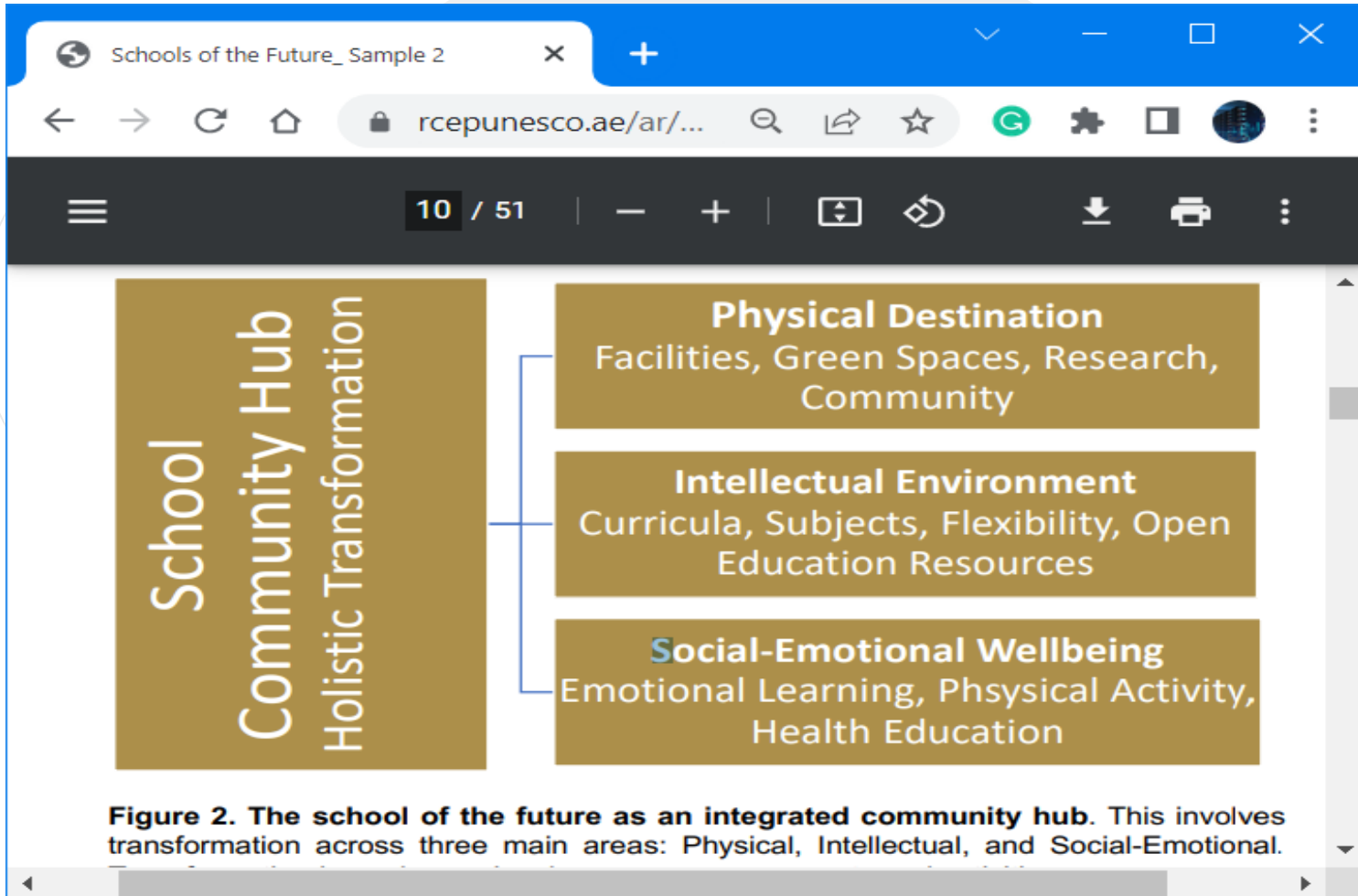
Parental involvement and parent training

