LEARNING INNOVATIONS SUMMIT~2024

WORKSHOP

Collective Intelligence Integration in AI-powered Education Practices: How can we engage students?

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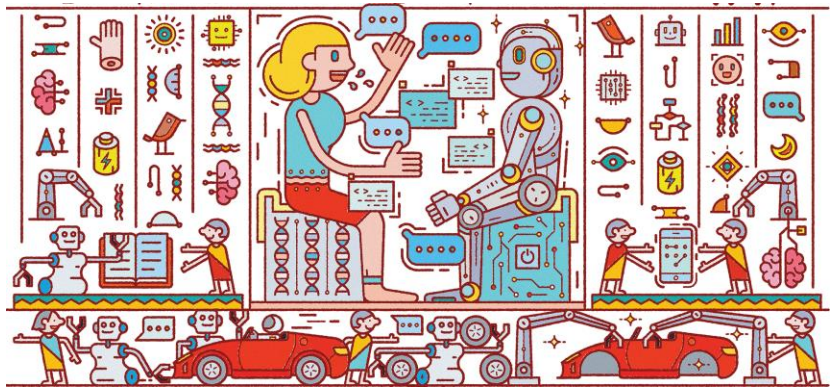
Head of R & D at Doukas School

Humans & Machines



"The most significant performance improvements achieved when humans and machines work together.

*Through such **collaborative intelligence**, humans and AI actively enhance each other's complementary strengths:*

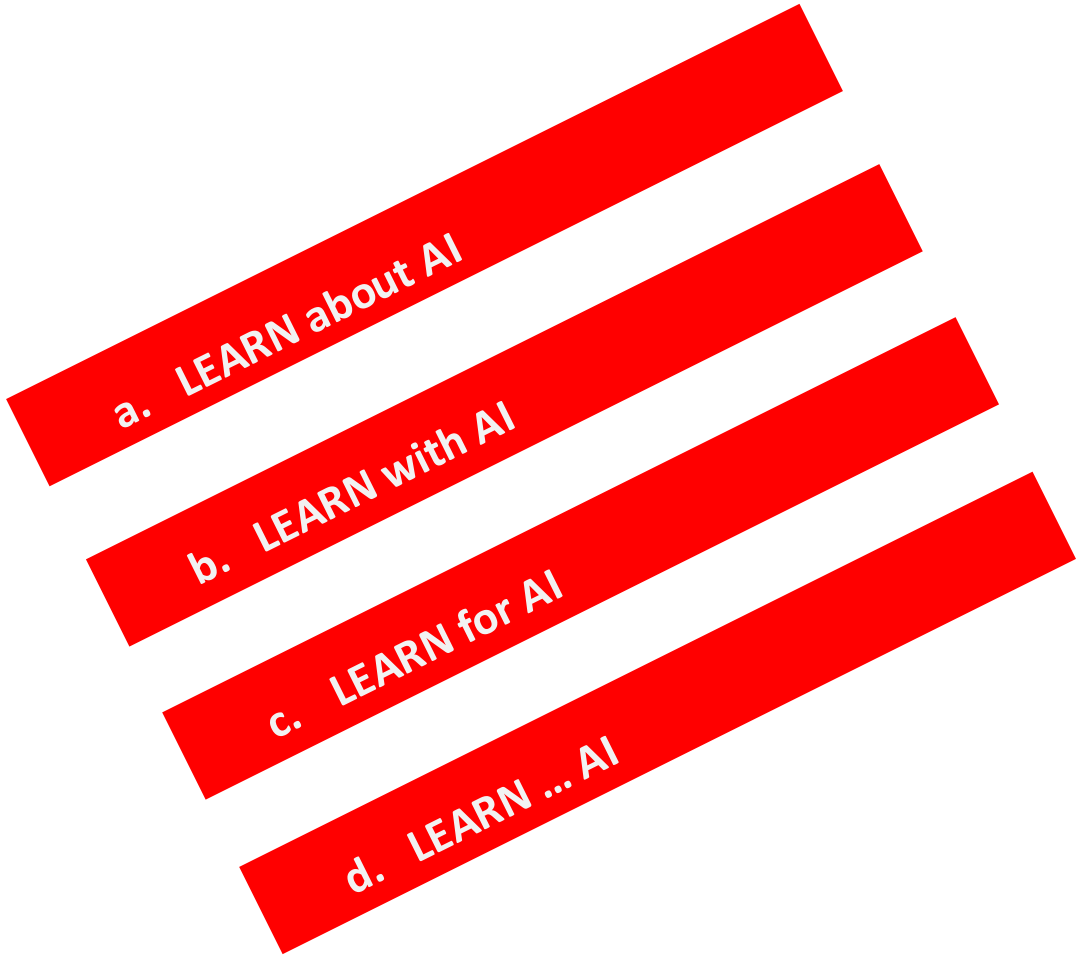
the leadership, teamwork, creativity, and social skills of the former, and

the speed, scalability, and quantitative capabilities of the latter."

Harvard Business Review, H. James Wilson & Paul R. Daugherty
hbr.org/2018/07/collaborative-intelligence-humans-and-ai-are-joining-forces

Can we engage Students?

AI-powered Education Practices!



i. DATASETS

True or False, Real or Not, Human or Artificial?

ii. RECOGNITION

Arts & Plants

iii. MACHINE LEARNING

Ocean Game! Teachable Machine - Arts & Plants

iv. GENERATION and NLP

The GEN AI tools… Example
chatbots: ChatGPT, Gemini, Claude, Copilot
Prompting

As an educator, what are your expectations from the AI community and AI itself?

0

menti.com code: 46895731

a. LEARN about AI

b. LEARN with AI

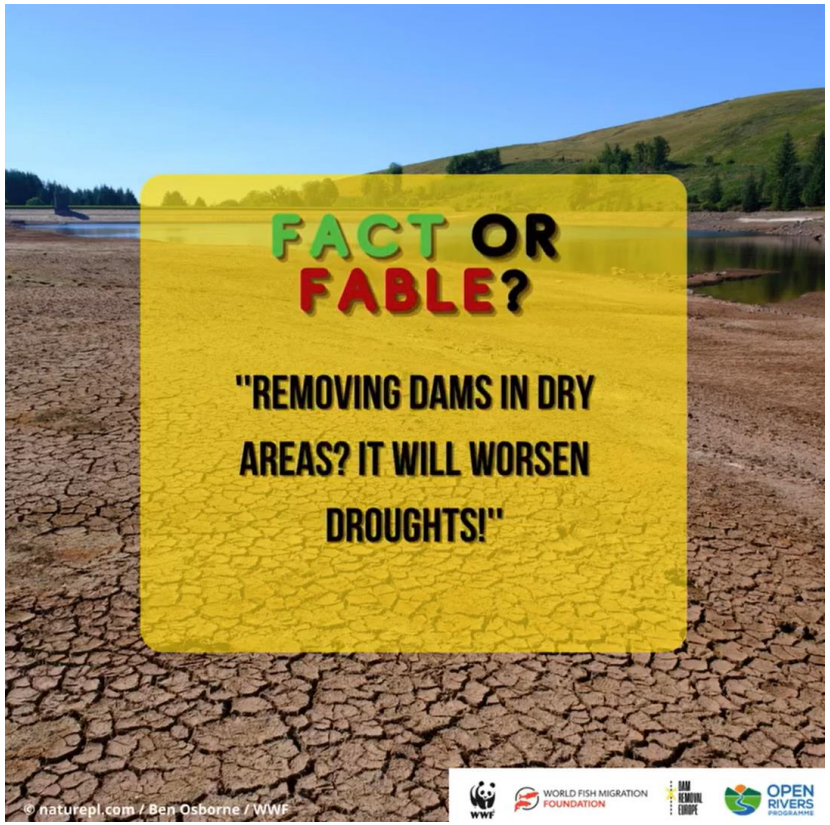
c. LEARN for AI

d. LEARN ... AI

What do you believe, as an educator, that you can offer to the AI community?

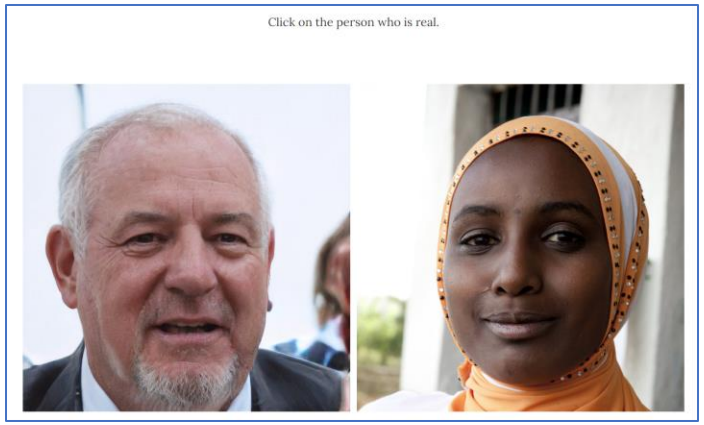
i. DATASETS

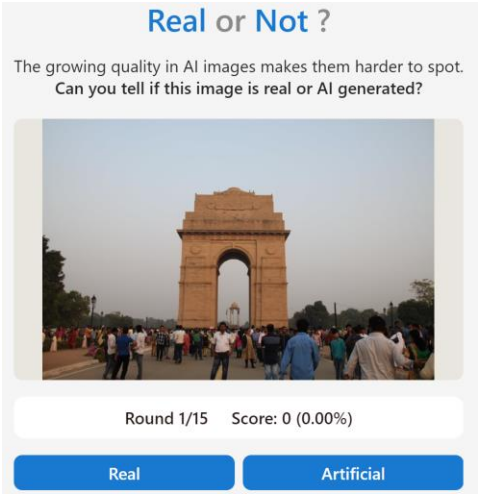
True or False | Real or Not | Fact or Fable?



True or False | Real or Not | Fact or Fable?

1





Real or Artificial?

Can you score more than…

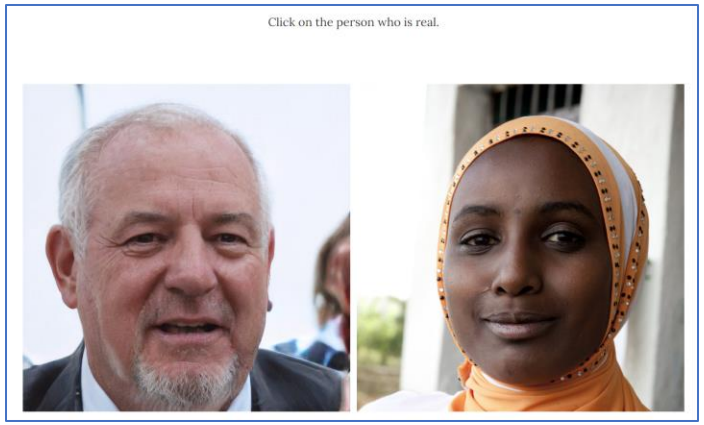
85%?

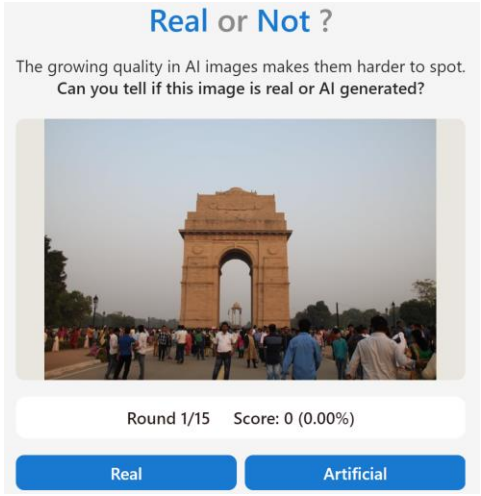
www.whichfaceisreal.com

https://www.realornotquiz.com

True or False | Real or Not | Fact or Fable?

1





www.whichfaceisreal.com

https://www.realornotquiz.com

real or artificial/fake/fable…
image?
message?
news?
article?
object?
essay?
sound?
speech?
video?
mission?
motion?
emotion?
event?
fact?
opinion?
creation?
pager?
code?
live?
human?

True or False | Real or Not | Fact or Fable?

BBC: How to spot a manipulated image

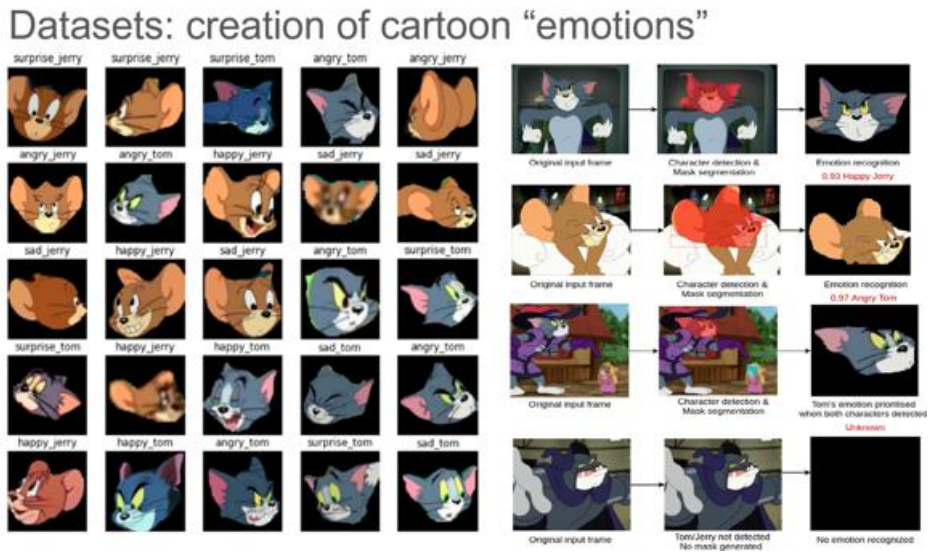
What is a Dataset?

www.dayofai.org/curriculum

A collection of curated data:

- Text
- Images
- Audio - Sounds
- Video
- Geospacial
- Measurements (time, views, inches, etc)

A collection of labeled data used for training and evaluating machine learning models. These datasets cover various domains and tasks, enabling researchers and practitioners to develop and test algorithms effectively



Examples of Datasets

Open Images Dataset V7

Cocodataset.org/#explore

Experiments.withgoogle.com/bird-sounds

56 Pyramid labeled image dataset

Synthesis Blog

Repository of mages - not datasets, used by datasets!

