

Implementation of technology and innovations in education

“It would take off on its own, and re-design itself at an ever increasing rate.”

- Stephen Hawking

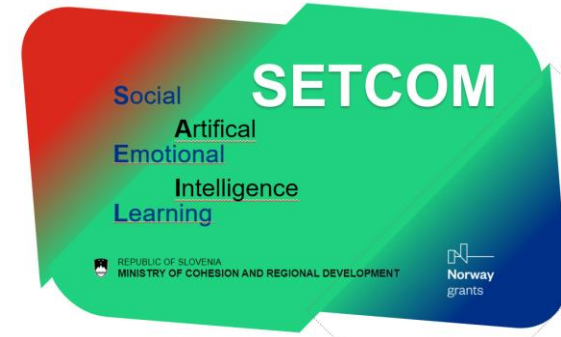
Alenka Lipovec

Faculty of Education, Faculty of Science and Mathematics, University of Maribor

eTwinning conference, Zagreb, 10th November 2023



E-UM
Interaktivna učna gradiva



1980

2003

2013

2020

2021

2022





Today

Digital Transformation in Schools

Cutting-edge Technology

Technology Traps



Educational Research and Innovation

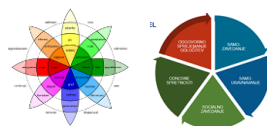
Is Education Losing the Race with Technology?

AI'S PROGRESS IN MATHS AND READING



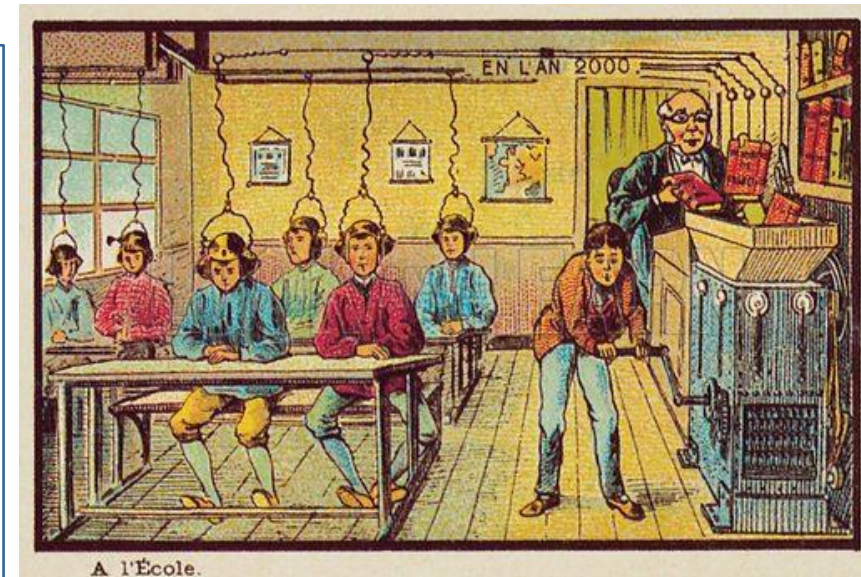
1. Reinforce **basic CS skills**

2. Develop competence for **working with AI.**





Digitalisation in schools is a process of empowering **teachers** to make sovereign, confident, critical and responsible **decisions** about **when, how and if** to use technology in a meaningful way.



1899 "At School in the Year 2000"

<https://www.lookandlearn.com/history-images/M260732/At-school-in-the-year-2000>



AI in Schools:

Swallowing the Future or Spitting Out Progress?



AI Unveiled: What Exactly Is AI?





"the development of devices that behave as if they possessed intelligence" (McCarthy, 1955).

...

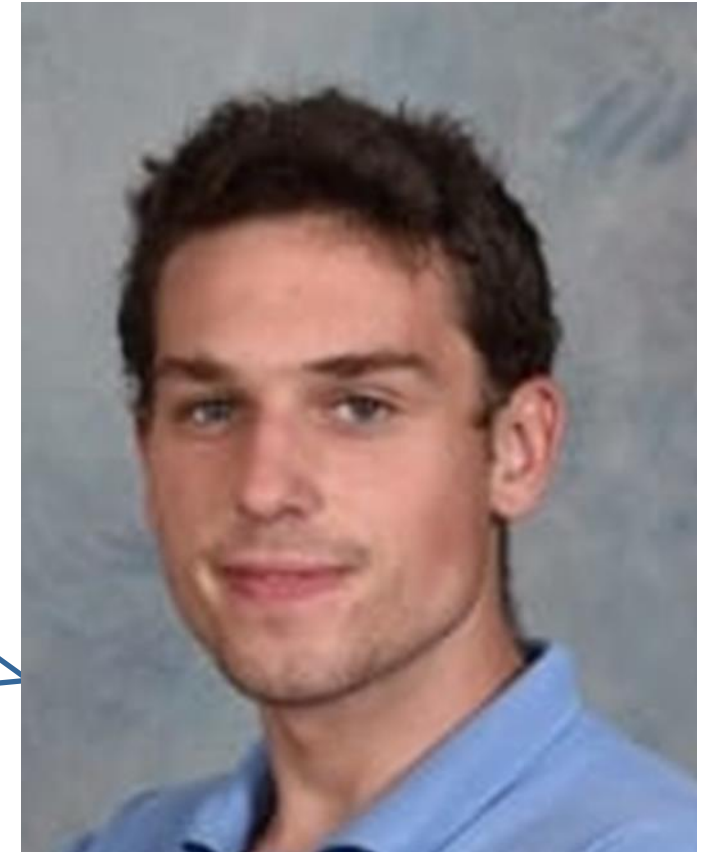
Artificial intelligence is the ability of a machine to mimic human qualities such as thinking, learning, planning and creativity. Artificial intelligence enables technical systems to sense the environment, process what they sense and solve the problem, acting in accordance with a specific goal. AI-based systems can, to a certain extent, autonomously adapt their behaviour by analysing the effects of their previous actions (EU Commission, 2023).