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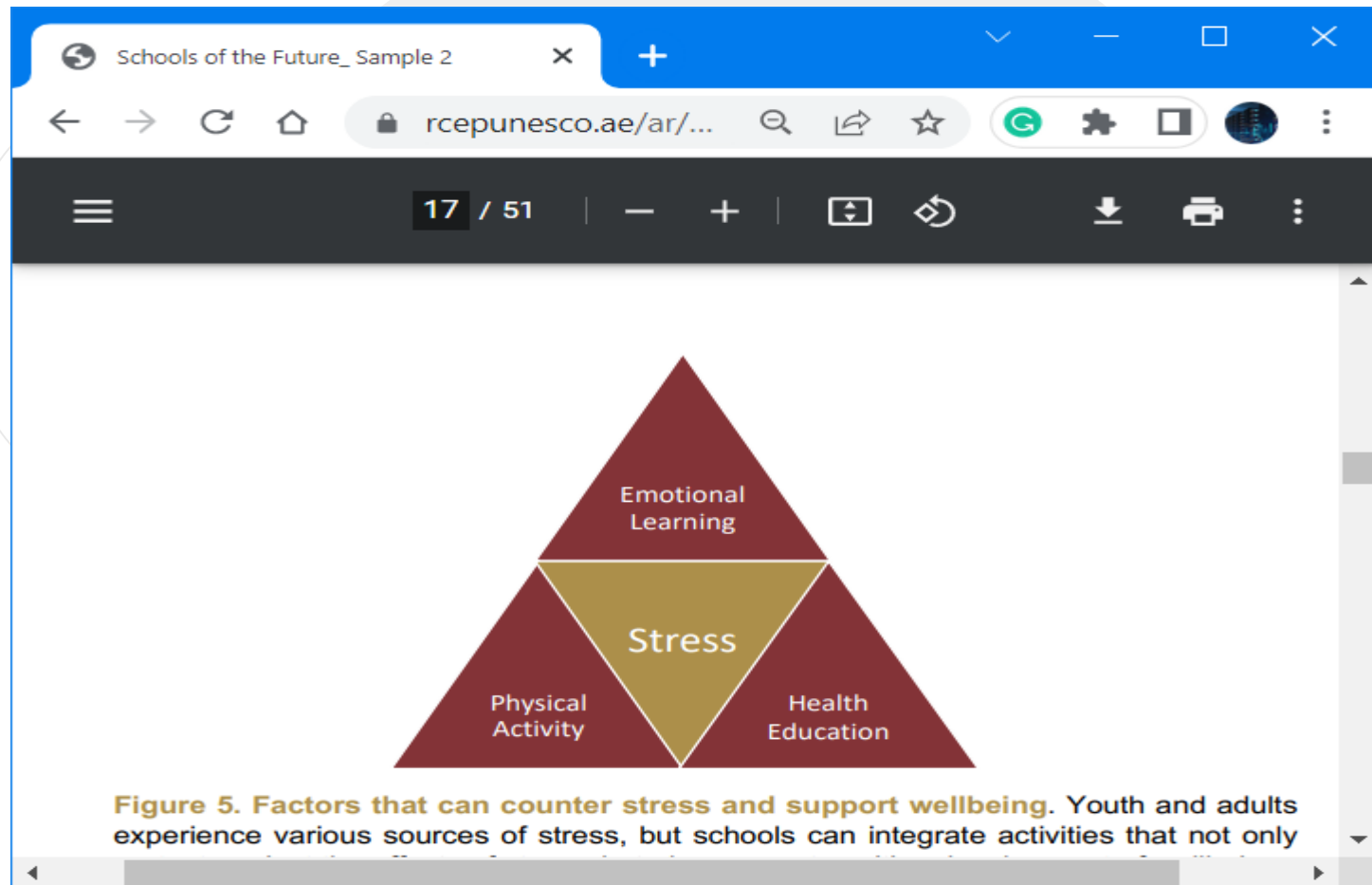


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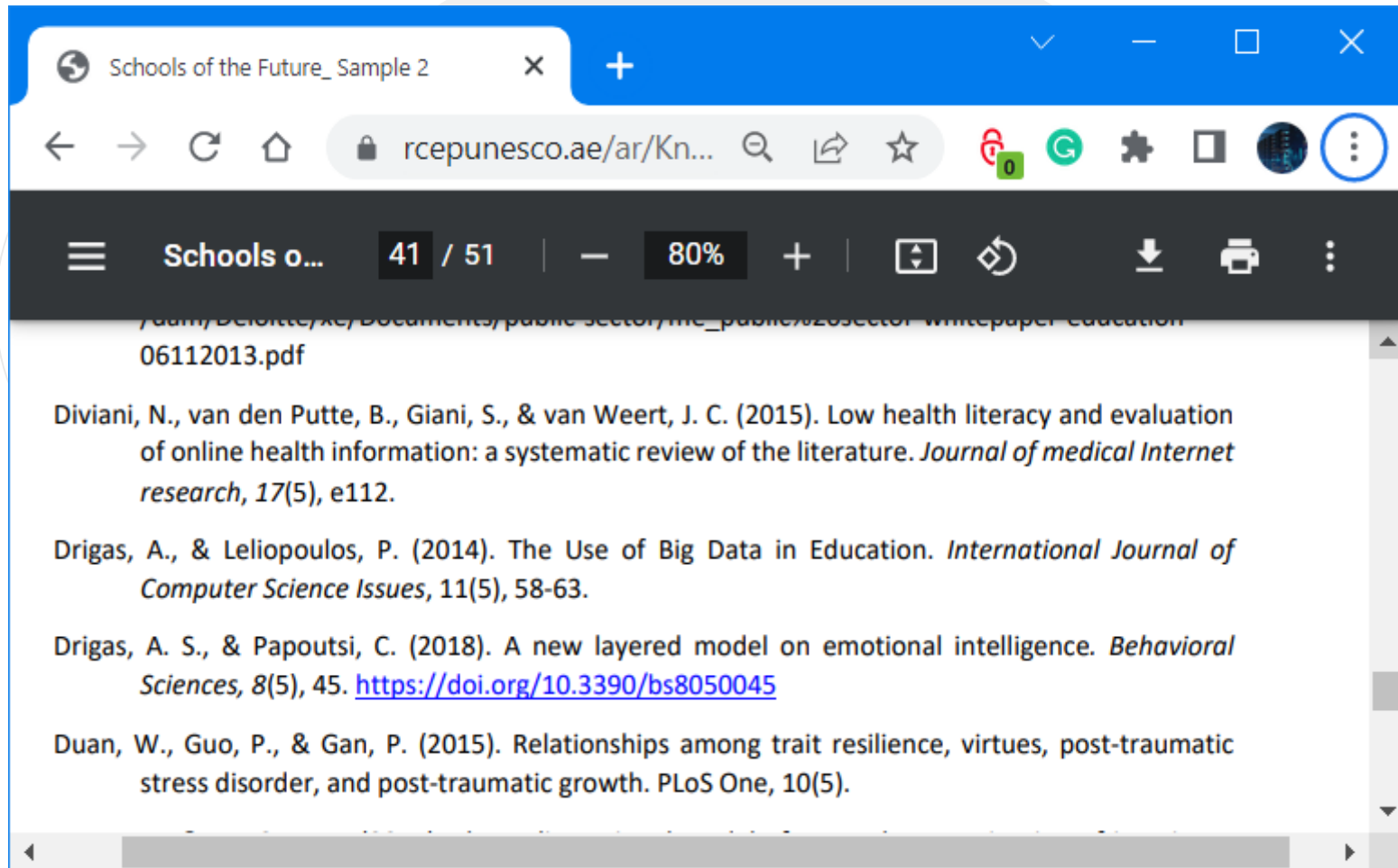
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25 / 51 | 80%