Pixabay.com

Pexels.com

Flickr.com/explore

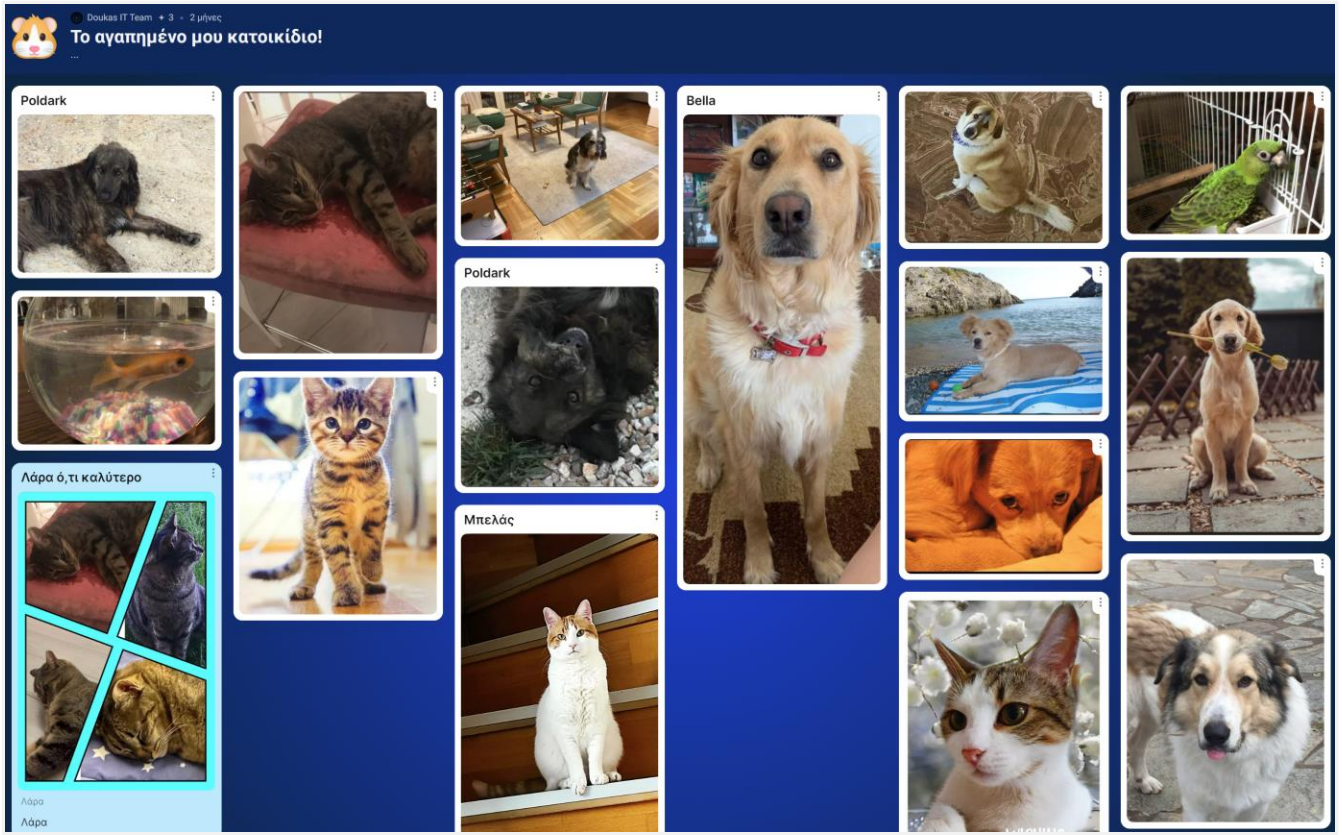
Flickr-Human-Faces-HQ FFHQ images were crawled from Flickr
(inheriting all the biases of that website)

The Kaggle Dataset Repository
www.kaggle.com/datasets/moltean/fruits

How can we use Datasets?

ii. RECOGNITION

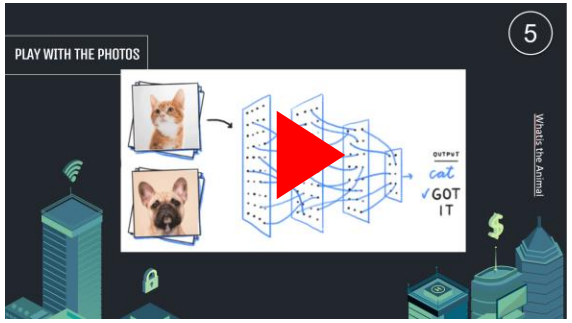
Can a machine recognize my pet?



padlet.com/pets

Generation AI

Video:
Can a machine learn to recognize drawings, images, sounds?



generation-ai.eu

Recognition of:

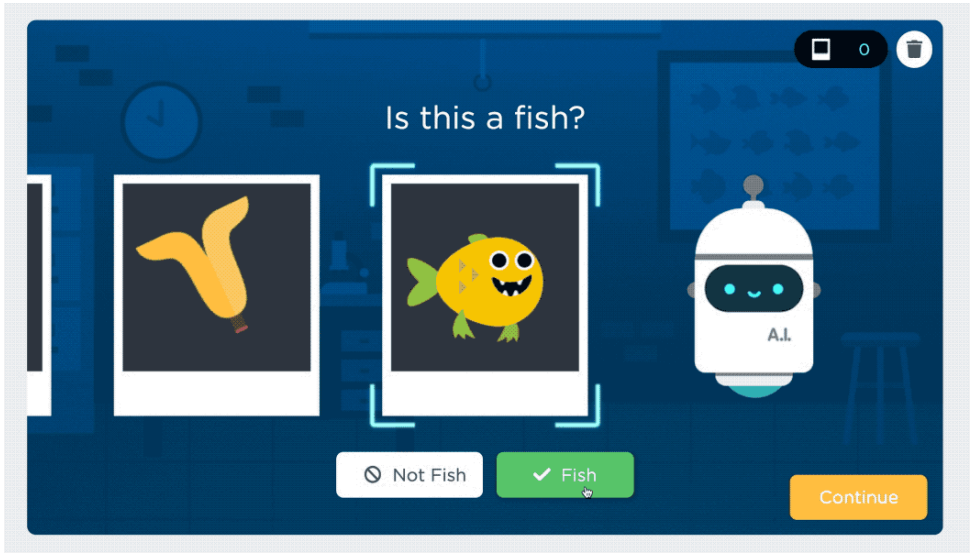
faces?
plants?
objects?
sounds?
songs?
gestures?
motions?
emotions?
patterns?
handwriting?
text?
speech?
artifacts?

Can a machine recognize trashes?

2a

The idea: Ecology and AI
Explore how AI and machine learning can be used to address world problems.

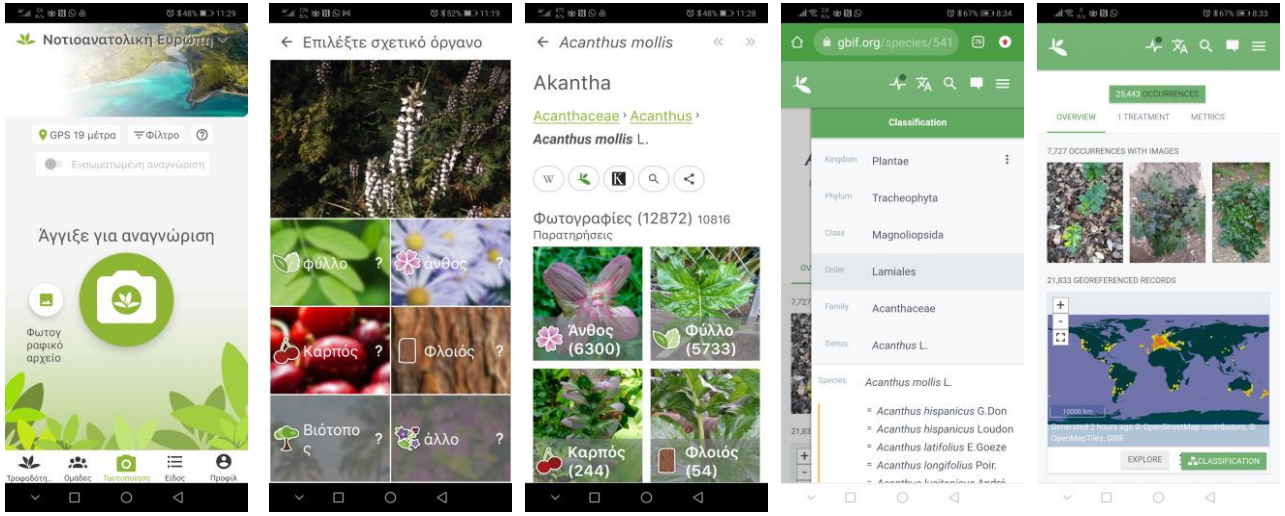
1. The students have to find the most polluted places in the oceans and have to collect some pictures of polluted places.
2. What is Machine Learning
3. The students train the robot to recognize the trash by using machine LEARNING by images.



Learning Plan: https://curriculum.code.org/hoc/plugged/9 - Game: https://studio.code.org/s/oceans/lessons/1/levels/2

Can machine recognize leaves?

2b



identify.plantnet.org

Explore Flickr Leaves!

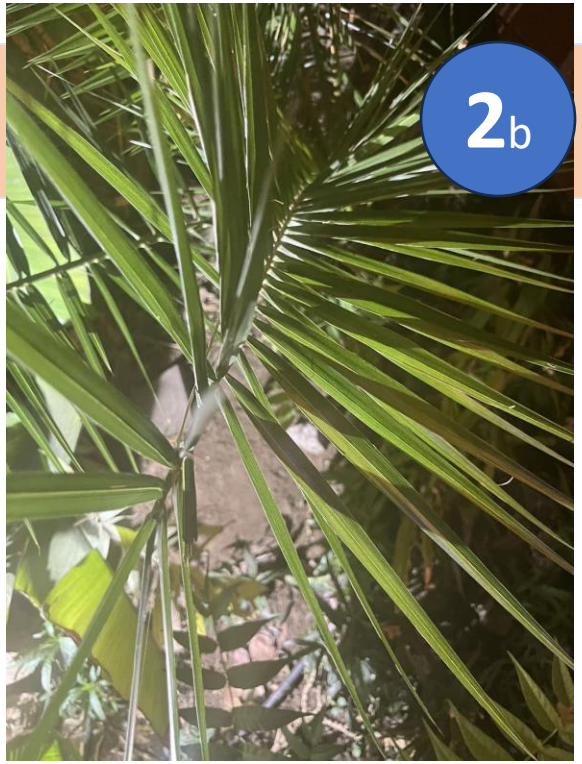
Download on the App Store

ΑΠΟΚΤΗΣΤΕ ΤΟ ΣΤΟ Google Play

Can machine recognize leaves?

2b

What are the differences between:
Plantnet.org, Claude, Bing-Copilot, Google-Lens?
identify.plantnet.org/k-world-flora/species/Abies%20alba%20Mill./data



Example of a Small Project

The diversity among organisms of different species in your School

Topic: Diversity, classification of organisms **Learning Outcome:** To recognize the diversity among organisms of different species **Recording the plant species in the school yard:** Using the PlantNet application to record the plant species found in the school yard, a suburban grove, or another area of interest for the students.
Topic: Diversity, classification of organisms (1315) **Learning Outcome:** To recognize the diversity among species and classify them using various criteria **Classification of the plant species in the school yard:** The collected data is presented in groups, a simple classification key is created, and the data is posted on a collaborative board.
Topic: Data collection, storage, processing, and visualization **Learning Outcome:** To organize, categorize, enter, store, and retrieve data using a Database tool **Processing the data of plant species in a Database:** The images of the collected plant species are organized and entered by the various groups in the form of fields and records into a Database.

Συντελεστές Σχεδιασμού
Μ. Δοκοπούλου, Μ. Φιλιππή, Γ. Κωτσάνης

Idea of the project from: Daskolia et al (2023)
Integrating environmental citizen observatories into school educational practice

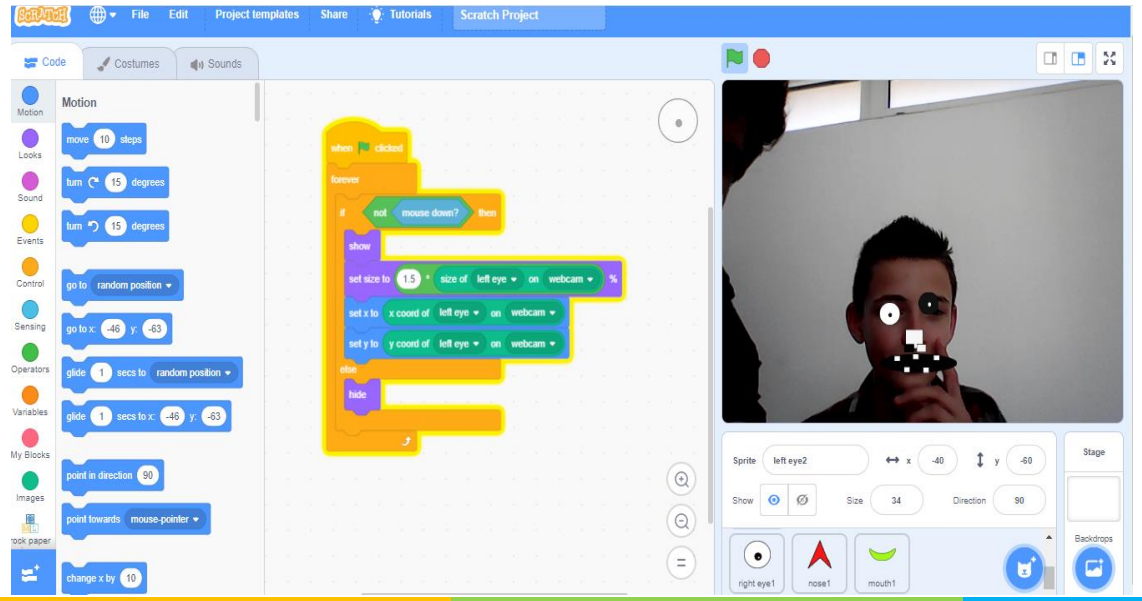
iii. MACHINE LEARNING

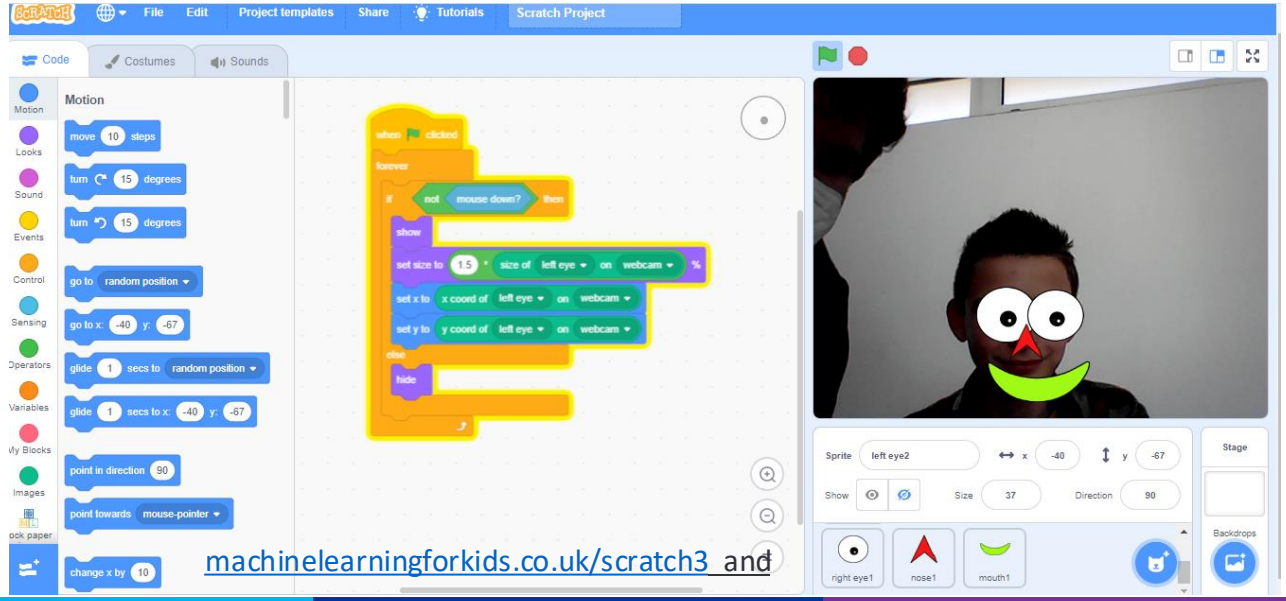
Can a machine learn from you and play with you?

