AI NAVIGATORS

BEST PRACTICES SERBIA

Six teaching practice presentations

2024-1-MK01-KA220-SCH-000253777

Co-funded by the European Union. Views and opinions expressed are those of the authors only.

PSYCHOLOGY × STATISTICS

Digital Footprints

CORRELATION IS NOT CAUSATION

Aleksandra Stevanović & Snježana Đurđević

Age 17 / 90-minute interdisciplinary lesson

Two disciplines. One problem.

PSYCHOLOGY

How do digital experiences relate to well-being?

STATISTICS

What does a correlation actually demonstrate?

From personal observation to a research question

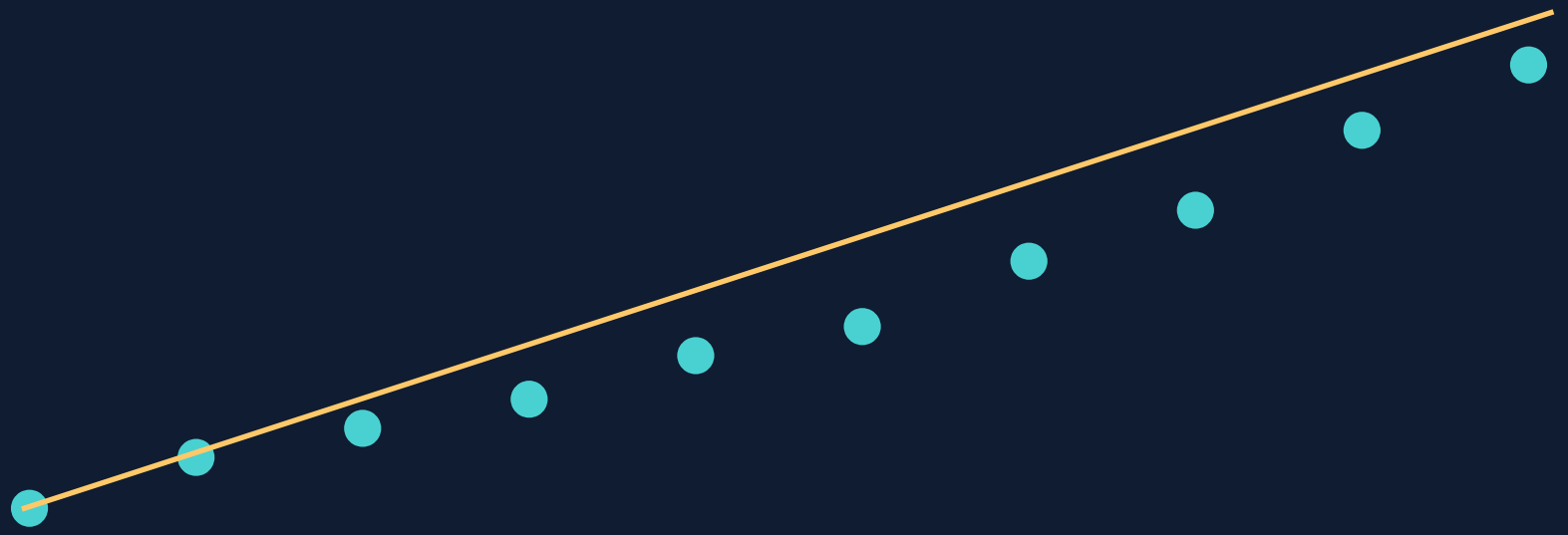
24h

SCREEN-TIME SNAPSHOT

Learners view their own screen-time statistics and respond to guided statements in Mentimeter.

The class asks: does a relationship imply a cause?

Patterns can be convincing — and misleading



Hypothetical teaching dataset

Compare online time with FoMO and self-esteem. Discuss trends, outliers and alternative explanations.

Generate hypotheses. Then verify.

1	**ASK**	Use ChatGPT or NotebookLM to explore possible relationships.
2	**COMPARE**	Examine the statistical outputs and the original source.
3	**CHALLENGE**	Identify overclaims, confounders and causal leaps.

Handle claims — and learners — with care

01 Hypothetical datasets are not real student health data.

02 Correlation describes association, not proof of causation.

03 AI-supported interpretation needs independent scrutiny.

ASK BETTER QUESTIONS OF THE DATA.

Interdisciplinary teaching · Psychology × Statistics

Based on the submitted, share-approved lesson plan · Serbia · AI Navigators

AI Navigators
Empowering Teachers for the AI Era

Dušica Uđilović
msc of chemistry
STEM educator
Srednja škola ‘’Miloje Vasić’’
Veliko Gradište

As someone who loves innovation, who is creative, and who never wants children to experience chemistry as a difficult, boring, and abstract science — the way some of us experienced it during our own education — this training was a wonderful opportunity to dive further into the world of digital tools and artificial intelligence.