AI-based personalized tutoring	<ul style="list-style-type: none"> • Create learning ecosystems that are personalized and self-paced • Promote personalization and better learning outcomes via collaborative environments and intelligent tutoring systems • Make decisions about the learning path of an individual student and provide cognitive scaffolding and help
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ΟΙ ΤΕΧΝΟΛΟΓΙΕΣ ΤΟΥ ΜΕΛΛΟΝΤΟΣ ΜΕΣΑ ΣΤΟ ΣΧΟΛΕΙΟ

ARTIFICIAL INTELLIGENCE- MACHINE LEARNING-BIG DATA

CLOUD COMPUTING

FIBER NETWORKS, GIGABIT

5G/6G- ΑΣΥΡΜΑΤΕΣ ΤΕΧΝΟΛΟΓΙΕΣ

INTERNET OF THINGS

ROBOTICS EVERYWHERE IN EDUCATION

AVATARS AND DIGITAL ASSISTANCE/COUNSELORS

VIRTUAL LABS & VIRTUAL EXPERIMENTS

EXTENDED VIRTUAL AUGMENTED MIXED REALITY

VIRTUAL CLASSES & VIRTUAL PRESENCE

FUTURE DEVICES – NEW TECHNOLOGIES -SMARTPHONES –HOLOGRAMS

HUMAN MACHINE INTERFACES NEW ERA

BRAIN COMPUTER INTERFACES-BODY ANTENNAS-WEARABLES

NEW SKILLS FOR INDUSTRY REVOLUTION 4.0- 5.0 & BEYOND

COMPONENTS (ROBOTICS, DRONES,3D PRINTING)

GAMES -GAMIFICATION

In education and training, **XR** bridge the gap between educators and trainees, enabling closer collaboration even when people attend course remotely.

XR can accelerate learning, helping companies save money on training.

It provides safe learning environments where trainees can learn from mistakes without any risks.



For presentation and collaboration, **XR** enables shared, large-scale visualization and vivid, walk-through representations of designs and structures.



Providing immersive experiences is enabling brands to improve how they market products, bringing customers closer into their world.



XR offers detailed analytics, connected to performance and interaction, which support rigorous assessment, testing and refinement of marketing messages.



Extended reality also helps learners stay focused, and offers high engagement and knowledge retention.



Consumers can experience and visualize goods before making a physical purchase.

Augmented reality (**AR**) provides a richer user experience while providing a cost-effective alternative to other media platforms.



In the automotive sector, it is used with in-car dashboards to deliver drivers with useful and essential travel and technical information.



In both education and tourism, **AR** can add extra layers of information to historical and cultural sites for users, experienced in real time on location.



It also provides virtual instructions for everyday tasks, such as tyre pressure checks and oil changes.



For customers in the financial and banking sector, there are AR-activated bank cards and geo-targeting apps for locating nearby banking facilities.



As with other XR technologies, **AR** also includes detailed analytics, which are extremely useful for providing customer feedback, marketing data and individual performance assessments.



Retailers can use **AR** to provide additional, dynamic brand content, provide product demonstrations and allow consumers to experience product benefits before purchase.

VR VIRTUAL REALITY

Virtual Reality might be the one you are most familiar with. VR is the term used to describe a three-dimensional, computer-generated environment which can be explored and interacted with by a person. That person is immersed within the virtual environment and in most cases is able to manipulate objects or perform a series of actions. Many people know VR through the use of Head-Mounted Devices (HMD) like the Oculus Rift, HTC Vive, or Google Cardboard.

WHAT ARE THE ADVANTAGES OF VR?

In research and development, design and review and education and training, virtual reality (**VR**) offer a broad range of applications for enterprises and organisations.



In engineering, for example, **VR** gives firms a means of demonstrating products and services, and visualising outcomes to clients.



Manufacturers can experience products before they commit to producing them.



Virtual prototyping enables them to fine-tune designs and troubleshoot earlier in the development process.



In training, **VR** is having a marked impact across a large number of sectors, including medical, aerospace, military and sport.



It offers opportunities for iterative learning and repeated exercises in highly realistic, challenging environments.



Commercial applications of **VR** include the property market, where estate agents can give potential buyers virtual tours of developments, even if they are still at the design or construction stage.



VR also provides highly accurate, walk-through visualisation of architectural projects and renovations.



Virtual reality can also become a useful recruitment tool, giving job applicants a vivid snapshot of what it is actually like to work in a specific role or environment.

MR MIXED REALITY

Mixed Reality blends elements of both AR and VR, where physical and digital objects co-exist and interact in real-time. It allows the user to interact with combined virtual and real objects. Examples of MR include games like Halo Infinite or apps such as HoloTour.

WHAT ARE THE ADVANTAGES OF MR?

MR's combination physical and digital is making significant changes to the mainstream in various industries, including manufacturing, design and construction, medical, education and research.