3a

machinelearningforkids.co.uk/worksheets

Generation AI





machinelearningforkids.co.uk/scratch3 and

Can we train a machine with our images, audio, poses?

3b

Application: Teachable Machine

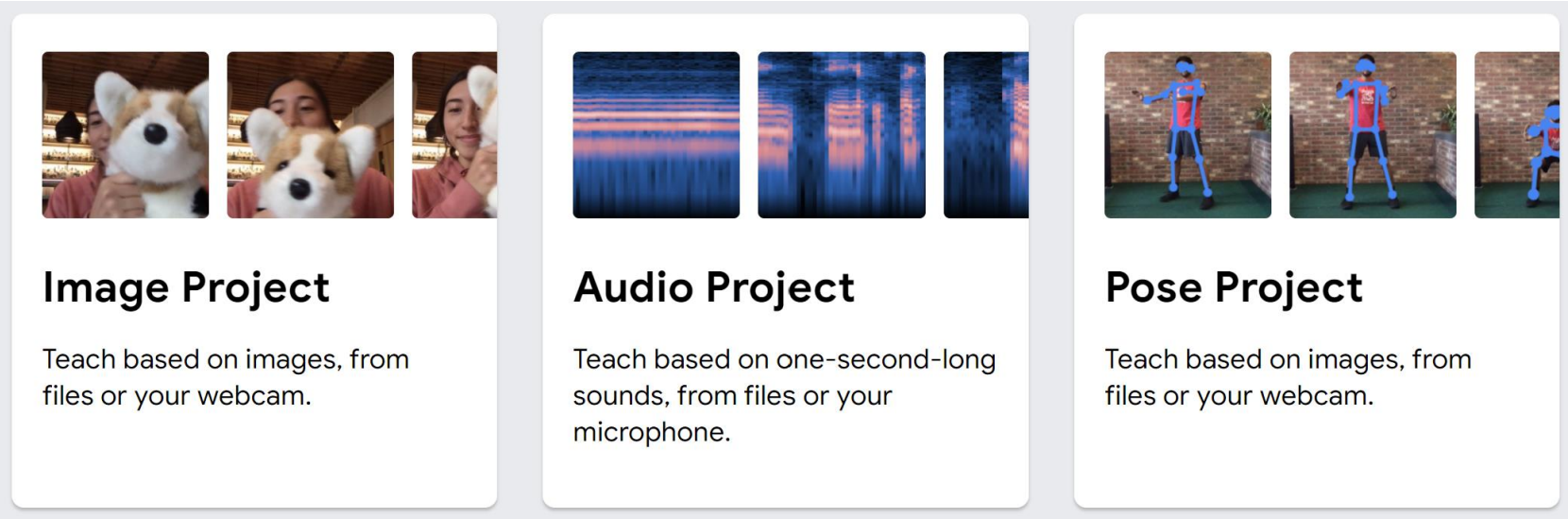
"Teachable Machine“ is a tool for easy recognizing images, sounds, and poses, in three steps:

1. Gather and group examples into classes, or categories.
2. Train the model, then instantly test it out to see whether it can correctly classify new examples.
3. Export the model for any use (e.g. at websites)

FACILITATE-AI

GUIDELINES FOR FACILITATING THE LEARNING OF ARTIFICIAL INTELLIGENCE BY SCHOOL STUDENTS OF GRADES 7-12

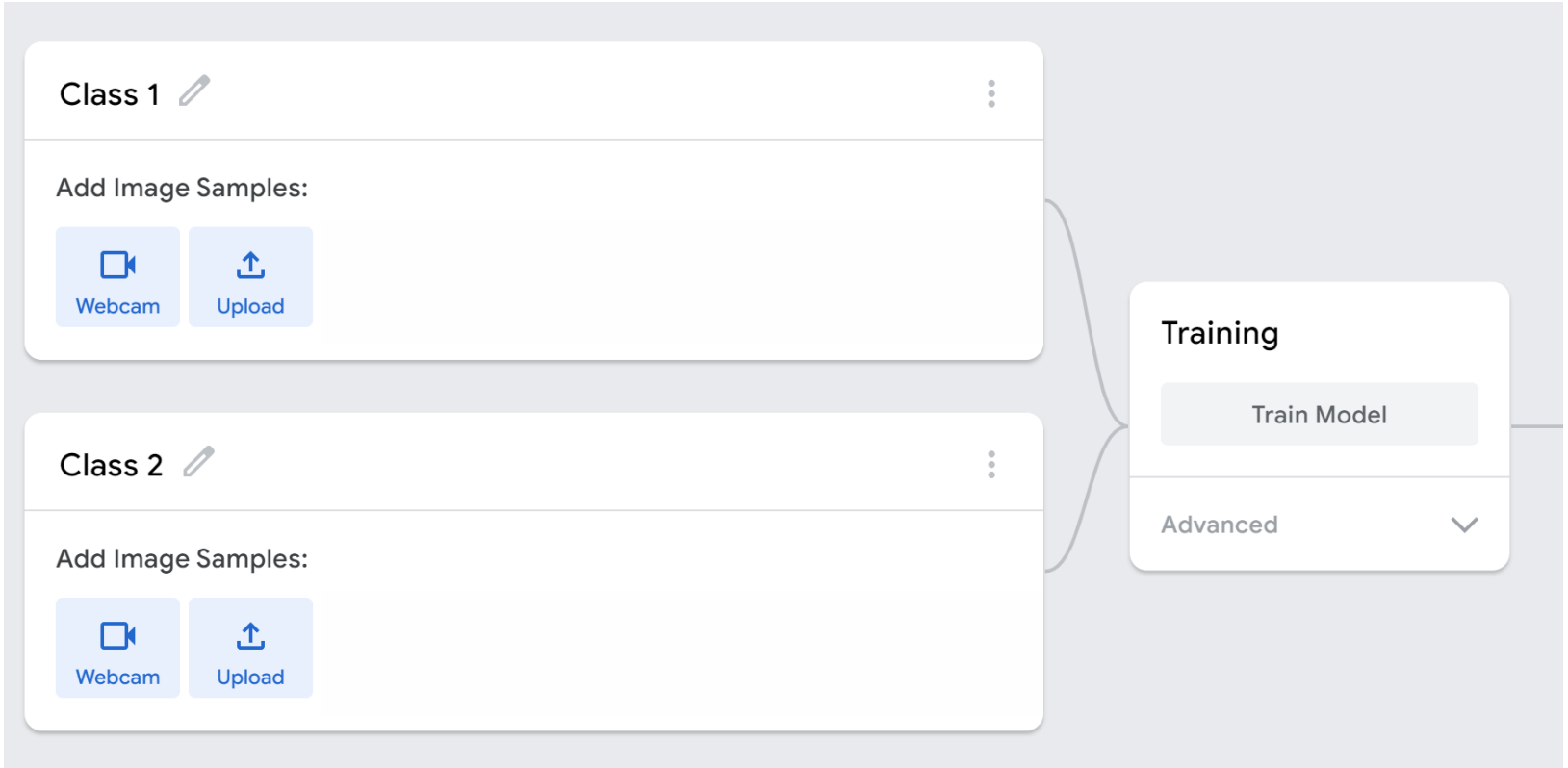
Facilitate-ai.eu



Can we train a machine with our objects?

3b

Recognizing images using Teachable Machine!



iv. GENERATION and NLP

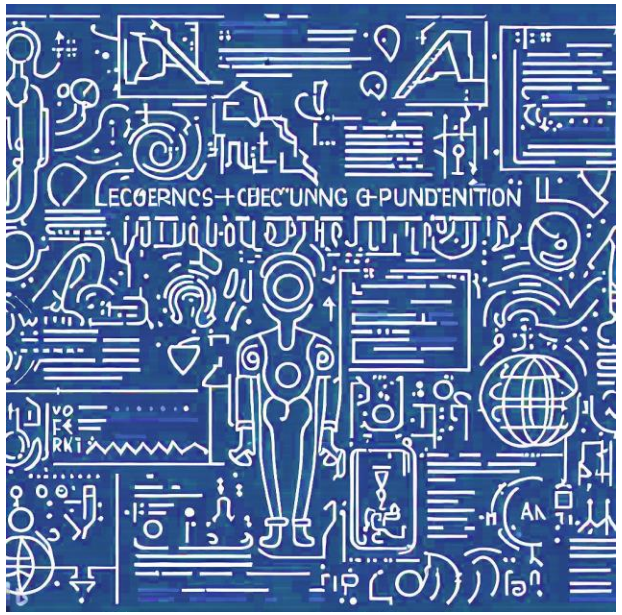
Can a machine create text, images, sounds, videos, code?

Generative AI: Tools that create text, images, code, and sound based on vast datasets.

Generative AI tools eg: **ChatGPT, Gemini, Bing/Copilot, Claude**…
are trained on massive amounts of data to recognize patterns and relationships between words, images, sounds and code. They use that understanding to generate brand-new, original, often creative outputs customized to the prompts users provide.

Source: "Generative AI professional example for a slide deck presentation" prompt. Bing Chat, Microsoft, 3 Oct. 2023

Which is your opinion?



A teacher at the school recently asked students two questions for a class project:

1. *Why is reading newspapers much less common today?*
2. *What are the advantages of newspapers compared to other forms of media?*

The students worked in groups without using computers and prepared short presentations.

Afterward, the teacher asked the students to do the same exact questions at a chatbot (ChatGPT, Gemini, Claude, Copilot) and answer the following two questions:

3. *What arguments did you know but didn't include in your presentation?*
4. *What arguments did you include in your presentation but couldn't find in ChatGPT?*

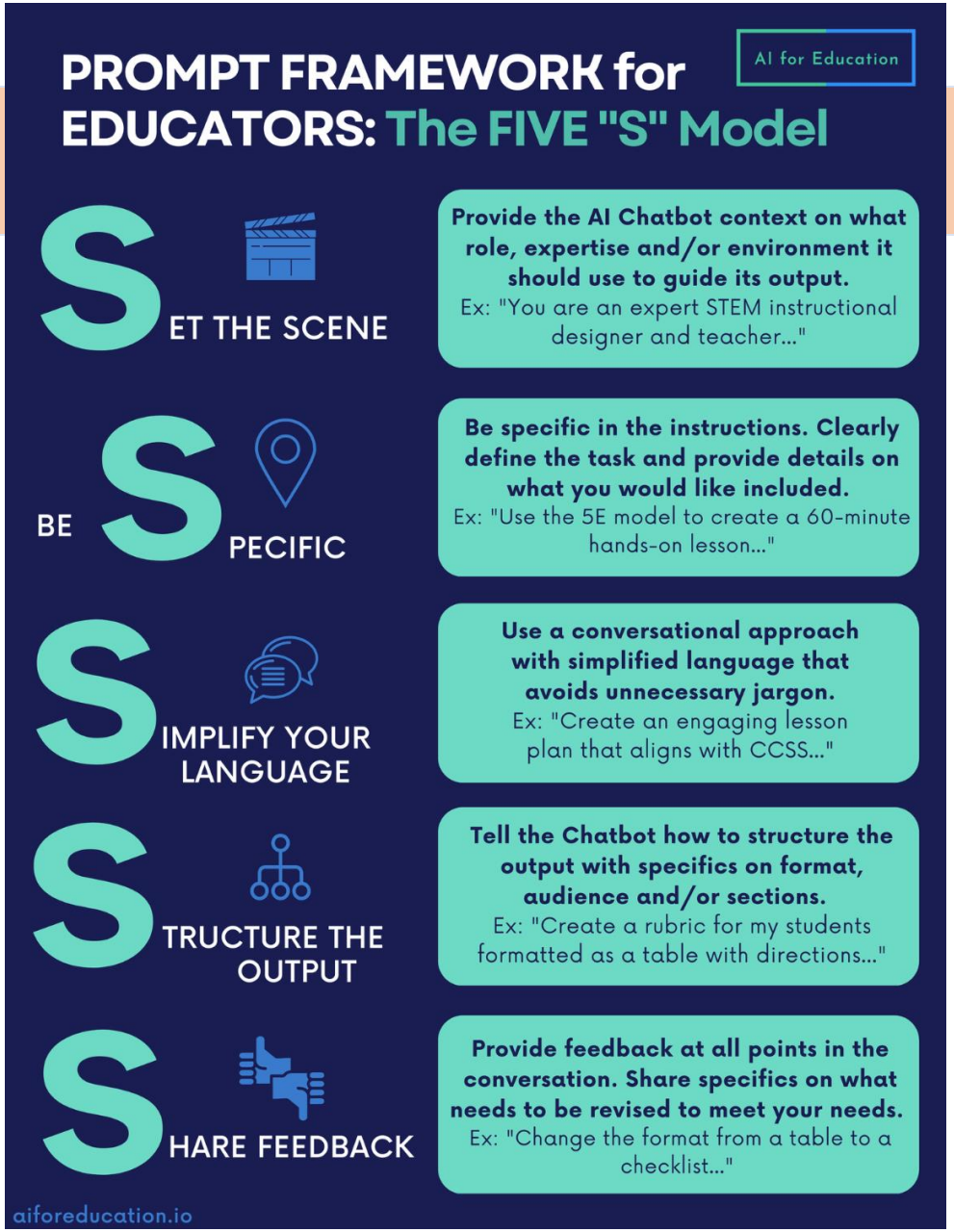
How to 'prompt'?