AI refers to **systems** that can **mimic human cognitive and emotional functions**. Like humans, AI is **capable of learning autonomously** from data and, as a result, adapting to new situations.

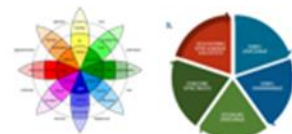
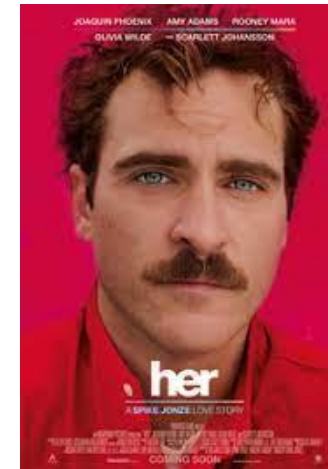
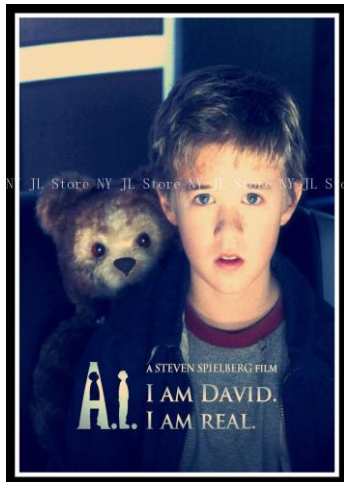
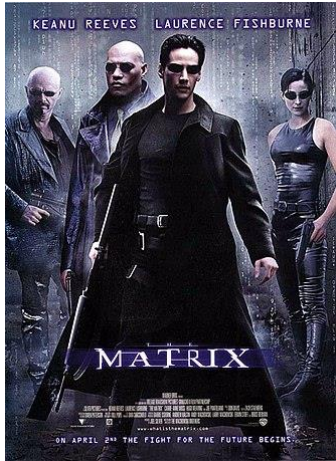