Call-out engineers can use Mixed Reality for accessing up-to-date information and support from remote experts while remaining hands-free to apply this knowledge practically on-site.



Quality control in manufacturing can overlay information from head-mounted displays (HMDs) and hand-held devices, speeding up quality assurance processes and reducing errors.



MR enables intensive on-the-job training, combining practical instruction with digital information.



It can also speed up the training process, helping businesses bridge the skills gap.



MR is changing how people work, learn and live, and it has the potential to expand further to improve and enhance enterprises and organisations.



Remote experts offer over-the-shoulder coaching to employees and operatives in the field through hands-free **MR** devices.



Mixed Reality opens up new opportunities for collaboration by bringing together multiple **MR** devices in shared spaces. Here, teams can network in a virtual world overlaid onto the physical environment.



ROBOTS AND AVATARS IN SCHOOL



Schools of the Future_ Sample 2

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25 / 51 | 80%

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10 ROLES FOR ARTIFICIAL INTELLIGENCE IN EDUCATION

1. Activity automation
2. Adaptive software
3. Targeted improvement
4. Tutorial support
5. Helpful feedback
6. Information interaction
7. Changing teacher roles
8. Trial-and-error learning
9. Actionable data
10. Changing learning nature

teachthought
WE GROW TEACHERS

Educational platforms based on Artificial Intelligence technology

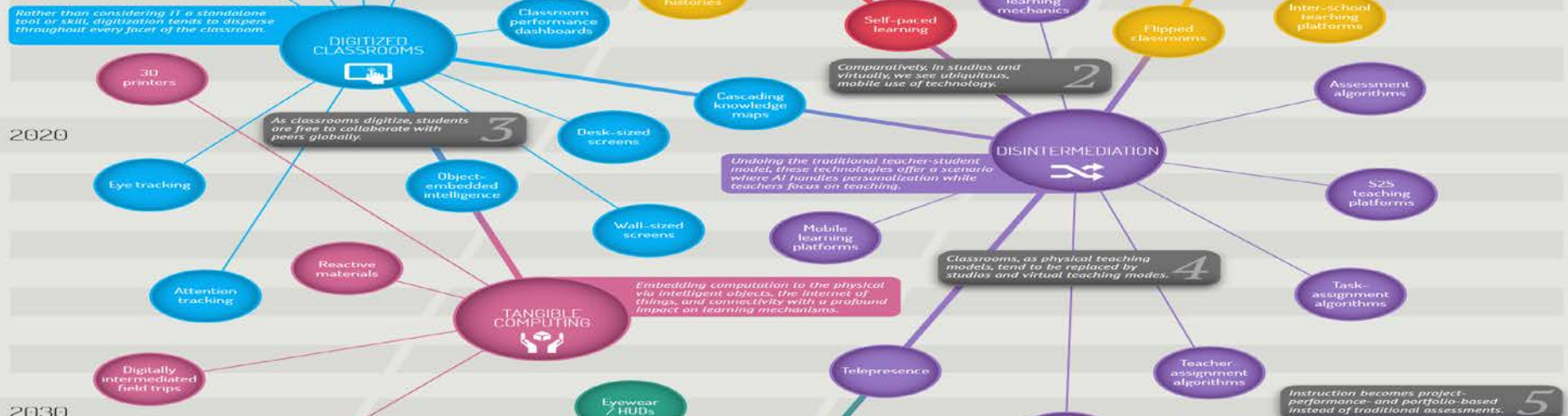
- ◆ Third Space Learning
- ◆ Little Dragon
- ◆ Brainy
- ◆ CTI
- ◆ Carnegie Learning
- ◆ ThinkerMath



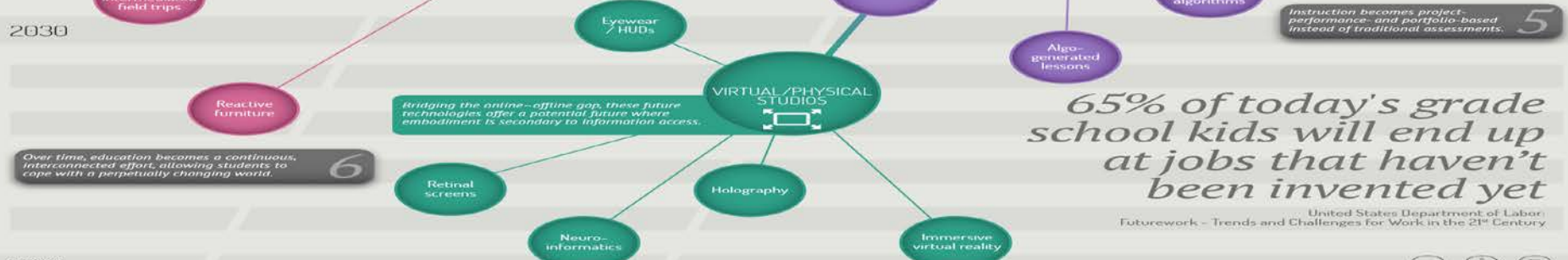
2012



2020



2030



2040

65% of today's grade school kids will end up at jobs that haven't been invented yet

United States Department of Labor
Futurework - Trends and Challenges for Work in the 21st Century



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Metacognition in Autism Spectrum Disorder: Digital Technologies in Metacognitive Skills Training

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Emotional Intelligence in Autism