I carried out two chemistry lessons in which artificial intelligence was used as a tool that allows students to turn chemical concepts into something tangible, creative, and easy to remember.

The first lesson, dedicated to ionic bonding, was carried out with first-year general-track gymnasium students (14–15 years old), while the second, dedicated to noble gases, was carried out with students aged 15–16, also at the same school and in the same track.

Although they differ in content, both lessons share the same pedagogical idea: learning through creation, rather than through mere memorization and learning of definitions.

Both lessons show how chemistry teaching can be modernized with the help of AI tools, while keeping scientific accuracy and critical thinking at the center of students' attention.

Lesson 1: Ionic Bonding
(1st Year of Gymnasium)

The lesson was designed to introduce new content on ionic bonding, spanning two school periods. It opened with a storytelling activity — using the Gemini AI tool, the students and I jointly shaped a text in which the transfer of electrons between metals and non-metals was portrayed as an interaction between characters in a story.
Special emphasis was placed on prompt engineering — students came to realize how directly the quality of an AI response depends on how precisely the prompt is formulated.
After the introduction, the class was divided into groups, with each group assigned an ionic compound from everyday life:

Group 1 — table salt (NaCl): created a scientific-creative story about the formation of the ionic bond, then produced a presentation using NotebookLM and an interactive Kahoot quiz to check understanding

Group 2 — baking soda ($NaHCO_3$): used Canva to create a presentation and a visually striking educational poster on the structure, properties, and use of the substance

Group 3 — copper sulfate / "blue stone" ($CuSO_4 \times 5H_2O$): devised a story highlighting the structure, properties, and significance of this compound's ionic bond, built a presentation using Magic School Tools, and then, with the help of Suno AI, composed an original song on the topic

Group 4 — potassium permanganate ($KMnO_4$): produced a presentation in Manus and a video in the CapCut application, outlining the importance of the substance's structure, properties, and use

Each group drew on reliable scientific sources for their research, while AI was used for brainstorming, content synthesis (NotebookLM, Manus), and creative production (Suno AI, Canva, CapCut).

The lesson closed with students presenting their work, a Kahoot quiz, and a short reflection on how storytelling helped make the "invisible" world of ionic bonding easier to understand.

This interdisciplinary project was designed and implemented for a student with education support. The activities were specificially adapted to lower cognitive barriers through visual and digital scaffolding, while actively targeting the development of fine motor skills, functional literacy, and sequential thinking through hands-on learning.

The student used interactive globe to locate Japan and point out a picture of sushi. He used picture cards to correctly sequence for 4 chronological steps of recipe. He used three identical cups to measure equal parts of flour, water and salt to mix the dough. He rolled and cut the dough to create a 3D suschi model using all four assigned colors. Using of AR application will help him to independently locate and display the 3D model of Mount Fuji. He painted a shape of volcano and lava on canvas using high-contrast acrylic colors. A student obtained photographs of the workflow showing the steps taken during the experints in Canva.

The student also designed a red O-Tori gate shaped ribbon to serve as a nucleation site in a solution of magnesium sulphate heptahydrate with red colour. To compare the structure of raw salt grains with the newly grown crystals the process and the crystals were documented through drawings and examinated under a microscope. Poster of practical work was designed in Canva.

Lesson 2: Noble gases (ages 15–16)

The second lesson, dedicated to introducing new content on noble gases, was built around project-based and student-led learning.

Unlike the first lesson, the emphasis here was on full freedom of choice — students themselves chose the element (helium, neon, argon, krypton, xenon, radon, or oganesson), the format of their product (letter, quiz, song, poster, video, mind map, word associations, flashcards), and the AI tool they would use to create it, guided by an "Artificial Intelligence in Education" guide that I had prepared in advance using Canva.

Students shared their work via a shared Viber group, then, using a Checklist of Success, reviewed at least two other groups' work — assessing scientific accuracy, creativity, and clarity of message. In this way, every student was indirectly exposed to the properties of all the noble gases, not just the one they had personally researched.

The lesson concluded with a discussion on human–AI collaboration, with a clear takeaway: responsibility for scientific accuracy always remains with the student.

Both lessons are connected by the same foundation:
AI serves as a creative collaborator, not as the primary resource. Students research using reliable sources, use AI tools for brainstorming, synthesis, and content production, and the final product always goes through peer or teacher review for scientific accuracy.

Benefits
Deeper understanding of abstract concepts — ionic bonding and the electron configuration of noble gases are among the harder concepts in chemistry to grasp, precisely because they take place at a level invisible to the naked eye. By turning these processes into a story, a song, or a visual narrative, students built mental models that are more concrete and easier to remember than formulas and classic definitions.