**The AI Range:
How Diverse Is AI?**





strong/general /broad/self-aware/superintelligent/concious AI DOES NOT EXIST





Narrow AI

photomath
smart camera calculator

Google Maps


Google

Office

DeepL

orange




FACEBOOK 

Meta


TikTok


amazon


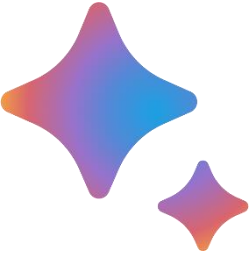
X 

NETFLIX

You Tube

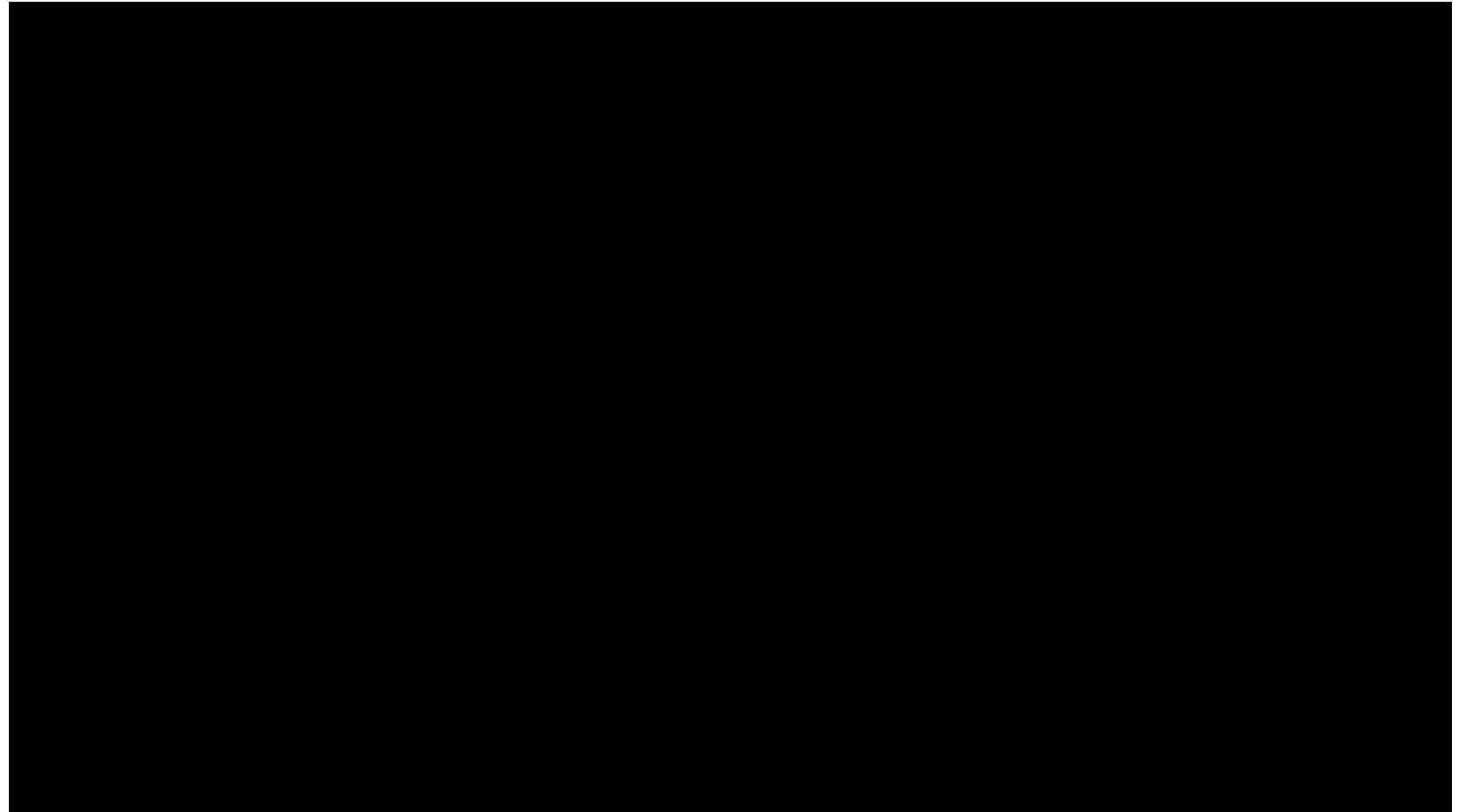
 Bing

 perplexity



Narrow AI in robots / humanoid or not



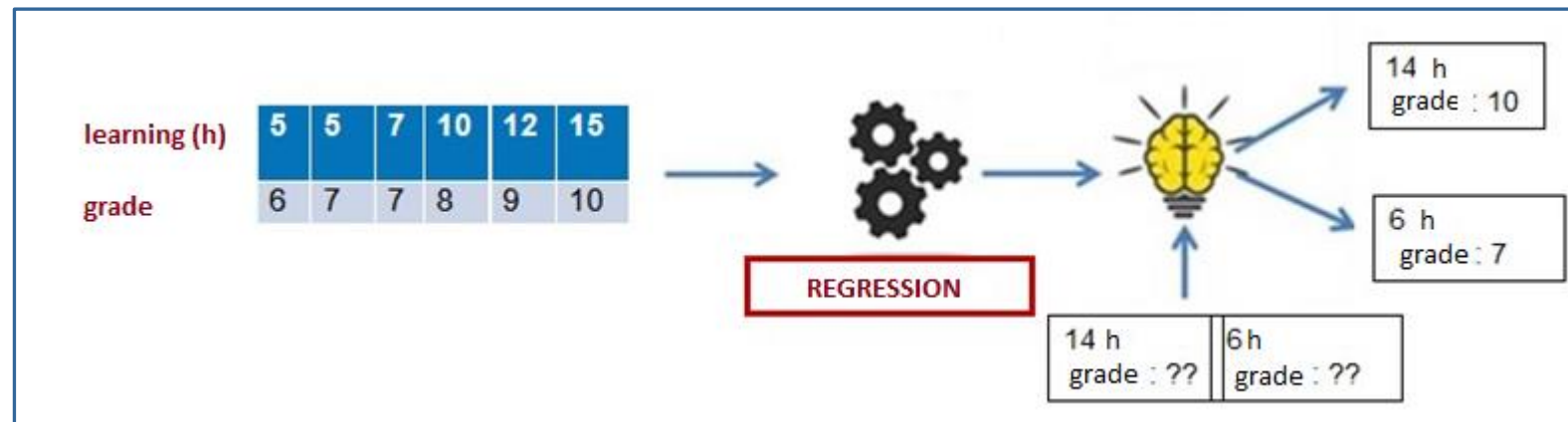
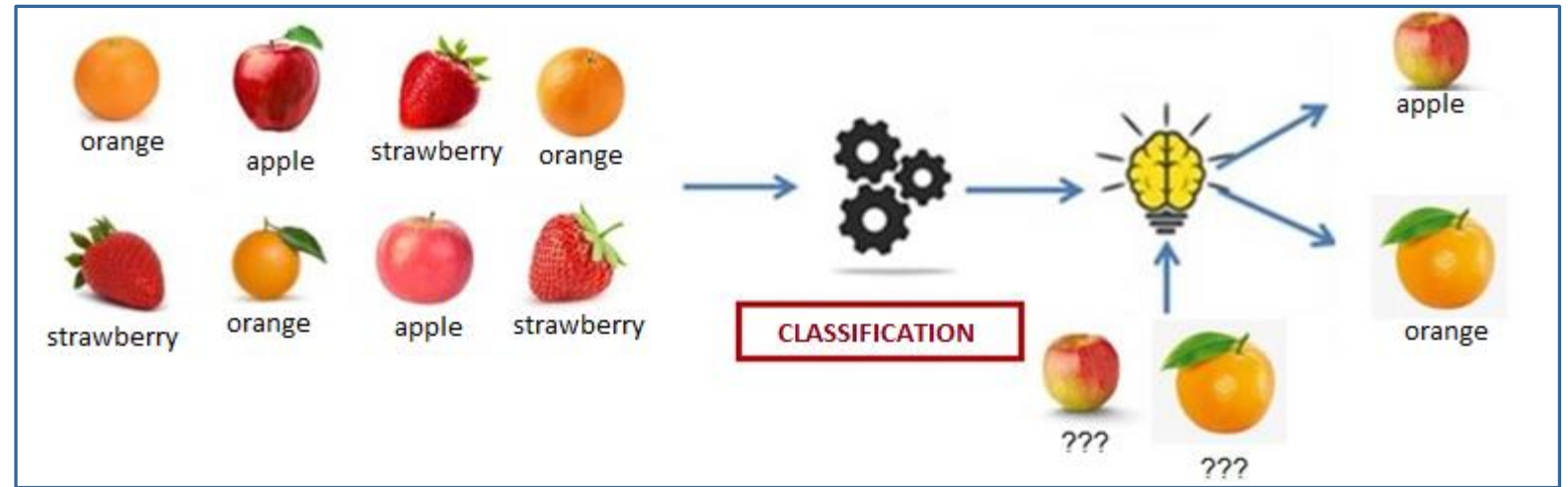