Article | Full-text available | December 2021

Athanasios DrigasAngeliki Sideraki

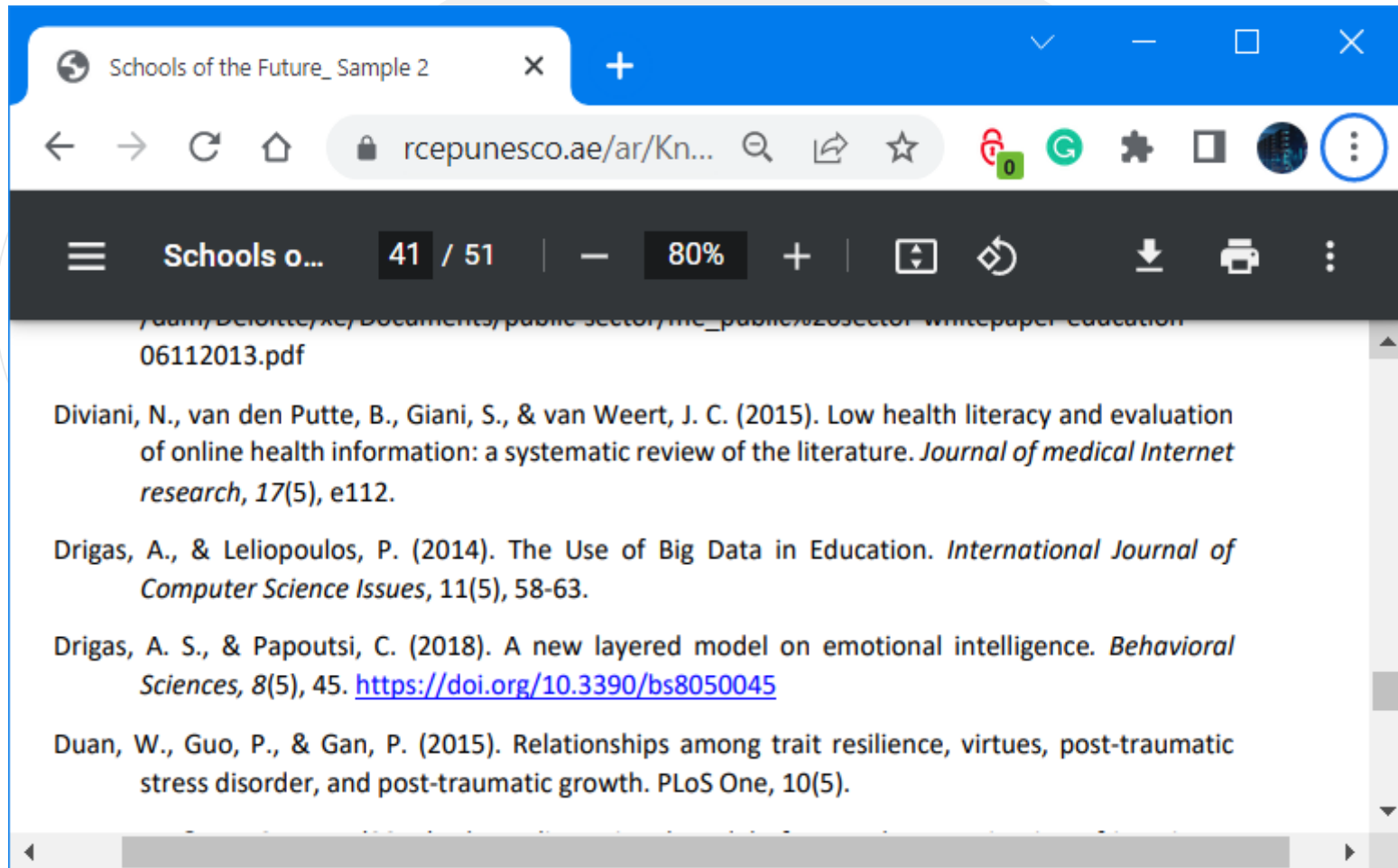
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Artificial Intelligence (AI) in Autism