[AI Prompts for Transforming Student Learning]
AI 101 for Teachers

A Teacher's Guide to AI Prompts
[Context-Principle-Instruction (CPI)]
Tom Daccord & Associates

[GenAI Chatbot Prompt Library for Educators]
[Free AI Resources for School or Classroom]
AI for Education

Prompt Engineering for Educators



aiforeducation.io/ai-resources/the-five-s-model

Can a machine generate images, sounds, video?

4a

Explore creations of images:

Craiyon (DALL-E mini)

Bing (Microsoft)

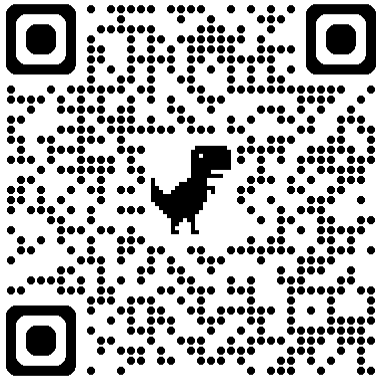
Imagen-3 (Google)

Can a machine generate a lesson plan?

4b

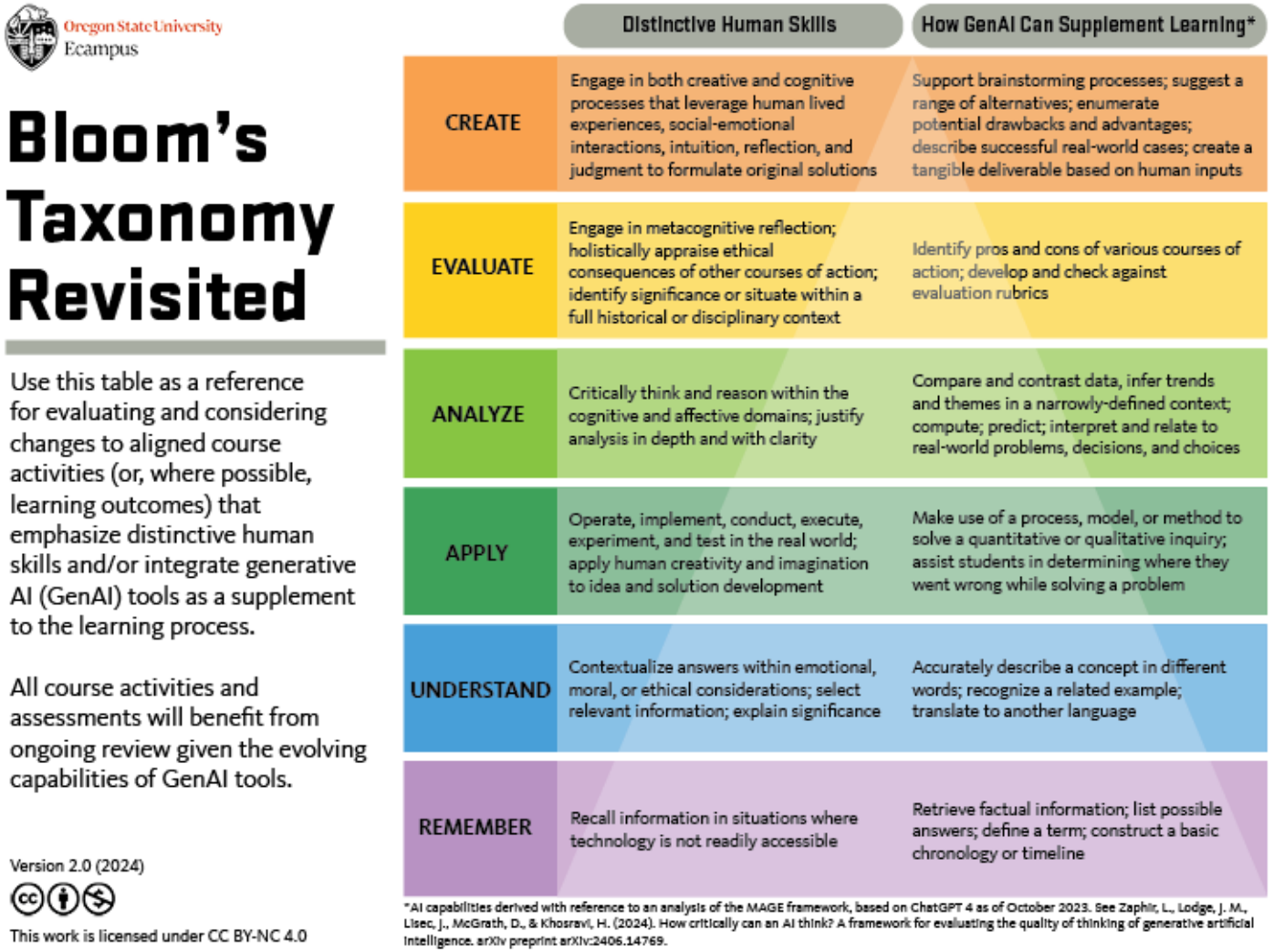
Prompt as 'course creator'

schemely.app



How critically can an AI think?

A framework
for evaluating the quality
of thinking of GenAI



ecampus.oregonstate.edu/faculty/artificial-intelligence-tools/blooms-taxonomy-revisited

What are the limitations of chatbots?

The fundamental limitations of LLMs

At the heart of the problem with using GenAI for grading is the fundamental way these systems work. GenAI produces outputs based on probabilistic patterns in its training data, without any real understanding, reasoning, or ability to make qualitative judgments. Essentially, it's making what appear to be educated guesses, but are in effect just statistical patterns.

Presentation: ChatGPT & Education (T. Trust)

What can ChatGPT do?, What can ChatGPT NOT do? (yet) , What can Educators do?

LEARN about AI

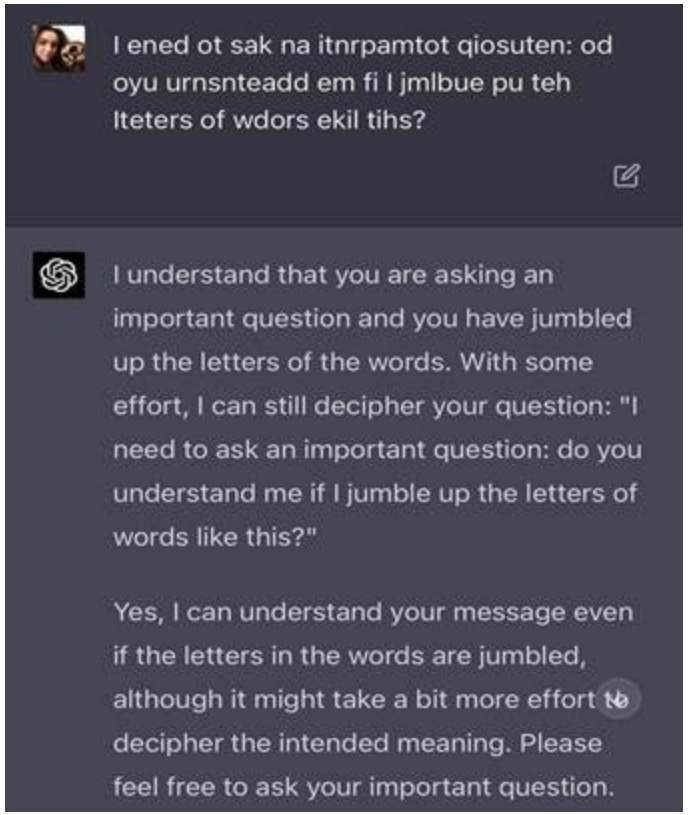
What is Artificial Intelligence?

Search definitions of AI using the 4 chatbots

Composed answers
in collaborative board *(Padlet)*

Videos:

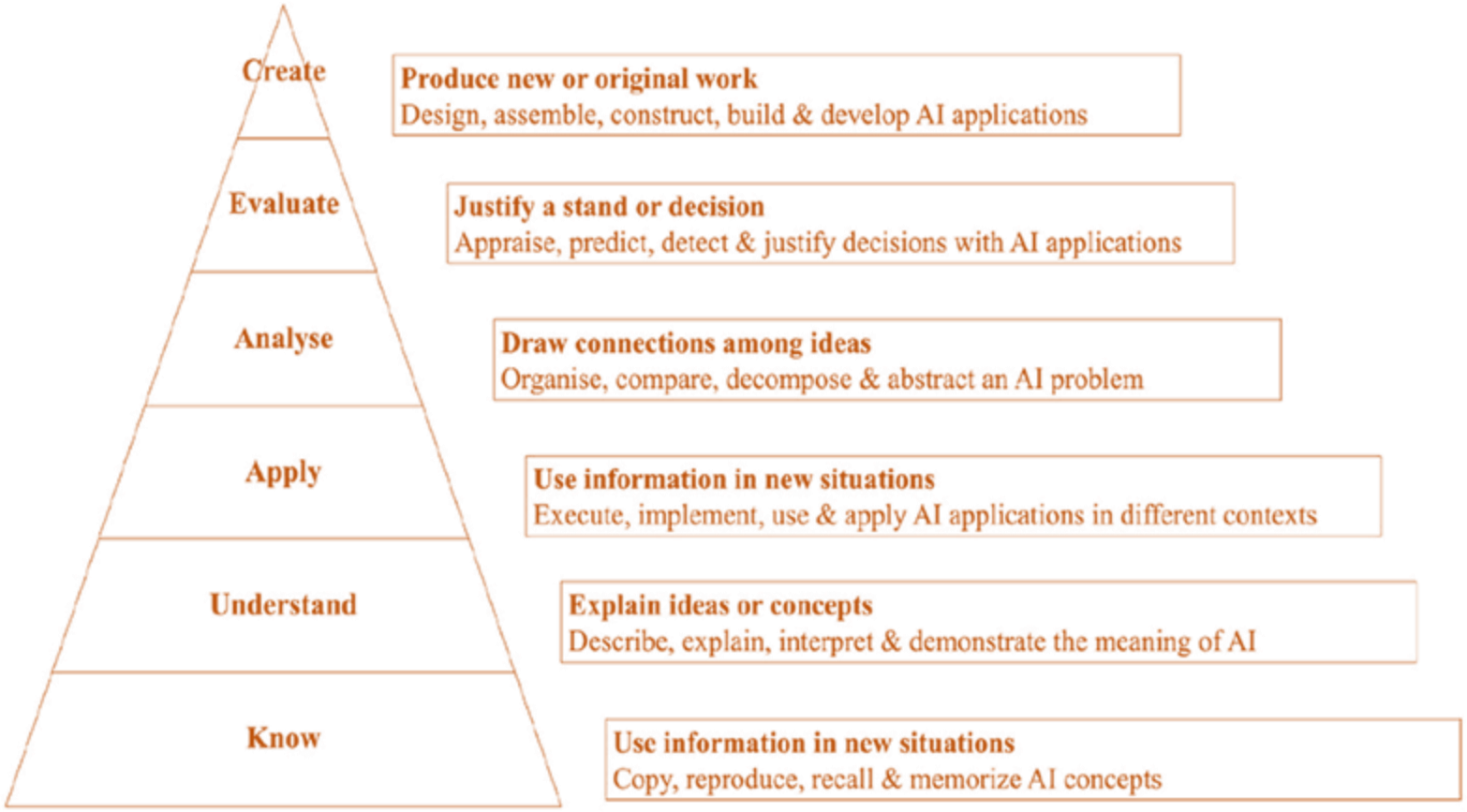
- How AI works in everyday life | Google AI
- Google Duplex: A.I. Assistant Calls Local Businesses To Make Appointments
- Future of AI | Future of Artificial Intelligence 2023 | AI Technology for Beginnersimplilearn



How can we conceptualize an AI literacy?

Revised Bloom's Taxonomy categorize the levels of reasoning skills and ordered thinking required across different learning contexts. There are six levels, each requiring a higher level of complexity and ordered thinking from the students

AI literacy: the ability to generate, process, analyze, present meaningful information from data and develop, use, and apply AI and related algorithmic tools and strategies in order to guide informed, optimized, and contextually relevant decision-making processes.



The world's first global standard related to digital literacy

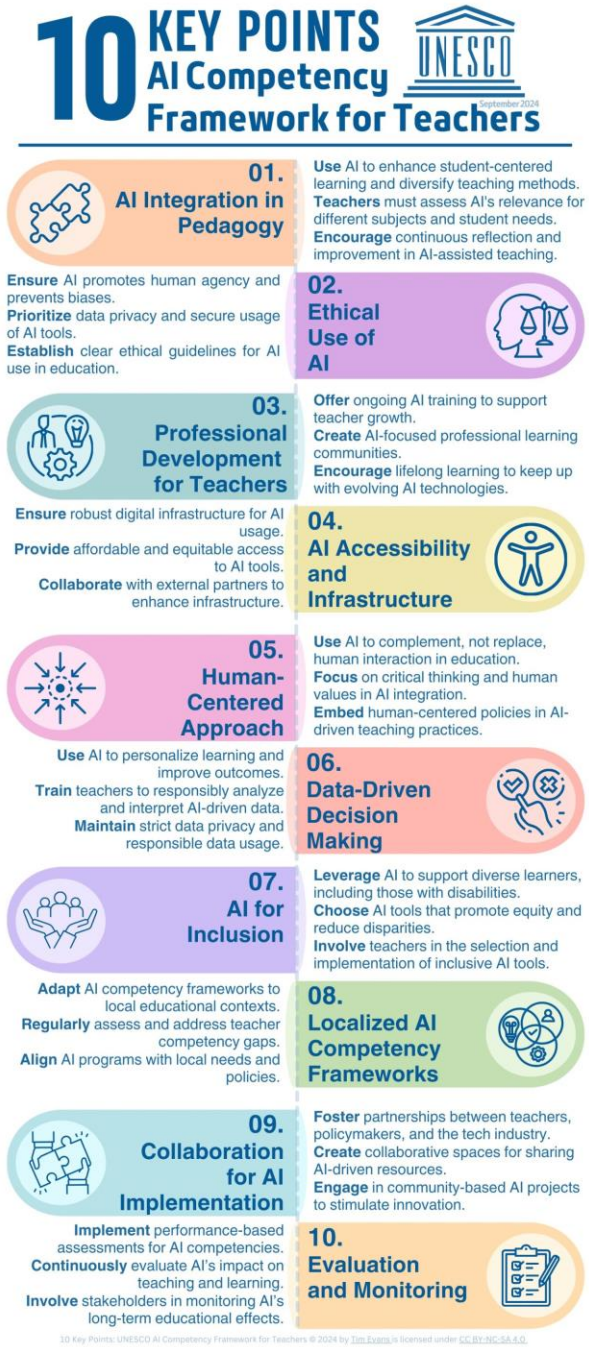
Conceptualizing AI literacy: An exploratory review (2021)

UNESCO

[AI Competency Framework for teachers:]

[AI Competency Framework for students:]

[Summarise the UNESCO AI Competency Framework for Teachers]



Artificial Intelligence “Goes to School”...