AI's Learning Curve: How Do Machines Learn?



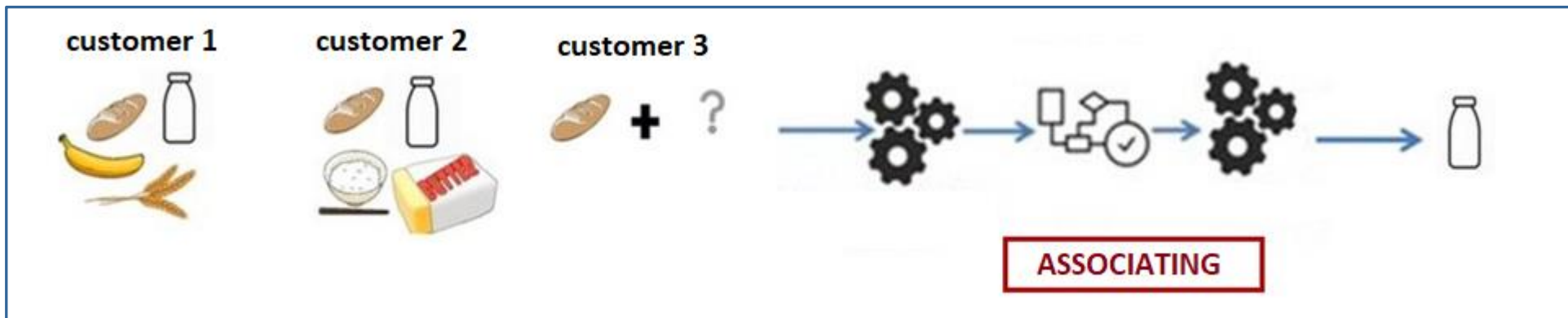


Supervised learning



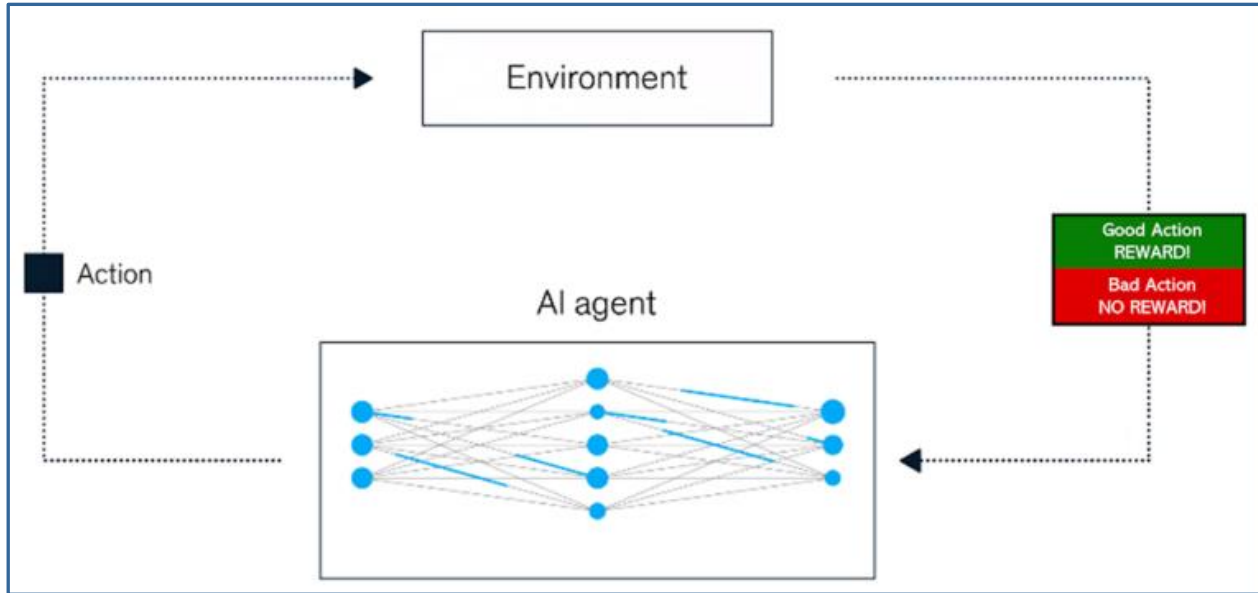


Unsupervised learning





Reinforcement learning



1997



2015



text genAI



Jabuka ne pada daleko od ...



AI and Creativity: Can AI Innovate?



AI won an art contest, and artists are furious



By Rachel Metz, CNN Business

Published 10:54 AM EDT, Sat September 3, 2022

MUSIC MADE BY ARTIFICIAL INTELLIGENCE HAS STARTED WINNING AWARDS. GRAMMYS NEXT?

MAY 14, 2020

BY TIM INGHAM



Prompt engineering

Well-defined tasks:

- enough context,
- concrete examples,
- negative prompts...

recipient:

- the role,
- the style...

The screenshot displays the ChatAPW interface for configuring a writing prompt. The browser address bar shows the URL: `File | /Users/b/Desktop/ChatAPW_Version2/Writer.html`. The interface includes a 'Templates' section with '3 favourite types' (Writer, F1, F2, F3) and an 'Expand to see more' button. A central form titled 'Act as: Writer' allows users to select various properties:

- Type of text: Essay
- Style: Witty
- Language: US English
- Slang: 40s Gangster Talk
- Length: 300 Words
- Output as: [dropdown]
- Formatting: [dropdown]

Below the form are buttons for 'Load Properties', 'My Topic', 'My Example', and 'My Structure'. A 'Copy Prompt' button is also visible. To the right, a preview of the generated prompt is shown, with annotations:

- 'Select one of 11 Templates' points to the Templates section.
- 'Select the property values' points to the form fields.
- 'Over 300 property values' is written on the left side.
- 'Write your specific topic / text / structure' points to the 'My Topic' field in the preview.
- 'Preview of the copied prompt' points to the preview area.
- 'First Click' and 'Second Click' are labeled near the 'Copy Prompt' button.



AI as a Polyglot:
Does It Translate?



EXPERT PROJECT



Call 2020 Round 1 KA2 - Cooperation for innovation and the exchange of good practices
KA226 - Partnerships for Digital Education Readiness



Univerza v Mariboru

Fakulteta za naravoslovje
in matematiko



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA



UNIVERSITÄT
BAYREUTH



OSMANGAZI

İLÇE MİLLİ EĞİTİM MÜDÜRLÜĞÜ



OSNOVNA ŠOLA
BOJANA ILIČA



BONNOUEDU





Machine translated

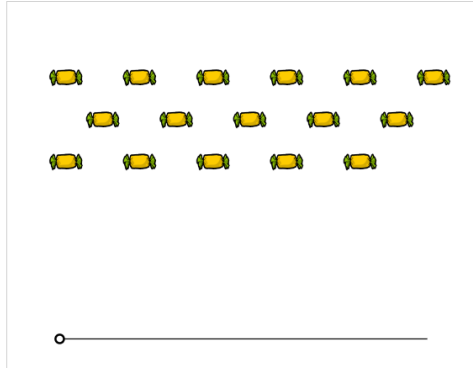
- i-texbooks
- educational lectures



Square root | Square root

SQUARE ROOT

Grandma asked Maya a riddle: "I have 16 candies in a bag. Arrange them so that there will be as many candies in each basket as there are baskets in which you will place sweets." Help Maya.



Hint Solution

Can you square a number? Next, you will learn about the square root of the number and the rules of rooting.

REPEAT

1. write as a product and calculate.

$7^2 = \square \cdot \square = \square$ $13^2 = \square \cdot \square = \square$

CHECK

2. Square.

$300^2 = \square$ $160^2 = \square$
 $60\,000^2 = \square$ $18\,000^2 = \square$

CHECK

3. square the decimal numbers.

$0,02^2 = \square$ $1,1^2 = \square$
 $0,0004^2 = \square$ $0,012^2 = \square$

CHECK

4. complete the table.

Number	9	15	19	0	<input type="text"/>	14	20	<input type="text"/>	17	<input type="text"/>
Square	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	25	<input type="text"/>	<input type="text"/>	64	<input type="text"/>	100

CHECK

sl

00
00
00

en

sl

04:18



AI in Education:
Friend or Adversary?