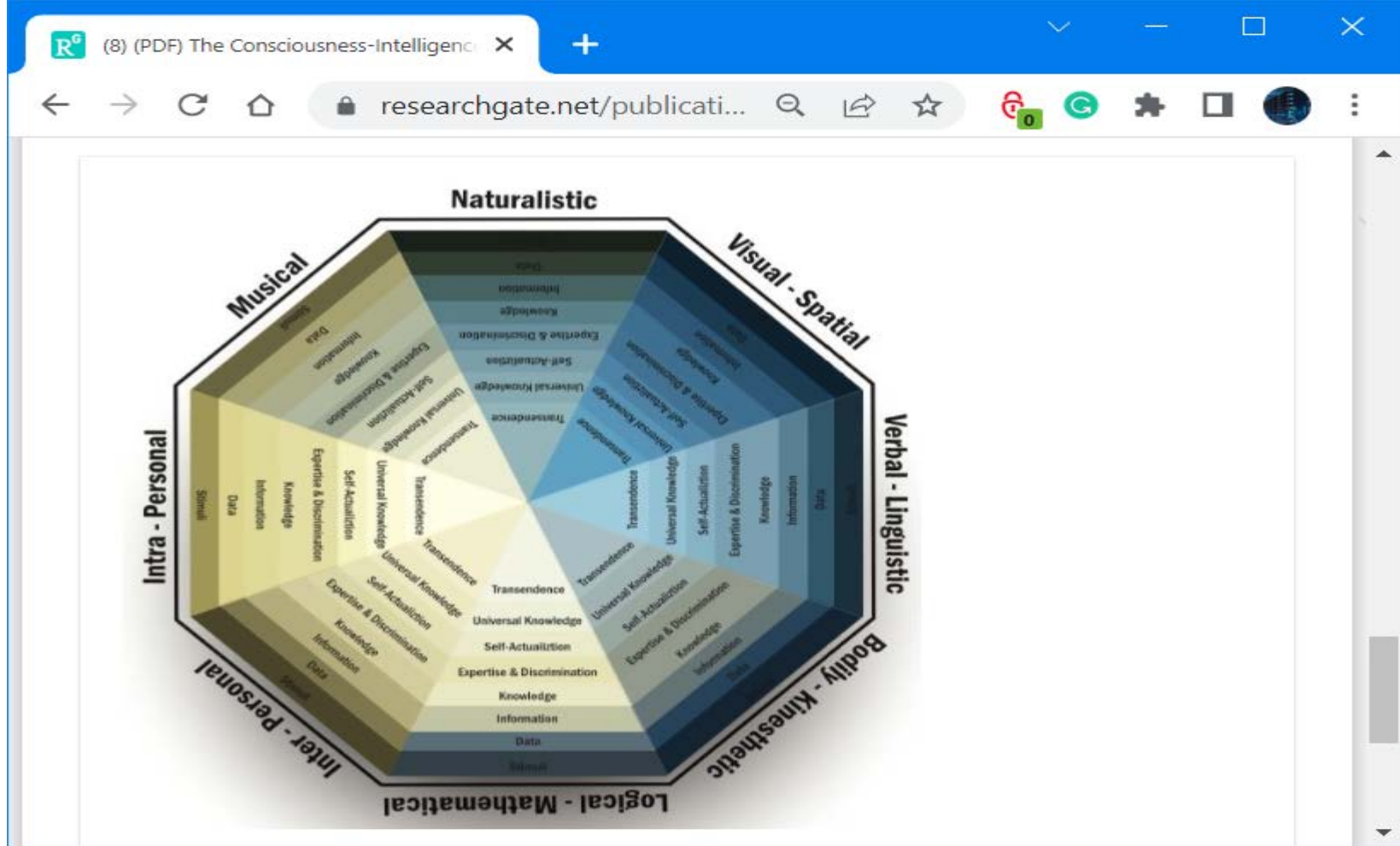
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3. The Pyramid of Emotional Intelligence: The Nine-Layer Model

Taking into consideration all the theories of the past concerning pyramids and layer models dealing with EI, we analyze the levels of our pyramid step by step (Figure 1), their characteristics, and the course of their development so as to conquer the upper levels, transcendence and emotional unity, as well as pointing out the significance of EI. Our model includes features from both constructions (the Ability EI and the Trait EI model) in a more hierarchical structure. The ability level refers to awareness (self and social) and to management. The level of trait refers to the mood associated with emotions and the tendency to behave in a certain way in emotional states considering other important elements that this construction includes as well. The EI pyramid is also based on the concepts of intrapersonal and interpersonal intelligences of Gardner [92,93].

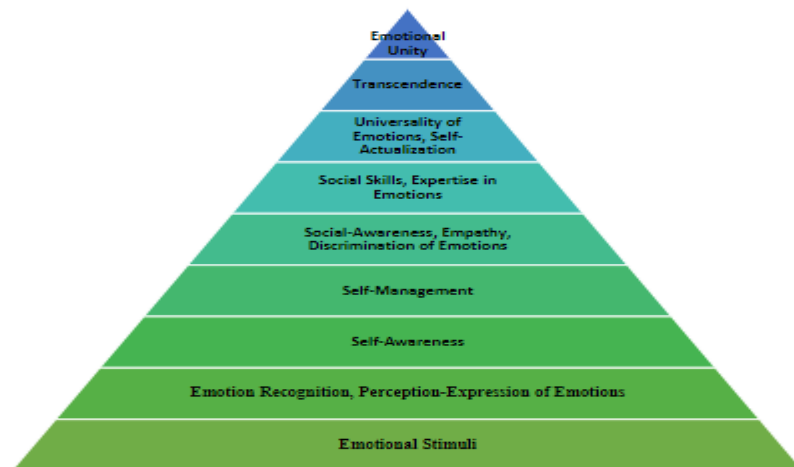


Figure 1. The emotional intelligence pyramid (9-layer model).

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Abstract and figures

Metacognition is one of the foremost cardinal factors of achievement in the 21st century. Despite extensive research, there is still the need to build a unique model based on multidisciplinary research illuminating questions as regards the real nature of metacognition and the methods to develop metacognitive abilities. The current study presents a new layered model of metacognition based on well-established theories derived from cognitive science, psychology, physical and computer sciences, environmental and other sciences, even from philosophy. We describe in detail the cognitive and metacognitive processes involved at each layer, while particular emphasis is placed on the relation between the control processes as well as the special role of attention. According to our model, each layer of metacognition describes a higher-order control system which operates under the rule of a series of attention processes at an ever more refined, abstract and united level. The same applies to the cognitive processes and abilities such as attention, memory, perception, pattern recognition. At each higher level, they display more advanced attributes and functions responding to the necessity of creating more abstract mental representations and upper class motivations, thoughts and emotions. In addition, we recommend a number of strategies that support the metacognitive development at each level of the hierarchy. The multi-layered model of metacognition targets at enriching our understanding of how metacognition evolves and it has the potential to guide the development of more effective strategies in educational system.

1 Introduction Many researchers have attempted to develop theories and models of metacognition. Flavell [1] recognized that metacognition consisted of both monitoring and regulating aspects. He proposed a model of metacognitive monitoring which includes the following components: metacognitive knowledge, metacognitive experiences, tasks or goals and strategies.