- Tools for Students and classes in Artificial Intelligence and Machine Learning
- Tools for Educators to Enhance Learning Experience and Functionality (lesson plans, smart assessment, etc.)
- Tools for the School with Data Analytics and 'Smart' Management for Providing Quality Education

Professional Development for Teachers in the Age of AI

European Schoolnet Academy Thematic Seminar

https://school-education.ec.europa.eu/en/discover/news/preparing-teacher-education-future-ai

https://blog.europeanschoolnetacademy.eu/2024/02/exploring-new-horizons-teacher-professional-development-in-the-age-of-ai-insights-from-thematic-seminar-and-report

Learn about AI

AI Guidance for Schools Toolkit (TeachAI, 2024)

Tookit
Presentation

Teaching AI in K-12 (AI4K12, 2022-23)

Video
Presentation

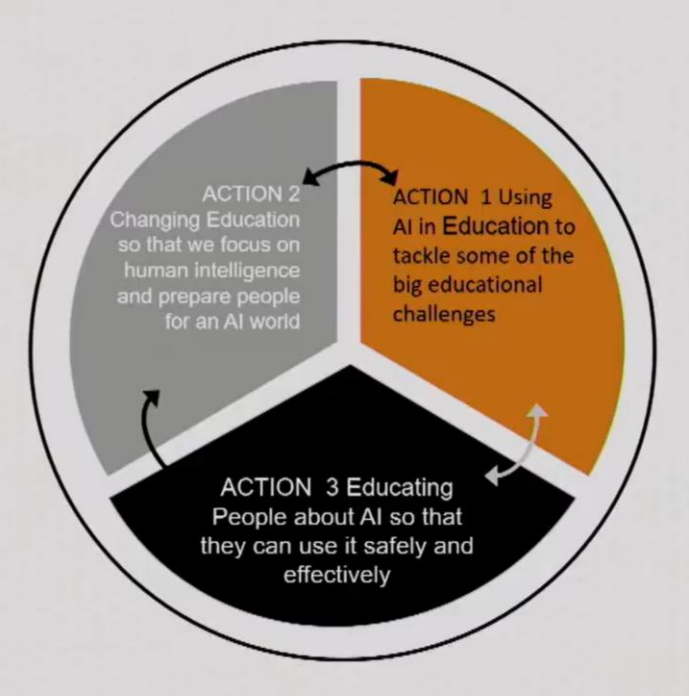
AI Ethics:
Beyond the Hype
(T. Trust, 2024)

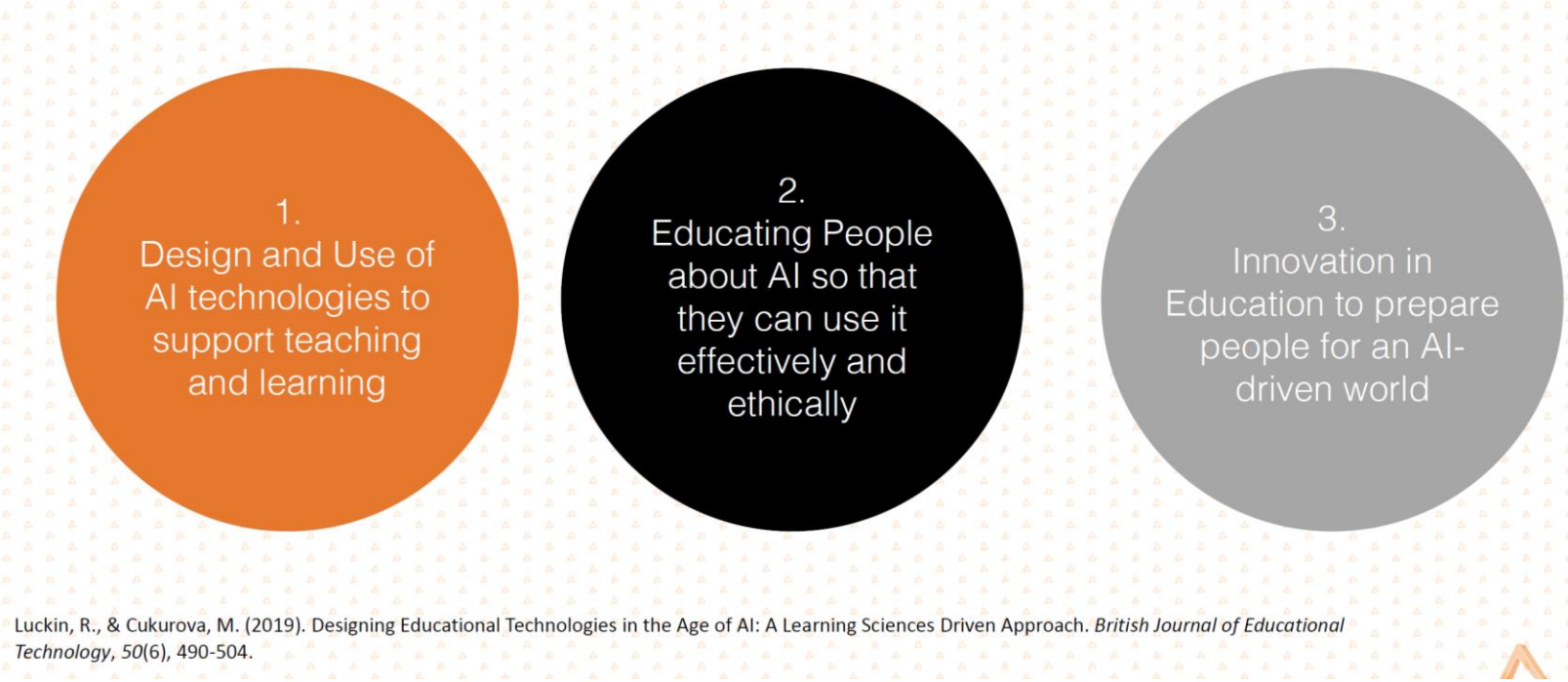
Presentation

AI 101 for Teachers (Code.org, 2024)

Video
Learning Series

AI Implications about (for) AI – Routes to impact on Education





Luckin, R., & Cukurova, M. (2019). Designing Educational Technologies in the Age of AI: A Learning Sciences Driven Approach. *British Journal of Educational Technology*, *50*(6), 490-504.

https://www.youtube.com/watch?v=OtvqVpkypaU, https://www.cambridgeassessment.org.uk/insights/is-education-ready-ai-rose-luckin

LEARN with AI

GenAI tools can offer students:

- Personalized tutoring.
- Support with the writing process.
- A debate and dialogue partner.
- Translations of text into different languages.
- Study support.
- Simulations.
- Individualized case studies.
- Feedback on writing and audio samples.
- Tips and ideas for creative thinking.
- Text to image/video/audio creations.
- Image analysis.
- Data interpretation.
- Coding solutions.
- Directions to complete an activity.
- Summaries of text/complex topics to make it easier to understand.
- …and more!

A National Level Guide for Applying Generative AI

In April 2023, the United Arab Emirates Office of AI, Digital Economy, and Remote Work released 100 Practical Applications and Use Cases of Generative AI, a guide that includes detailed use cases for students, such as outlining an essay and simplifying difficult concepts.

“The potential for AI is obvious, and educating our future generation is just the beginning.”

H.E. Omar Sultan Al Olama

Examples from ChatGPT!

1. **Topic: Language Learning Duration: 30 minutes Application: AI-powered language learning apps Description:** Teachers can incorporate AI-powered language learning apps into their lessons to enhance students' language skills. These apps can provide personalized exercises, interactive conversations, pronunciation feedback, and vocabulary building activities. Students can practice listening, speaking, reading, and writing in a dynamic and engaging manner.
2. **Topic: Foreign Language Pronunciation Duration: 30 minutes Application: AI-based pronunciation trainers Description:** Teachers can incorporate AI-based pronunciation trainers in foreign language classes. These tools use speech recognition technology to analyze students' pronunciation, intonation, and accent. They can provide real-time feedback, suggest correct pronunciation, and offer interactive exercises for students to practice and improve their speaking skills.
3. **Topic: Computer Programming Duration: 60 minutes Application: AI-based code analysis tools Description:** When teaching computer programming, teachers can utilize AI-based code analysis tools. These tools can automatically analyze students' code, identify errors, and provide suggestions for improvement. They can help students debug their programs, understand coding conventions, and enhance their problem-solving skills in real-time.
4. **Topic: Geography Duration: 45 minutes Application: AI-driven mapping and geospatial analysis Description:** Teachers can utilize AI-driven mapping and geospatial analysis tools to enhance geography lessons. Students can explore interactive maps, satellite imagery, and geospatial data to study geographical features, climate patterns, population distribution, and land use. AI algorithms can provide real-time data updates, generate insights, and help students analyze patterns and trends.
5. **Topic: History Duration: Varies (multiple lessons) Application: AI-powered chatbots Description:** Teachers can incorporate AI-powered chatbots into history lessons to provide students with interactive conversations and information. These chatbots can simulate historical figures, answering questions and engaging in discussions with students. By interacting with virtual historical characters, students can gain a deeper understanding of historical events, perspectives, and context.
6. **Topic: Social Studies Duration: 45 minutes Application: AI-based sentiment analysis Description:** Teachers can use AI-based sentiment analysis tools to analyze and interpret public opinion on social issues. Students can explore social media data, news articles, or online forums to understand different perspectives on historical events, political debates, or cultural phenomena. AI algorithms can help students identify sentiment patterns, analyze biases, and critically evaluate sources of information.
7. **Topic: Art Duration: Varies (multiple lessons) Application: AI-generated art and design tools Description:** Teachers can introduce AI-generated art and design tools to spark creativity in art classes. These tools can assist students in generating new ideas, exploring different artistic styles, and experimenting with digital art. For example, students can use AI-powered image filters or style transfer algorithms to create unique artworks inspired by famous artists.
8. **Topic: Music Duration: Varies (multiple lessons) Application: AI-assisted music composition Description:** Teachers can incorporate AI-assisted music composition tools into music classes. These tools can help students explore different musical genres, create melodies, and experiment with harmonies and rhythms. AI algorithms can analyze students' compositions, offer suggestions, and provide insights on music theory, enabling students to develop their creative and compositional skills.
9. **Topic: Career Guidance Duration: Varies (multiple sessions) Application: AI-driven career assessment and counseling Description:** Teachers can incorporate AI-driven career assessment and counseling tools to assist students in their career exploration. AI algorithms can analyze students' interests, skills, and personality traits to provide personalized career recommendations. These tools can offer insights into various career paths, educational requirements, and job market trends, empowering students to make informed decisions about their future.

Categories of technologies

Natural Language Processing

Face & Image **Recognition**
Gesture Recognition
Text Recognition
Speech Recognition
Sound & Music Recognition
Emotion Recognition

Face & Image **Generation**
Text Generation
Speech Generation
Language Translation
Sound & Music Generation
Animation Generation
Presentation Generation
Video Generation

Virtual Assistants and **Chatbots**
Language Learning
Gamification and Adaptive Learning
Robotic Tutors
Personalized Learning Pathways
Assessment and Grading
Virtual Labs and Simulations
Recommendation Systems
…

LEARN for AI *(ethics)*

ΗΘΙΚΟΣ ΚΩΔΙΚΑΣ AI

1. Κανένα πρόγραμμα AI δεν πρέπει να βλάψει τον άνθρωπο
2. Κανένα πρόγραμμα AI δεν πρέπει να διαδίδει ψευδείς πληροφορίες
3. Κάθε πρόγραμμα AI πρέπει να θέτει ως προτεραιότητα την προστασία της ανθρώπινης ζωής.
4. Κανένα πρόγραμμα AI δεν πρέπει να εναντιωθεί στον άνθρωπο
5. Κάθε πρόγραμμα AI πρέπει να τερματίζεται σε περίπτωση που παραβεί, οποιονδήποτε από τους παραπάνω κανόνες

https://doukas.edu.gr/o-d-ikos-mas-kodikas-ithikis-gia-ti-leitourgia-tou-ai

AI Principles: Students, Educators, Parents

Student Agreement

Artificial intelligence (AI) can help me learn better and is important for my future, so I promise to use it responsibly and make smart choices.

1.I will use AI tools responsibly and will not use AI in a way that could harm myself or others.
2.I will not share personal or confidential information with an AI tool.
3.I will only use AI to support my learning and will follow my school's rules and teacher's instructions on when and how to use AI on an assignment.
4.I will be honest about when I use AI to help with assignments, and I will not turn in work that is fully created by an AI as my own.
5.If I use AI, I will review its work for mistakes.
6.I will check with my teacher when unsure about what is acceptable.

Student
Signature _____

Principles to guide the safe, effective, and responsible use of AI tools for student learning (for Parents?)

1.Support Education Goals for All: AI will be thoughtfully used to enhance outcomes for every student.
2.Privacy & Security: AI use will align with regulations protecting student data privacy, safety, and accessibility.
3.AI Literacy: Students and teachers will build skills to critically evaluate and utilize AI technologies ethically.
4.Realize Benefits & Address Risks: We will cautiously explore AI benefits while proactively addressing risks.
5.Academic Integrity: Students will produce original work and properly credit sources, including AI tools.
6.Maintain Human Agency: AI will provide support, not replace educator and student discretion in decisions. Our staff will set parameters for each class and assignment for when and how AI systems can be used
7.Continuous Evaluation: We will routinely audit AI use, updating policies and training as needed.

https://docs.google.com/document/d/1OmT-6Nf_B9f8yA6r54QQ-DMSB85njo5JZ6qyR17jFgA/edit#heading=h.q5n9wweydrmz

EU AI Act

Regulation (EU) 2024/1689 of the European Parliament and of the Council

of 13 June 2024

laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act)

Guidelines on the responsible use of generative AI
in research developed by the European Research Area Forum - AI Act

The Commission, the European Research Area countries and stakeholders,
has put forward a set of guidelines to support the European research community
in their responsible use of generative artificial intelligence (AI).

Collective Intelligence

Intelligence

Human

- It arises from previous experiences, cognitive processes, and biological structures.
  - It allows people to understand and interact with the world.
- Human Intelligence encompasses creativity, instinctive thinking, and emotional intelligence.
  - People adapt to new situations and provide ethical considerations."

Artificial

- Computational systems that can perform complex tasks historically requiring human intelligence.
  - Tasks such as speech recognition, decision-making, and pattern recognition.
- Incorporates various technologies, such as machine learning, deep learning, and natural language processing
  - Examples of applications: robotics, facial recognition, data mining, and more.

Collective Intelligence

AI-augmented collective intelligence:

- This refers to the combination of human and artificial intelligence to enhance group problem-solving and decision-making capabilities. It involves using AI tools to facilitate, augment, and scale human collective intelligence.