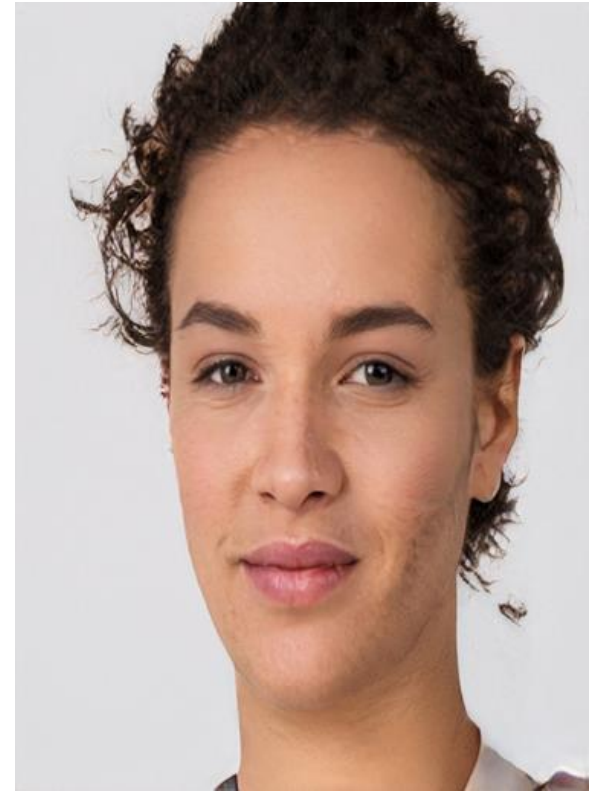
AI to increase the effectiveness of education

- Content co-creator
- Communication assistant
- Learning assistant
- Knowledge co-assessor

AI should not be used to automate bad teaching practices



Technology Hazards: How Can Youth Cope?