The figure consists of two parts. On the left, there is a bar chart with 8 layers, each represented by a different color and labeled with a cognitive process: Attention (red), Perception (orange), Memory (yellow), Pattern Recognition (green), Problem Solving (blue), Decision Making (purple), Self-Regulation (brown), and Self-Observation (pink). On the right, there is a central diagram titled '8 PILLARS' which lists various cognitive and metacognitive processes in a circular arrangement around a central point. The pillars include: KNOWLEDGE, EXPERIENCE, STRATEGIES, MONITORING, REGULATING, SELF-OBSERVATION, SELF-REGULATION, and ADAPTATION. The central point is labeled 'METACOGNITION'.



The 8x8 Layer Model Consciousness-Intelligence- Knowledge Pyramid, and the Platonic Perspectives

<https://doi.org/10.3991/ijes.v9i2.22497>

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Abstract—The concept of knowledge is an issue that concerns a swarm of scientists. In now days a battery of researches are trying to detect appropriate strategies to improve cognitive and metacognitive skills. Since ancient times many questions have been raised about what knowledge is (what we mean when we say that someone knows something or what we attribute to a person who we say knows something) and how we can gain knowledge. Moreover how knowledge and information in general is influenced by its transmission is also an important and widely debated problem, which takes different forms depending on the ways (philosophy) or media (technologies) and the era of transmission. In this article we will try to review the pyramid of knowledge in the process of the years getting started from the era of antiquity by affiliating its data with the musings of the Greek philosophers to prove that all the philosophical prepossessions and theories of the past are timelessness and undisputed.

Keywords—Pyramid of knowledge, philosophy, Greek philosophers, Plato

1 Introduction

The problem of the nature and provenance of human knowledge is rather one of the fundamental problems of humanity. Perhaps it is one of those cardinal problems of

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Serious games in K-12 education

Benefits and impacts on students with attention, memory and developmental disabilities

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Abstract
Purpose – The purpose of this paper is to explore the integration of serious games (SGs) in the area of special educational needs in the last ten years (2007-2017).
Design/methodology/approach – SGs indicate positive effects on students with special educational needs and promote a multi-sensory style of learning.

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Digital games & special education

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Abstract. Educators define three factors of interaction or as they refer to the 3 C's in education: Children (children), Community (communication), and Computer (computers) [1]. Information and Communication Technologies are an integral tool of the educational process for modern educational systems, helping the learning process to turn from passive to active, pushing each student to learn independence and autonomy. In recent years, the sciences of education have turned their attention and have already recognized the importance of games and even digital games as a learning tool, emphasizing the benefits for students with or without educational needs.

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BCI-based games and ADHD

Jogos baseados na BCI e TDAH
Juegos basados en BCI y TDAH

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Abstract
Attention Deficit Hyperactivity Disorder (ADHD) is a neurological condition characterized by cognitive task difficulty, impulsivity, hyperactivity and loss of attention. It can persist into adulthood with negative academic and socio-professional outcomes. Neurofeedback treatments have been shown as effective for training the attention ability in children with ADHD. It has been found that interactive multi-player games are ideal from a therapeutic and long-term usage point of view due to their higher social motivation and cooperation among children with ADHD. In this study we conducted a semi-systematic review, with the goal of gathering findings from empirical and theoretical works in order to deepen our understanding about the use of Brain Computer Interface (BCI)-based for children and adults with ADHD, as a method to ameliorate the symptoms of their disorder.

Keywords: Brain-computer interface; BCI; Attention deficit hyperactivity disorder; ADHD; Serious games.

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Review article

Brain computer interface based applications for training and rehabilitation of students with neurodevelopmental disorders. A literature review

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 Intervention

ABSTRACT

The aim of this article is to explore a paradigm shift on Brain Computer Interface (BCI) research, as well as on intervention best practices for training and rehabilitation of students with neurodevelopmental disorders. Recent studies indicate that BCI devices have positive impact on students' attention skills and working memory as well as on other skills, such as visuospatial, social, imaginative and emotional abilities. BCI applications aim to emulate humans' brain and address the appropriate understanding for each student's neurodevelopmental disorders. Studies conducted to provide knowledge about BCI-based intervention applications regarding memory, attention, visuospatial, learning, collaboration, and communication, social, creative and emotional skills are highlighted. Only non-invasive BCI type of applications are being investigated based upon representative, non-exhaustive and state-of-the-art studies within the field. This article examines the progress of BCI research so far, while different BCI paradigms are investigated. BCI-based applications could successfully regulate students' cognitive abilities when used for their training and rehabilitation. Future directions to investigate BCI-based applications for training and rehabilitation of students with neurodevelopmental disorders concerning the different populations involved

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Envisioning the future of education technology