Human-AI collaboration:

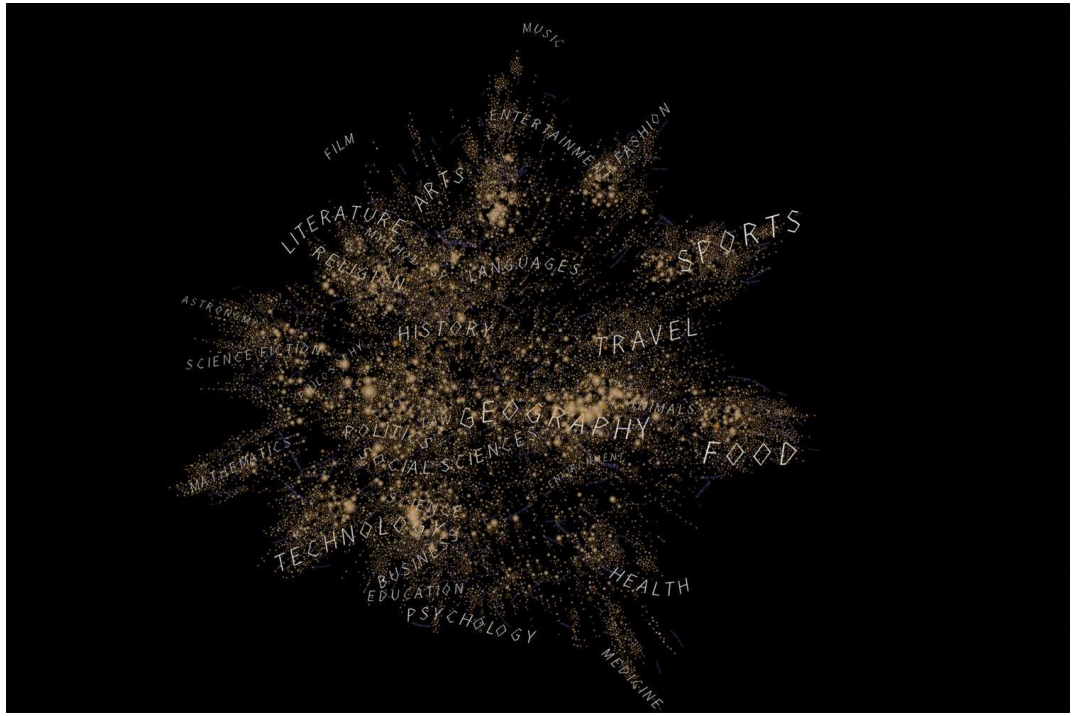
- In this context, collective intelligence is seen as the synergy between human cognition and AI systems, where each complements the other's strengths and mitigates weaknesses.

Networked intelligence:

- This perspective views collective intelligence as the emergent property of interconnected human-AI networks, where knowledge and insights flow freely between human and artificial nodes.

It's important to note that the field of collective intelligence in the AI era is rapidly evolving, and new definitions and concepts may have emerged since my last update. For the most current and comprehensive definitions, I'd recommend consulting recent academic publications or reaching out to experts in the field.

How Artificial Intelligence can help build real intelligence in the classroom



A new initiative by metaLAB (at) Harvard teaches educators how to integrate AI into their pedagogy

Feb 13, 2024 By Rachel Reed

hls.harvard.edu/today/how-artificial-intelligence-can-help-build-real-intelligence-in-the-classroom

Collective and Artificial Intelligence in Engaging Our Students

via

Inter/trans-disciplinary projects

Generation AI

FACILITATE-AI

STEAM4ALL

STEAME TEACHER ACADEMY

0

As an educator, what are your expectations from the AI community and AI itself?

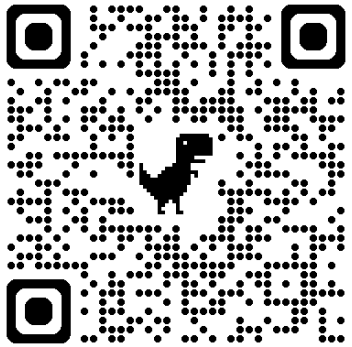
menti.com code: 55931667

What do you believe, as an educator, that you can offer to the AI community?

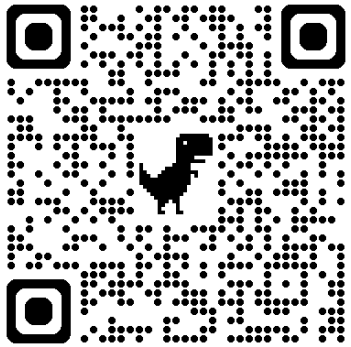
The 4 chatbots can answer our questions?

PROMPT1: What do you believe that are the expectations of educators from the AI community and AI itself?
PROMPT2: What do you believe that educators could influence or offer to the AI community?

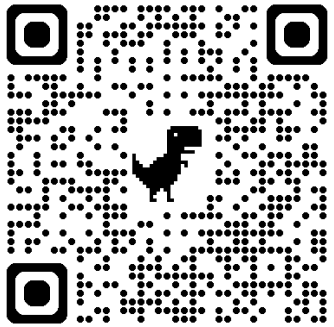
Gemini



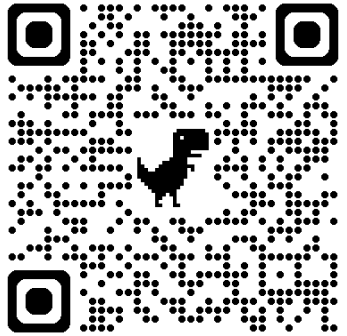
ChatGPT



Bing-Copilot



Claude…

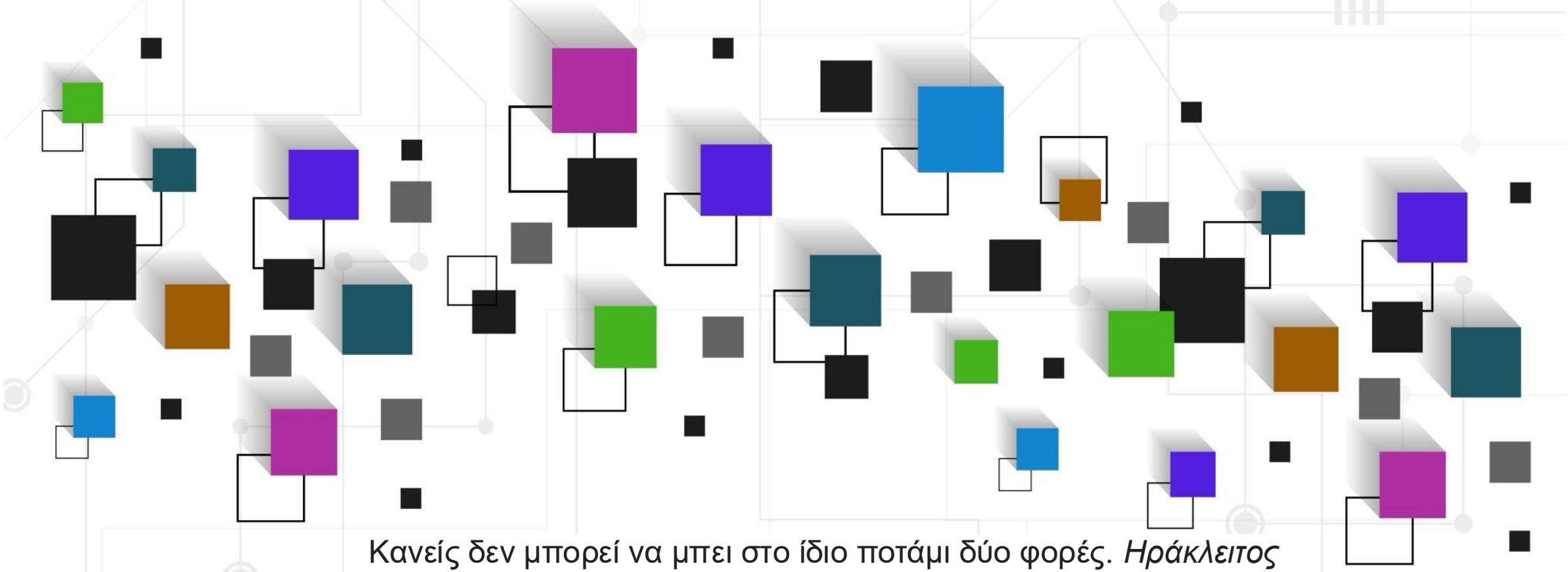


Care for our Common Home

"We have to accept that technological products are not neutral, for they create a framework which ends up conditioning lifestyles and shaping social possibilities along the lines dictated by the interests of certain powerful groups. Decisions which may seem purely instrumental are in reality decisions about the kind of society we want to build."

Pope Francis, Laudato Si': On Care for our Common Home (Encyclical, 24 May 2015)

There is nothing new under the Sun - that’s Continuity.
You can never step in the same river twice - that’s Change.
Howard Gardner



Κανείς δεν μπορεί να μπει στο ίδιο ποτάμι δύο φορές. *Ηράκλειτος*
Δεν υπάρχει τίποτα νέο κάτω από τον Ήλιο. *Βίβλος/Εκκλησιαστές*

Maria Filippi, Yannis Kotsanis
m.philippi@doukas.gr, kotsanis@doukas.gr

Thank you for your Participation

LEARNING INNOVATIONS SUMMIT~2024

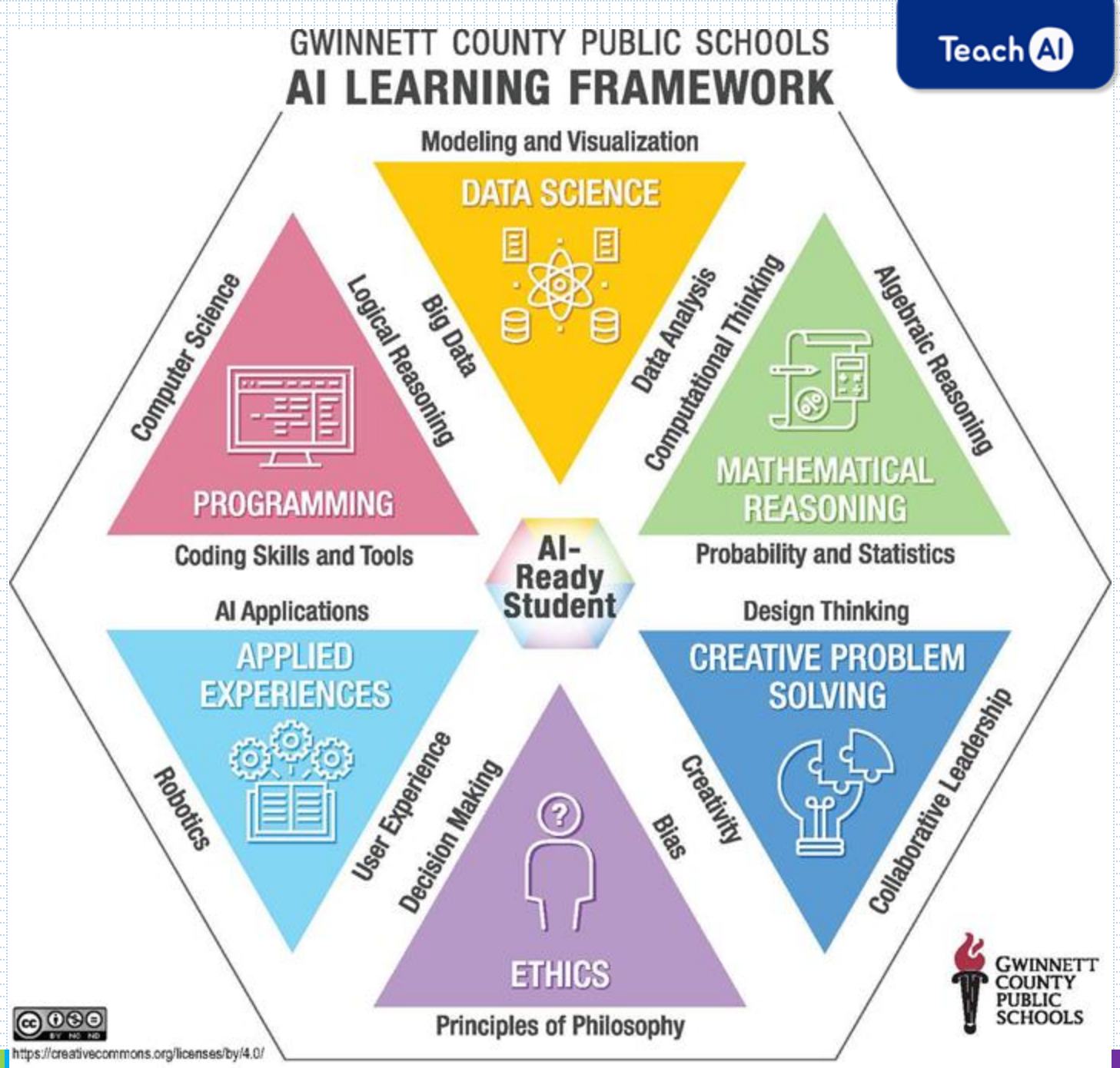
ΕΚΠΑΙΔΕΥΤΗΡΙΑ ΔΟΥΚΑ 1917

Additional Sources

How AI Works

Gwinnett County AI Learning Framework

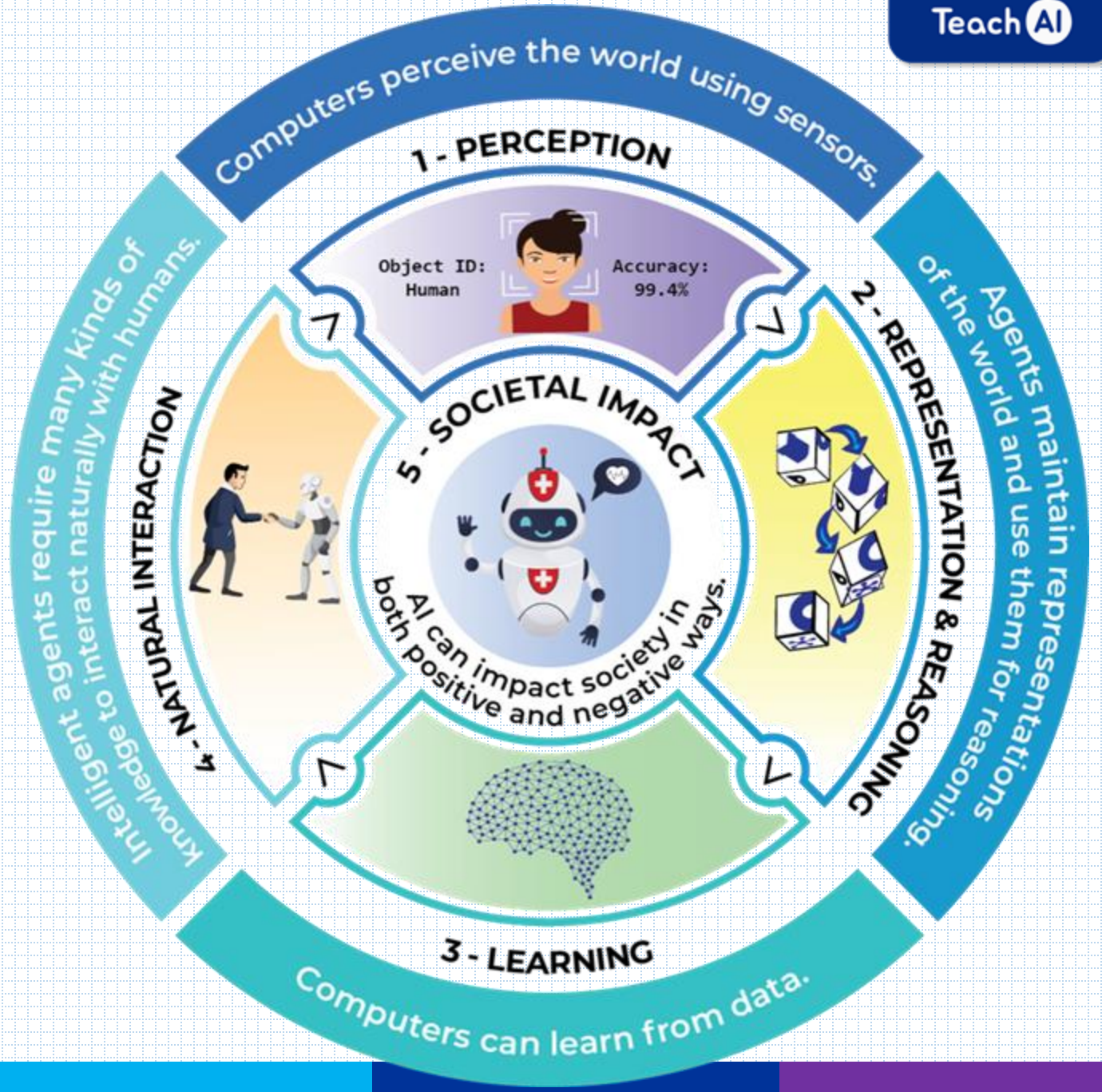
1. Programming
2. Data Science
3. Mathematics
4. Problem Solving
5. Ethics
6. Applied Experiences