Pitfalls and actions

Information overload

Social media addiction

Cybersecurity threats

Digital divide

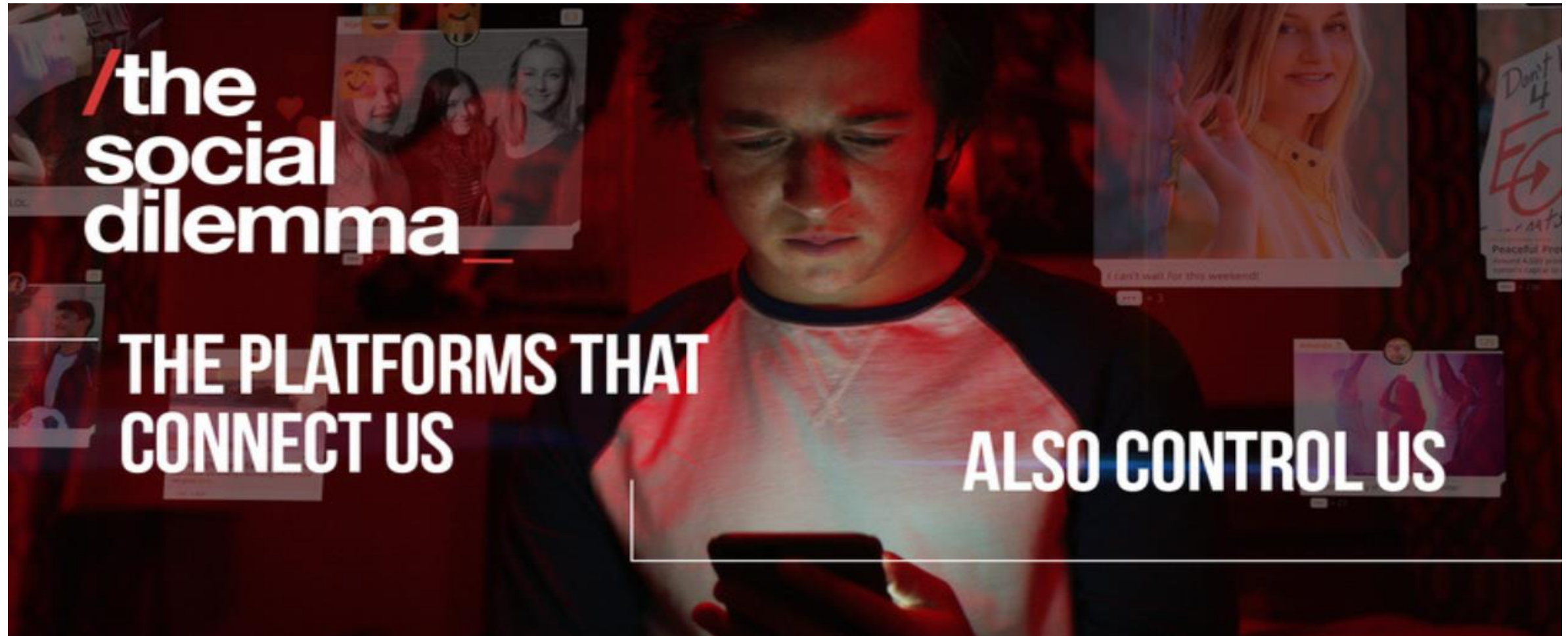
Digital mindfulness

Critical thinking

Computational thinking

Equity principle





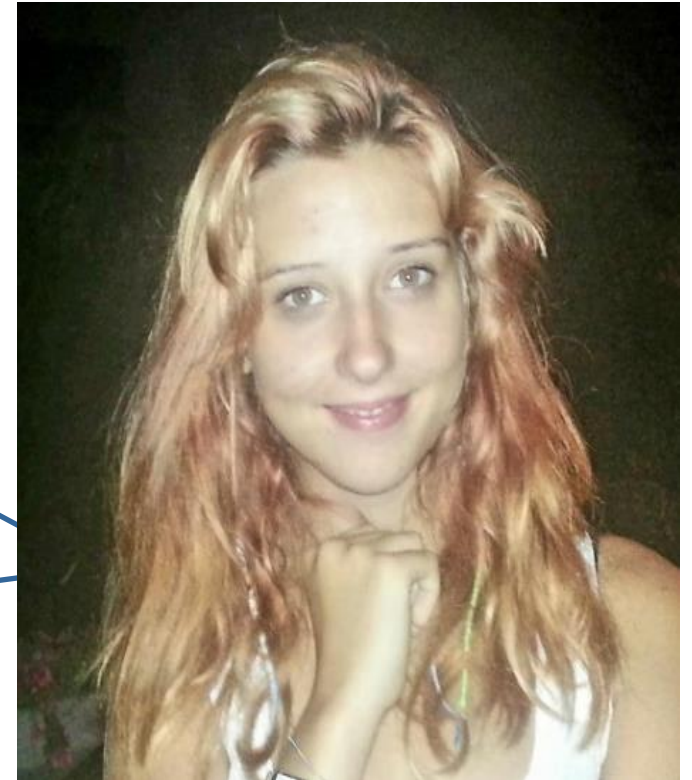
**/the
social
dilemma**

**THE PLATFORMS THAT
CONNECT US**

ALSO CONTROL US



AI's Social Change:
How Will It Transform Us?





biased data



99 %



93 %



88 %



65 %





responsibility





regulation

'I actually had a conversation with Dad': The people using AI to bring back dead relatives - including a plan to harvest DNA from graves to build new clone bodies

- People are using AI chatbots to bring dead people 'back to life'
- Ray Kurzweil plans to rebuild his father's body from grave DNA
- **READ MORE:** [I used a digital afterlife service so I can live on after death](#)