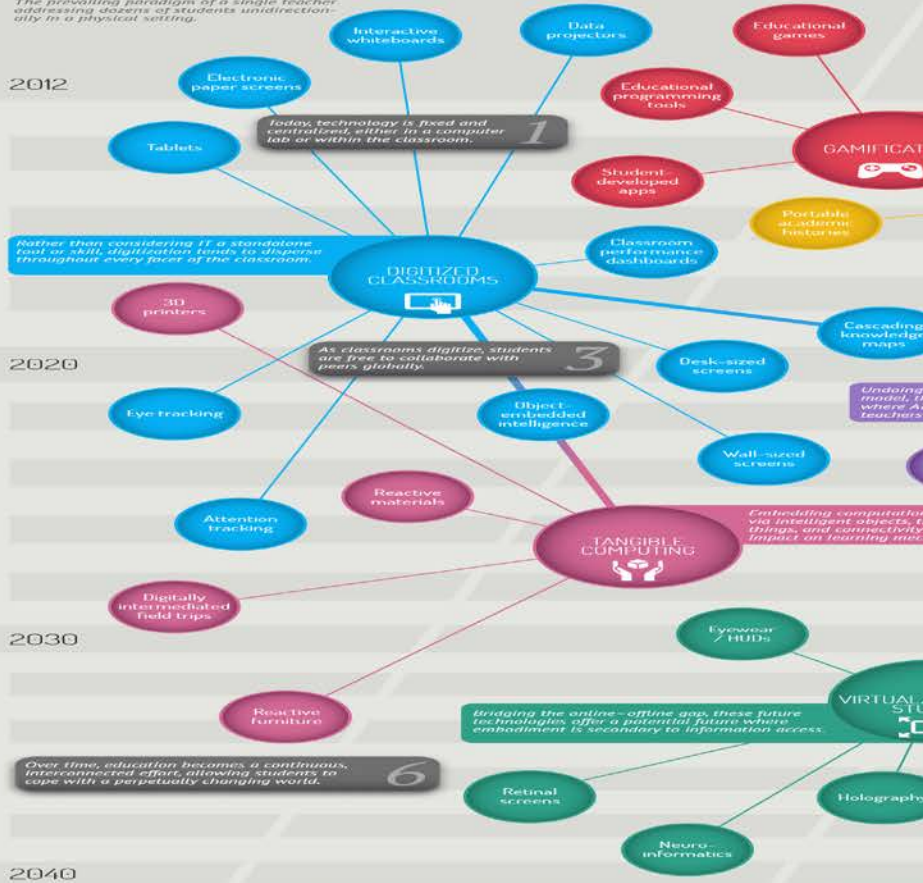
Education lies at a peculiar crossroads in society. On one hand it has the responsibility of anticipating real-life skills by preparing us for an increasingly complex world – but education methodologies can only be formalized after practices have been defined. This dichotomy is particularly aggravated when it comes to technology, where fast-paced innovation and perpetual change is the only constant.

This visualization attempts to organize a series of emerging technologies that are likely to influence education in the upcoming decades. Despite its inherently speculative nature, the driving trends behind the technologies can already be observed, meaning it's a matter of time before these scenarios start panning out in learning environments around the world.



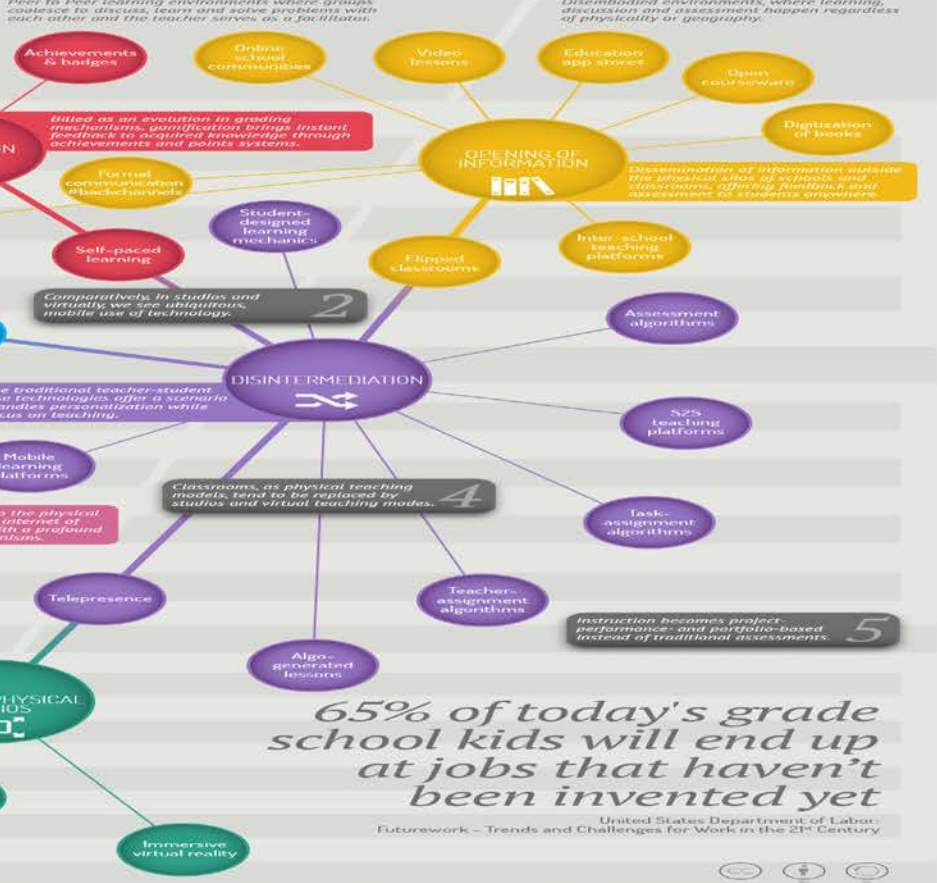
Classroom

The prevailing paradigm of a single teacher addressing dozens of students unidirectionally in a physical setting.



Studio

Peer to Peer learning environments where groups coalesce to discuss, learn and solve problems with each other and the teacher serves as a facilitator.



65% of today's grade school kids will end up at jobs that haven't been invented yet

United States Department of Labor
Futurework - Trends and Challenges for Work in the 21st Century

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Innovative Learning Environments (ILE)

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The case for 21st-century learning

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