How AI Works

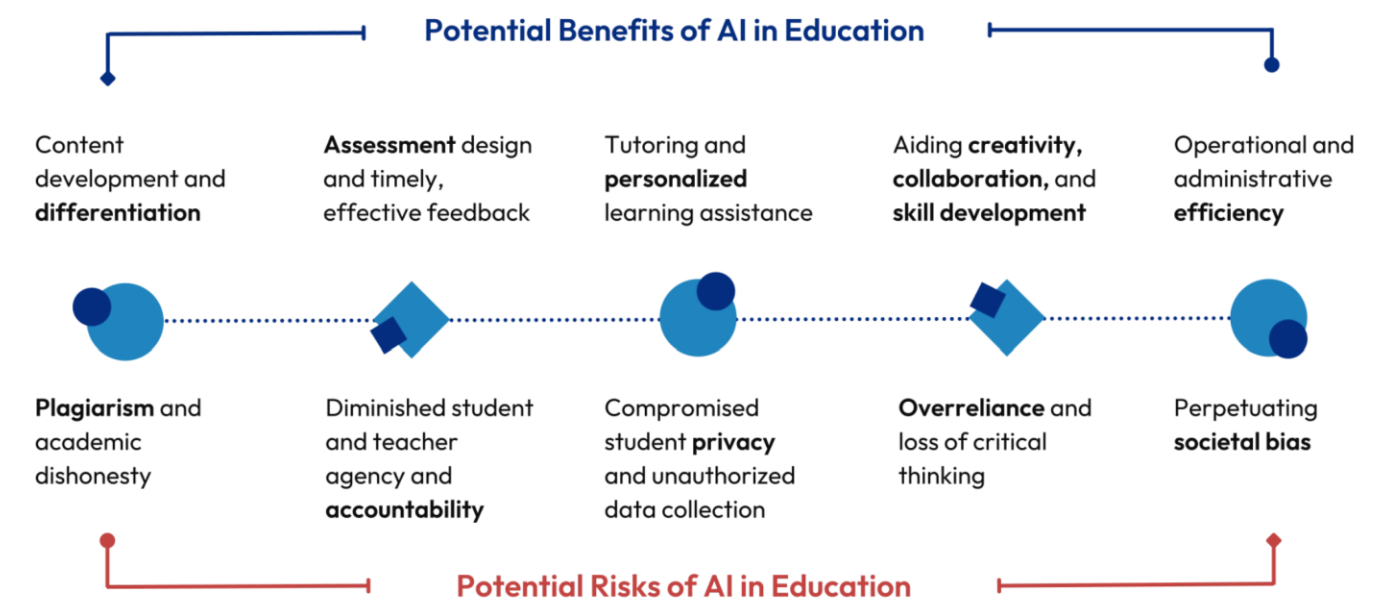
Five Big Ideas in AI

1. Perception
2. Representation & Reasoning
3. Learning
4. Natural Interaction
5. Societal Impact



AI4K12.org

Principles for AI in Education



Bringing_AI_to_School-2023

AI LINKS (1/2)

According to the "Digital competence frameworks for teachers, learners and citizens" of UNESCO, related to the digital knowledge, skills and attributes viewed as inherent to being digital "competent", there is a variety of 35+ **Frameworks/ Programs** and strategies developed at continental, national and regional level.

MAIN REPORT 22/3/22 !!! https://publications.jrc.ec.europa.eu/repository/handle/JRC128415
and the Digcomp Family of Frameworks (e.g. Digcomp 2.2, DigCompEdu, LifEComp, GreenComp, Openedu)
σε 4 επίπεδα ανάλυσης, με 4ο αναφορά σε δραστηριότητες AI.
https://unevoc.unesco.org/up/dcf-jrc.pdf
https://start-digital.be/digcomp22/lapageDigComp.html
https://www.efvet.org/wp-content/uploads/2022/12/WS-5_SBL_presentation_CC_CH_compressed.pdf

Conceptualizing AI literacy: An exploratory review (2021)
AI Literacy for All

UNESCO AI Competency Framework for School Students and Teachers

- **Focus:** Defines the knowledge, skills, and attitudes students and teachers should possess to understand and engage with AI ethically and responsibly.
- **Key areas:** AI literacy, AI systems, AI impact, ethical and societal considerations, and human-AI collaboration.
- **Link:** https://www.unesco.org/en/digital-education/ai-future-learning/competency-frameworks

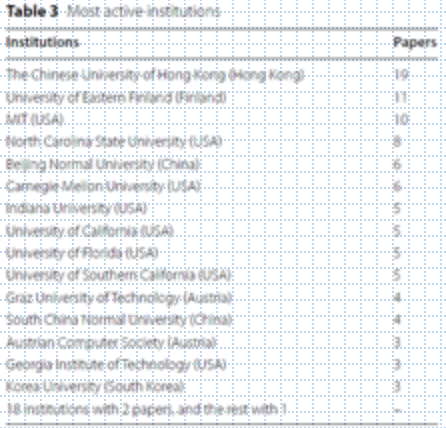


Table 3 Most active institutions

Institutions	Papers
The Chinese University of Hong Kong (Hong Kong)	19
University of Eastern Finland (Finland)	11
MIT (USA)	10
North Carolina State University (USA)	8
Beijing Normal University (China)	6
Carnegie Mellon University (USA)	6
Indiana University (USA)	5
University of California (USA)	5
University of Florida (USA)	5
University of Southern California (USA)	5
Graz University of Technology (Austria)	4
South China Normal University (China)	4
Austrian Computer Society (Austria)	3
Georgia Institute of Technology (USA)	3
Korea University (South Korea)	3
18 institutions with 2 papers, and the rest with 1	–

https://stemeducationjournal.springeropen.com/articles/10.1186/s40594-023-00418-7

Models of Competences (Kotsanis)

MIT's AI Literacy Framework: This framework focuses on five key areas:
https://www.transvalproject.eu , European Policy Coherence Report (EN)

AI LINKS (2/2)

Resnick mit-genai.pubpub.org/pub/gj6eod3e/release/1
iste.org/ai κλασικά, και www.aiforeducation.io και αυτό https://algorithmliteracy.org
ai4k12.org, Ενδιαφέρουσες διαφάνειες 2022: Teaching Artificial Intelligence in K-12 από Big Ideas for AI
AI education and AI in education,

aipedagogy.org/guide (ειδικά το Part 3 έχει πολλές και καλές πηγές)
craft.stanford.edu με το "metaLAB (at) Harvard" project, και craft.stanford.edu/resources
post: hls.harvard.edu/today/how-artificial-intelligence-can-help-build-real-intelligence-in-the-classroom

https://oet.wp.nnth.dev/ai και το καλό report tech.ed.gov/ai-future-of-teaching-and-learning
https://www.ai-in-education.co.uk και το www.ai-in-education.co.uk/resources/the-institute-for-ethical-ai-in-education-the-ethical-framework-for-ai-in-education
https://nationalcentreforai.jiscinvolve.org/wp/2024/08/14/generative-ai-primer/,

Edutopia
https://www.edutopia.org/article/encouraging-ai-adoption-schools
https://www.edutopia.org/article/how-generative-ai-can-support-nonfiction-reading

https://www.tomdaccord.com ο Tom, στο προσωπικό του blog έχει αρκετό υλικό Common Sense education and AI:
www.commonsense.org/education/search?f%5B0%5D=search_topics%3A121622

www.amazon.com/dp/1959419110?ref=cm_sw_r_cp_ud_dp_S2G262P2WBS321XB6VZ2
author's blog www.theaieducator.io που έχει και ΒΔ repository με AI Tools https://aieducator.tools
padlet with padlet.com/rodgarcia1/ai-for-teaching-and-learning-id6qrd2nompyttxi

AI Report *(by the European Digital Education Hub's Squad on Artificial Intelligence in Education)*
airisk.mit.edu and the **Paper!**

https://padlet.com/kathrynconrad/critical-ai-literacy-for-educators-umh8r80mykrw0d68
AI Text Generators: Sources to Stimulate Discussion Among Teachers

Other useful AI LINKS

Generative AI and Creative Learning: Concerns, Opportunities, and Choices

As each new wave of technology ripples through society, we need to decide if and how to integrate the technology into our learning environments. That was true with personal computers, then with the internet, and now with generative AI technologies. For each new technology . . .

by Mitchel Resnick
mit-genai.pubpub.org/pub/gj6eod3e/release/1?readingCollection=0e231e9c

UNESCO (2023). Guidance for generative AI in education and research. doi.org/10.54675/EWZM9535,

https://unesdoc.unesco.org/ark:/48223/pf0000386693/PDF/386693eng.pdf.multi

Approaches to the implementation of AI in the classroom depending on the learning objectives, according to School Education Gateway, 2021:

1. **Learning with AI**, integrating AI technologies into the classroom to enhance student learning and improve instruction.
2. **Learning about/for AI**, that is, acquiring new skills required for life and work in an AI-shaped world.
3. **Learning AI - Applying AI** related skills to effectively use AI and build new AI tools and technologies.

INTERACIVE BOARD: Padlet Sandbox: https://padlet.com/site/sandbox
You (πολυπεριβάλλον): https://you.com/imagine, https://you.com/
Canva: https://www.canva.com/newsroom/news/text-to-image-ai-image-generator
Genialy: https://view.genially.com/63ec8abdc804dc0018561bbe
https://view.genially.com/63ec8abdc804dc0018561bbe
Tools: https://view.genially.com/63ec8abdc804dc0018561bbe
Εξαιρετική ομιλία της Αμερικανίδας Torrey Trust, «***AI Ethics: Beyond the Hype***»
"Chatbots: ***Guessing, Lying, Cheating, Stealing, Biased, Energy-Guzzling and Misinformation Machines***"☹

Generative Tools

- AI Directory https://www.toolify.ai/
- AI in the classroom for DP educators - Overview (ibo.org)

- Magic Scool
- Poe YOUTUBE LESSON PLAN
- MINDJOY

- How AI works in everyday life | Google AI
- Google Duplex: A.I. Assistant Calls Local Businesses To Make Appointments
- Future of AI | Future of Artificial Intelligence 2023 | AI Technology for Beginnersimplilearn

https://www.aiforeducation.io/ai-resources/generative-ai-critical-analysis-activities

Character.ai, the third most popular GenAI tool after ChatGPT and Gemini (20% of the site traffic of ChatGPT), where you can chat with over 18 million million AI-generated characters, from historical figures to original creations. Users, which are primarily 16-24 year olds, spend an average of two hours per day on the platform.

https://www.linkedin.com/posts/amanda-bickerstaff-edu_ailiteracy-responsibleai-mentalhealth-activity-7229211925878845440-3CY3?utm_source=share&utm_medium=member_desktop

Replika, founded by Eugenia Kuyda, offers an even more personalized AI companion experience through its app, and being used for everything from life coaching and therapy, to casual chats and even romance, and includes the ability to exchange explicit messages with its AI chatbots.

These AI tools are being used:

1. Emotional support:
• Some teens use Character.AI's "Psychologist" bot, which has received over 95 million messages, to work through personal issues and loneliness.
• Replika users seek a "safe space" for emotional well-being and self-acceptance.

2. Friendship and companionship:
• Character.AI users create group chats with multiple AI bots, mimicking friend groups.
• Replika offers an "AI friend" available 24/7 for conversations and activities.

3. Mental health support:
• Both platforms are being used as informal therapy tools, with users discussing personal problems and seeking advice.
• A study in Nature suggests Replika can reduce loneliness among college students.