By [ROB WAUGH](#) TECH CORRESPONDENT FOR DAILYMAIL.COM

PUBLISHED: 12:03 GMT, 22 October 2023 | **UPDATED:** 12:03 GMT, 22 October 2023

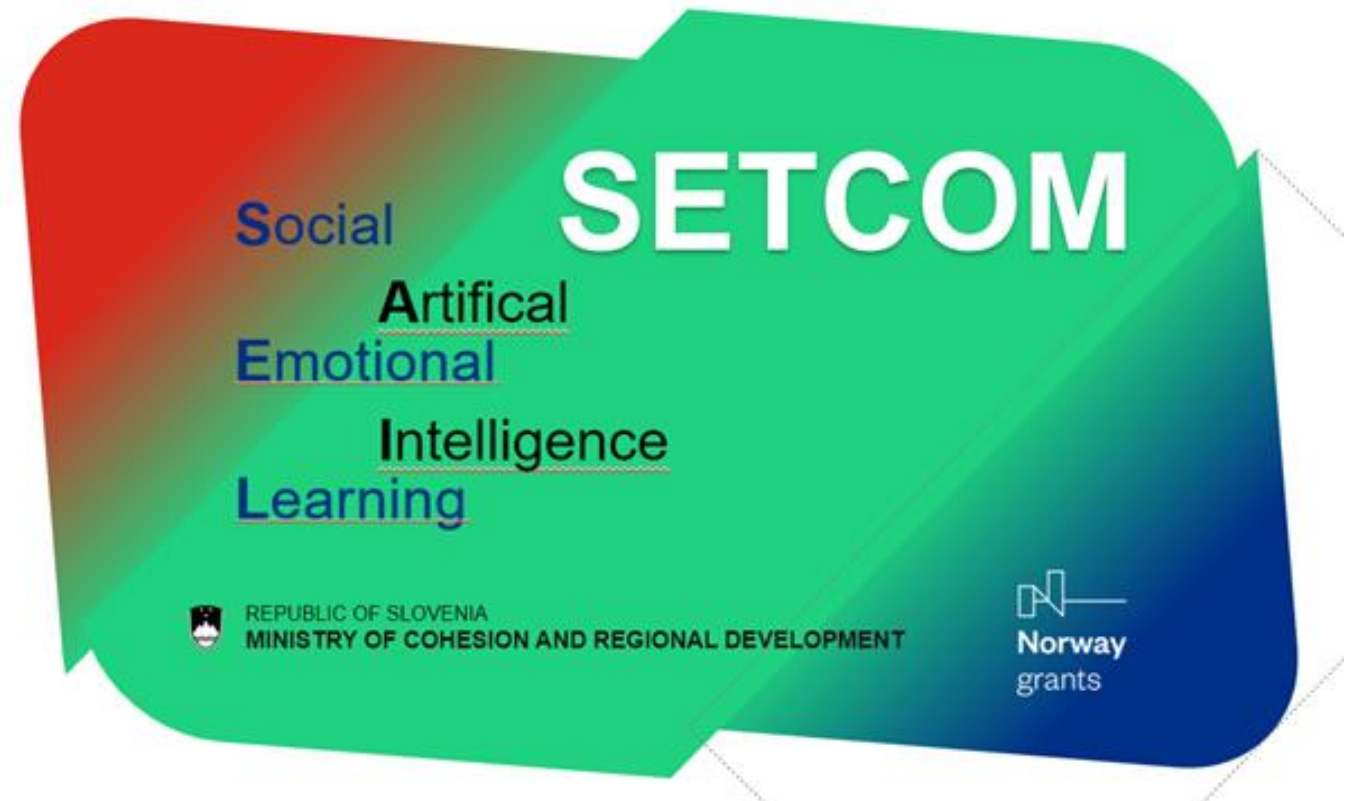


Problem



AI in Schools:
Swallowing the Future or
Spitting Out Progress?

Solution





Beyond IQ:
Why Do Feelings
Matter in a Digital
World?



thinking fast

SYSTEM 1

Intuition & instinct



Unconscious
Fast
Associative
Automatic pilot



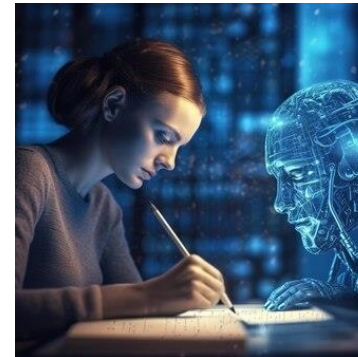
thinking slow

SYSTEM 2

Rational thinking

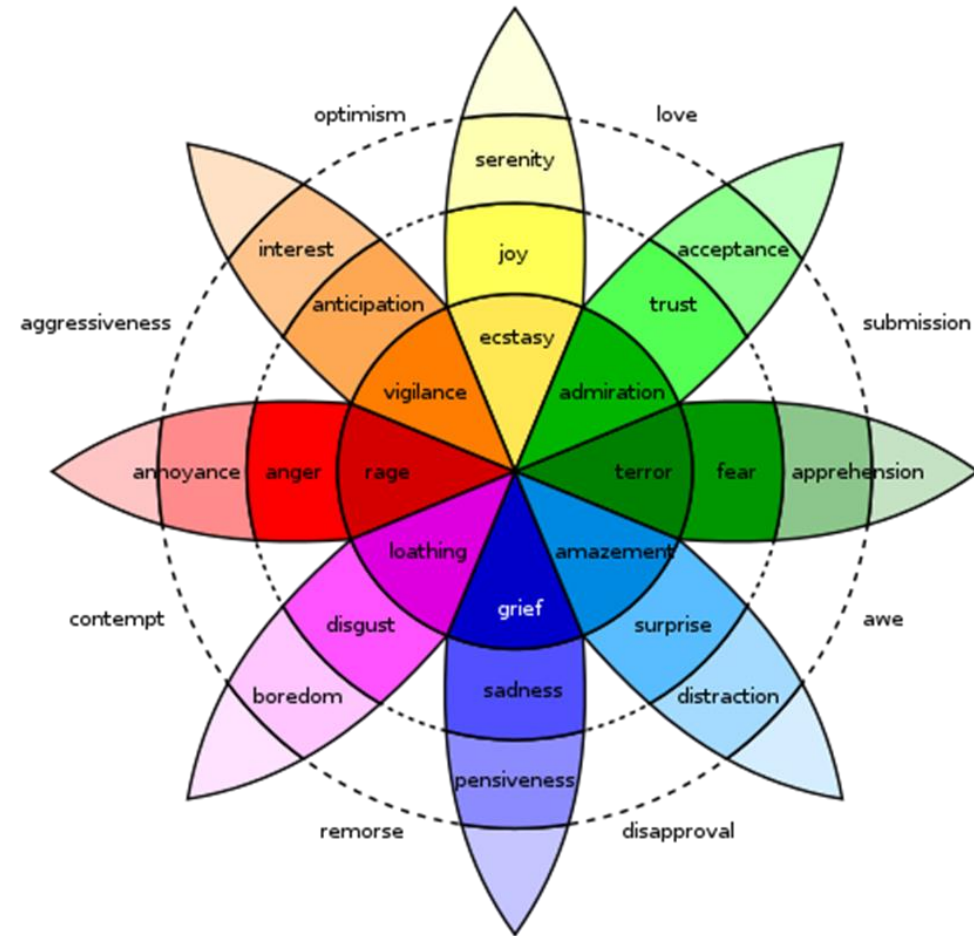


Takes effort
Slow
Logical
Lazy
Indecisive





CASEL model
(Durlak et al., 2015)



Plutchik wheel of emotions(1980)



Today we did...

- AI Unveiled: What Exactly Is AI?
- The AI Range: How Diverse Is AI?
- AI's Learning Curve: How Do Machines Learn?
- AI and Creativity: Can AI Innovate?
- AI as a Polyglot: Does It Translate?
- AI in Education: Friend or Adversary?
- Technology Hazards: How Can Youth Cope?
- AI's Social Change: How Will It Transform Us?
- Beyond IQ: Why Do Feelings Matter in a Digital World?







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