Development of digital and AI literacy — students did not simply "use" AI tools — they learned to formulate precise prompts (prompt engineering), to recognize the differences between tools, and to critically evaluate the quality of generated content.
Stronger peer collaboration and knowledge sharing through group work and review, students learned from one another, not only from the teacher — particularly evident in the noble gases lesson. The choice of format allowed every student to find a mode of expression that best matched their strengths — visual, artistic, linguistic...

Greater motivation and autonomy — students were given the freedom to choose their topic, format, and tool, engagement visibly increased — including among students who usually find it harder to engage with traditional instruction.

Significant time savings in creating materials this way — without extra strain, allowing the focus to remain on critical thinking and reflection.

Reactions:

Students who otherwise struggled more with chemical concepts and their application became more active when given the freedom to express science through music, drawings, or storytelling.
In the noble gases lesson, full engagement was recorded — the possibility of choice allowed even the most reserved and least active students to find a format through which they could express their understanding of the material.
The advantage lies in easier expression for certain students, whether in written form or through speech (video recordings), as well as in the precision that certain tools make possible for us.

They noticed that AI tools provide a decent general overview of a topic, but that going deeper requires developing more sophisticated, multi-layered prompts (advanced prompt engineering).

For more demanding tasks, such as song, they sometimes propose writing and refining the lyrics by hand first, and only afterward using AI tools for the vocal performance and final outcome.

They showed initiative in moving from static content toward more dynamic formats (video, interactive presentations), reflecting growing confidence, responsibility, and self-awareness.

During discussion, students noted that the process of reviewing other groups' work helped them learn the material on elements they had not personally researched, and that working with different AI tools gave them insight into how differently each tool functions and generates content.

Challenges
Verifying the scientific accuracy of AI-generated content
The skill of prompt formulation (prompt engineering)
A large number of tools and technical variety
Uneven digital skill levels among students
Organizing peer review

Conclusion and recommendations for future work

Integrating AI tools into chemistry teaching, through storytelling and project-based learning, shifted the foundation of the lesson from passive absorption of content toward active creation. Students did not just "use technology" — they learned to question it critically, which is just as important an outcome as understanding ionic bonding or the stability of noble gases' electron configuration.

For future cycles, I plan to:

Devote more time to the prompt engineering phase as a distinct skill
Introduce comparative tasks (e.g., the same prompt run through two different AI tools) so students develop a critical eye for the differences between platforms
Expand peer review through structured rubrics tailored to each type of digital product
Continue developing an "AI Day" at school, as a space for sharing experiences and showcasing student work with the wider school community

Both lessons confirm that AI, when used thoughtfully as a spark for creativity and critical thinking rather than a substitute for understanding can significantly enrich science teaching and make it more relevant to the way today's students learn and communicate.

THANK YOU FOR YOUR TIME AND ATTENTION!

I Navigators: Empowering Teachers for the AI Era Project Navigators ID: 2024-1-MK01-KA220-SCH-000253777

01

WHEN THE AI SOLUTION IS WRONG

A mathematical detective story

Fourth Belgrade Gymnasium • Year 2 • Ages 16–17 • 45 min

AI-assisted critical reasoning

A fluent answer is not a proof

Students learn to test AI-generated reasoning, not simply accept its conclusion.

THE TRAP

Polished steps can hide an invalid root.

THE RESPONSE

Explain every step. Verify every candidate.

Four moves of a mathematical detective

A task sequence grounded in the teacher’s submitted lesson plan.

01

SOLVE

Work independently, without AI.

02

COMPARE

Inspect an AI-style solution.

03

DETECT

Locate the faulty step.

04

VERIFY

Substitute in the original.

CASE FILE / The extra root

Illustrative equation prepared for these slides — not an actual ChatGPT response.

$$\sqrt{(x + 5)} = x - 1$$

After squaring: $x^2 - 3x - 4 = 0$

CANDIDATES

$x = -1$

$x = 4$

The original equation decides

Squaring introduces candidates; only substitution verifies them.

x = −1 / REJECT

Left: $\sqrt{4} = 2$
Right: -2
$2 \neq -2$

x = 4 / ACCEPT

Left: $\sqrt{9} = 3$
Right: 3
$3 = 3$

A deliberate error can teach verification

Teacher’s assessment prompt from the source lesson plan.

> “Create five irrational equations with increasing levels of difficulty. For one equation, intentionally include a common mathematical error so that students can identify, explain, and correct it.”

THE ERROR IS A PEDAGOGICAL DEVICE — REVEALED AFTER REVIEW

One goal. Three ways in.

Students receive different support while practising the same reasoning skill.

SCAFFOLD	Guided substitution, simpler equations and intermediate hints.
CORE	Find and justify the invalid step in an AI-generated solution.
EXTENSION	Design problems with additional or extraneous roots.