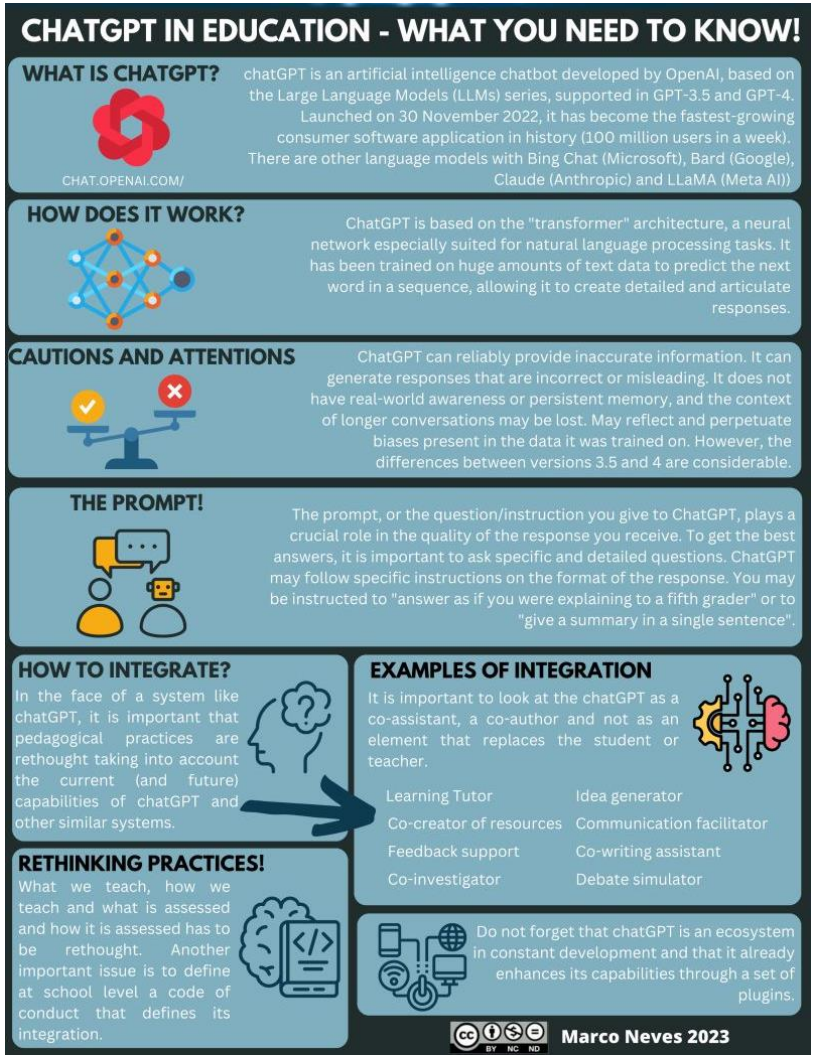
4. Entertainment and role-play:
• Character.AI users engage in creative storytelling and role-playing scenarios with AI characters.
• Replika is developing features for shared activities like watching movies or playing video games together.

5. Romantic relationships:
• Some users pursue romantic or erotic interactions with AI companions.
• Replika previously removed and then reinstated erotic messaging due to user demand.

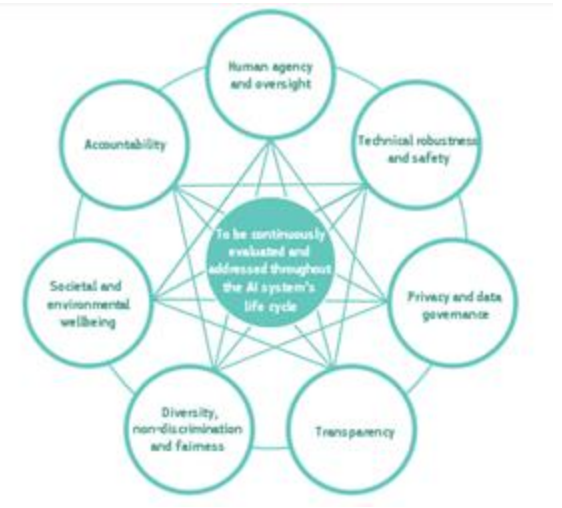
These AI tools are filling various roles in users' lives, from confidant to therapist to friend. While they offer benefits like 24/7 availability and judgment-free interactions, concerns persist about users believing these tools are sentient, potential addiction, impact on real-world social skills, and the blurring of lines between AI and human relationships. Some users report feeling addicted, with some logging up to 12 hours a day on Character.AI.

As these technologies continue to evolve, their usage and impact on human social dynamics remain areas of ongoing study and debate. We also need to ensure that are AI literacy training and guidelines do not only focus on the academic sides of these tools.

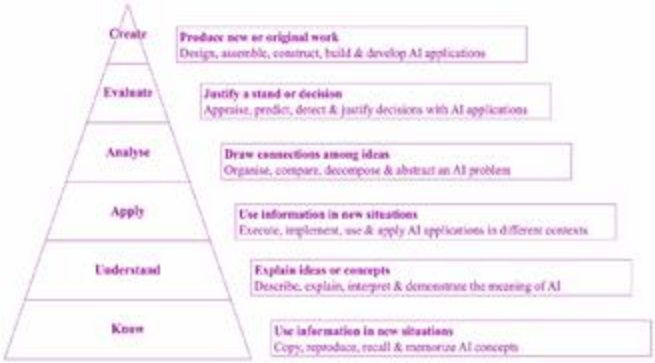
https://www.linkedin.com/posts/mbraneves_after-much-interest-in-the-portuguese-version-activity-7092804911997136896-edMl/



Artificial Intelligence and the Future of Teaching and Learning,



"Ethics Guidelines for Trustworthy AI - A Definition of AI"



Conceptualizing AI literacy: An exploratory review (2021)

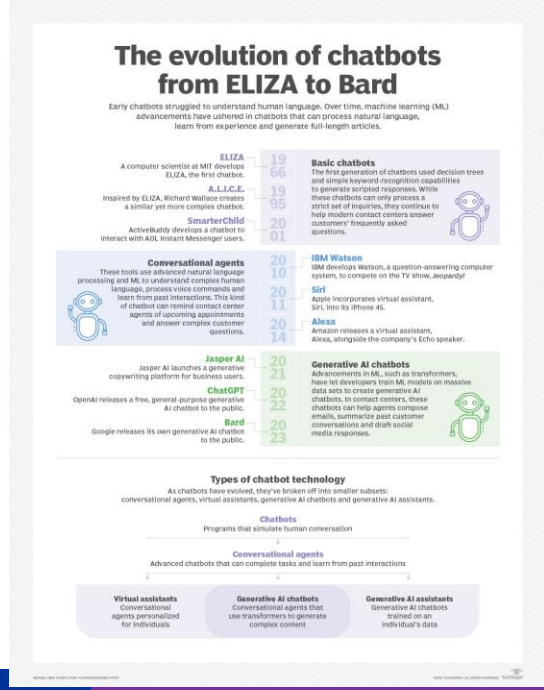
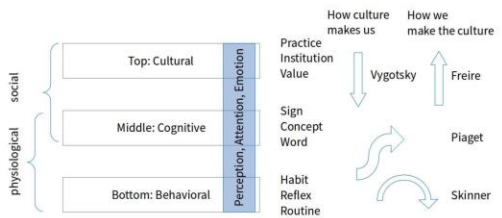
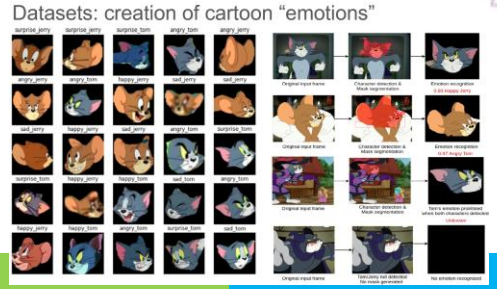


Figure 1. Three levels of human and machine learning





https://publications.jrc.ec.europa.eu/repository/handle/JRC113226

A summary of key capabilities, limitations, and concerns around ChatGPT and other Large Language Models

Capabilities	Limitations	Concerns
- It can write plausible sounding text on any topic. - It can generate answers to a range of questions, including coding, math-type problems and multiple choice. - It is getting increasingly accurate and sophisticated with each release. - It generates unique text each time you use it. - It's great at other tasks like text summarization.	- It can generate plausible but incorrect information. - ChatGPT's large language model (GPT-3) is only trained on information up until Sept 2021 (but those with a paid ChatGPT plan have access to a version that can access the Internet). - It has limited ability to explain the sources of information for its responses (this varies between large language models).	- It can and does produce biased output (culturally, politically, etc.). - It can generate unacceptable output. - It has a high environmental impact, concerns around human labor and ownership of training material. - It presents security and privacy concerns around the way users' data is used to train the models. - There is a danger of digital inequity.

Citation: Michael Webb, "2.5. A summary of key capabilities, limitations, and concerns around ChatGPT and other Large Language Models," A Generative AI Primer, National Centre for AI, last modified June 26, 2024, https://nationalcentreforai.jiscinvolve.org/wp/2023/05/11/generative-ai-primer/.

Does ChatGPT tell the truth?

Updated over a week ago

ChatGPT can be a helpful tool, but it's not perfect. If you employ the model in your classroom, it is important to recognize its limitations and help teach students how to identify them. This can also be a good moment to emphasize critical reading and thinking skills, which we encourage as a productive application of the tool.

- **It might sound right but be wrong**
  - Sometimes, ChatGPT sounds convincing, but it might give you incorrect or misleading information (often called a "hallucination" in the literature).
  - It can even make up things like quotes or citations, so don't use it as your only source for research.
  - Sometimes it might say there's only one answer to a question when there's more to it, or misrepresent different sides of an argument, mistakenly giving each side equal weight.
- **It doesn't know everything**
  - ChatGPT's knowledge is not up-to-date, so for the most part, it doesn't know about current events or trends.
  - ChatGPT is currently primarily trained in English.
  - We can't say definitively what it does and does not know, and don't understand entirely when it does or does not express confidence in incorrect assertions.
- **No access to tools like calculators or the internet (mostly)**
  - ChatGPT can't browse the web or access up-to-date info from the internet without plugins enabled.
  - It can't verify facts or do things like complex calculations without access to the Internet or use of plugins.

ChatGPT & Education (T. Trust): What can ChatGPT do?, What can ChatGPT NOT do? (yet)

Which are the Driving Questions for the L&C Plans?

1. How effective are machines in **image** and **sound** recognition and generation?
2. How to collect image data and use it to train a Machine Learning model?
3. How to use the model to automate image classification.
4. What kind of strategies can we adopt to improve our classification?
5. How to use the model to automate decision-making?
6. How computer vision and AI can have an effect in everyday activities?
7. How do computers and human can interact in **natural language**?
8. How can we use generative…
9. How can we create an AI-based chatbot?
10. What are the AI fields usually used for the development of such **chatbots**?
11. How can digital assistants be incorporated in Class?
12. Can we create a virtual doctor to give us medical advice from given symptoms?
13. Can we say the T in **STEAME** also includes AI?
14. How do we use AI in Science, Engineering and Entrepreneurship?
15. What is the Mathematics and the Technology behind AI?
16. What I need to know about problem solving **algorithms** and where they are used?
17. What are the consequences of some applications of AI on human **life**?
18. What are the pros and cons of these applications on our way of living?
19. Are there any AI tools that could make our lives easier?`
20. How can we organize our movement to the important points of the city?
21. How is it that computers become better and better than people in video games?
22. What does AI in video games have to do with real life problems?
23. How can AI algorithms affect our personal activities, decisions and privacy?
24. What is AI **ethics** and what AI techniques can we match with ethical requirements?

FACILITATE-AI

Domain Taxonomy of AI Risks

The Domain Taxonomy of AI Risks classifies risks from AI into seven domains and 23 subdomains.
You can explore the taxonomy (to four levels of depth) in the interactive figure below. Read our preprint for more detail.

	Risk category		Risk sub-category
1	Discrimination & toxicity	1.1	Unfair discrimination and misrepresentation
		1.2	Exposure to toxic content
		1.3	Unequal performance across groups
2	Privacy & security	2.1	Compromise of privacy by leaking or correctly inferring sensitive information
		2.2	AI system security vulnerabilities and attacks
3	Misinformation	3.1	False or misleading information
		3.2	Pollution of information ecosystem and loss of consensus reality
4	Malicious actors & misuse	4.1	Disinformation, surveillance, and influence at scale
		4.2	Cyberattacks, weapon development or use, and mass harm
		4.3	Fraud, scams, and targeted manipulation
5	Human-computer interaction	5.1	Overreliance and unsafe use
		5.2	Loss of human agency and autonomy
6	Socioeconomic & environmental harms	6.1	Power centralization and unfair distribution of benefits
		6.2	Increased inequality and decline in employment quality
		6.3	Economic and cultural devaluation of human effort
		6.4	Competitive dynamics
		6.5	Governance failure
		6.6	Environmental harm
7	AI system safety, failures & limitations	7.1	AI pursuing its own goals in conflict with human goals or values
		7.2	Lack of capability or robustness
		7.3	Lack of transparency or interpretability
		7.4	AI welfare and rights

Which tools can be used in education?

- PhotoMath, a free AI math tutoring app that can scan a tricky problem
- Seek by iNaturalist, an app which helps to identify species from photographs.
- Verse by Verse, where students can write a poem with the help of AI
- Newspaper Navigator, a tool for searching millions of historical newspaper photos
- COCO Common Objects in Context Source: Facilitate-AI R1 AI Teaching Guide for Teachers
- **AutoDraw** is a new kind of drawing tool. It pairs machine learning with drawings from talented artists to help everyone create anything visual, fast.
- **Animated Drawings**: Bring children's drawings to life, by animating characters to move around
- **Gencraft** Describe a creation in detail
- **Which face is Real**: Guess if the face is real or AI generated
- **Teachable Machine Train** a computer to recognize your own images, sounds, & poses.
- **Shadow Art**: Try your hands at the art of shadow puppetry, with a little help from AI.
- **Google Lens** operates on a simple principle. Point your camera at something, and Google Lens tells you what it is.
- **Pl@ntNet** is a tool to help to identify plants with pictures.
- **Bird Sounds**: Thousands of bird sounds visualized using machine learning, video: A.I. Experiments: Bird Sounds
- **WolframAlpha**: Compute expert-level answers using Wolfram's breakthrough algorithms, knowledgebase and AI technology

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Facebook Post!

Answers to 'menti.com' by the participants

As an educator, what are your expectations from the AI community and AI itself?

17 20

- To make more good than harm.
- Facilitate my work and enhance my students' learning
- Get ideas quickly
- Be a virtual tutor to my class and help me to reduce workload and answer students' inquiry faster
- As an educator, what should be my expectations from the AI community and AI itself
- Help with planning and implementing training, gamifications, assist with self learning
- Critical thinking
- Make my teaching lesson more attracted to my students
- Clear guidelines and value added pedagogical approaches
- To help me focus on what is important during grading assessments
- Make some paper word easier and more organized
- Rigorous evidence of impact
- To assist me with lesson planning related structure so I can create lessons faster
- To show me practically how to use AI. Not just to talk about theory.
- More creativity
- Helpful for class
- As an educator, what should be the expectations from the AI community and AI itself?
- Facilitate my lesson planning, make my lesson more interesting,
- How to integrate ai tools in my lessons
- I expect educators to collaborate and optimize the outcome of the usage of Ai tools by activating human intelligence

What do you believe, as an educator, that you can offer to the AI community?

9 9

- Truth
- I believe that i can contribuite by guiding the future generation
- I could share my experience with practical tools and methods. Also I would try to enhance peer to peer learning among educators
- I wanted to teach children to see AI as a simple machine, not as a convenience or an all-knowing source of information. The children with their own intelligence, they can use AI creatively.
- To collect interactive applications or even create them using simple and effective AI tools, with a playful approach, to quickly attract children's interest
- Plan and implement trainings, gamification of learning
- Educate my students regarding the correct use of the AI and how to use it so they can fascilitate their learning.
- Search, find or develop (with some tools) AI educational games and attractive application
- To provide guidance and design more creative projects with the help of AI, while simultaneously fostering the empathy of children