What counts as evidence of learning?

Assess mathematical justification rather than confidence in an AI output.

1. Solve with valid transformations
2. State domain restrictions
3. Locate the incorrect reasoning
4. Check every candidate in the original
5. **Explain why a step is valid or invalid**

The student’s proof comes before the AI’s fluency.

Human-led teaching. AI-supported learning.

Ivana Prodanović • Fourth Belgrade Gymnasium

LANGUAGE / CRITICAL THINKING

When ChatGPT Analyses Serbian Verb Forms

Katarina Ivanović

Serbian language • Grade 11 • 45 min

Who gets the final say?

STUDENT REASONING

Recognise verb forms. Explain grammatical function. Apply rules in context.

AI INTERPRETATION

Read ChatGPT’s analysis. Identify disagreement. Test it against reliable grammar references.

A four-step language workshop

01

READ

02

IDENTIFY

03

COMPARE

04

DEFEND

Students first solve exercises independently, then compare with AI and explain the grammatical rule behind their judgement.

Use ChatGPT as a comparison partner

“Identify all verb forms in the following Serbian sentences. Explain the grammatical form and its function without changing the original meaning.”

The teacher also uses ChatGPT to generate unlabelled practice sentences; learners must identify the forms themselves.

Multiple ways to show understanding

Worksheet	Identify and explain verb forms
Discussion	Defend the answer with a rule
Digital quiz	Check learning using Kahoot or Wordwall

The learning is bigger than grammar

Students were actively engaged throughout the lesson.

The teacher reported increased motivation, productive discussion and critical evaluation of AI-generated explanations.

A TOOL FOR QUESTIONS, NOT AN AUTHORITY ON ANSWERS.

Good practice · Katarina Ivanović · Serbia

Based on the teacher’s approved lesson plan · AI Navigators / Erasmus+

AI NAVIGATORS · GOOD PRACTICE FROM SERBIA

What Gets Lost in an AI Translation?

Reading Seobe through language, voice and literary interpretation

Milica Marković

Računarska gimnazija, Serbia · Grade 11 · ages 17–18 · 45 min

AI-supported classroom practice • Based on the teacher's submitted lesson plan

A literary problem, not a translation exercise

Can you understand the words — but still miss the character?

THE TEXT

Vuk Isaković’s voice

Students encounter unfamiliar Slaveno-Serbian expressions in Seobe. Language is part of characterisation and artistic effect.

THE QUESTION

What can AI recover?

A modern translation may clarify vocabulary. Students must investigate what happens to tone, historical context and style.

Human reading comes first

Four-person groups, each working with a different passage

1

Read

Before AI · 5 min

Underline unfamiliar words and propose meanings.

2

Ask

AI support · 8 min

Use ChatGPT to translate, explain and contextualise.

3

Compare

Critical review · 10 min

Examine gains, omissions and stylistic losses.

4

Argue

Group discussion

Justify interpretations from the original text.

Prompt: preserve more than vocabulary

Teacher’s submitted prompt — applied to a selected passage

SOURCE PROMPT

“Translate the following passage from Slaveno-Serbian into contemporary Serbian while preserving its style and tone.”

Follow-up: Which nuances may be lost in the move to contemporary Serbian?

The comparison grid

Students document what survives and what changes

ORIGINAL	AI TRANSLATION	PRESERVED	LOST
Historical wording and voice	Modern-language explanation	Clarity, meaning and key details	Register, tone and literary effects

AI’s best explanation may still be incomplete

Students look for four types of evidence

LANGUAGE

Unfamiliar terms

Did AI decode an expression accurately?

HISTORY

Context

Did it lose historical meaning or social register?

LITERATURE

Style & tone

Was the character’s voice flattened into neutral prose?

READER

Interpretation

Does understanding each word equal understanding the work?

Discussion: can AI replace literary reading?

The class must defend each answer with an argument

AI CAN SUPPORT

Decoding and access

AI can quickly clarify unfamiliar vocabulary and suggest initial interpretations. This may free time for deeper discussion.

HUMANS MUST DO

Judgement and evidence

Readers weigh style, context and ambiguity. The original text remains the reference point for each claim.

What counts as evidence of learning?

Teacher-led formative assessment

1. Identify the literary purpose of Slaveno-Serbian.
2. Compare original and AI translation accurately.
3. Spot an omission or stylistic distortion.
4. Explain an interpretation with textual evidence.
5. Reflect on where AI is helpful — and limited.

Exit reflection

The lesson’s transferable teaching principle

“What can AI explain, and what can only a reader interpret?”

FIRST

Read independently

Form an initial interpretation before asking AI.

NEXT

Challenge the output

Compare AI with original language and context.

FINALLY

Defend a reading

The student, not the model, must justify meaning.

Human-led teaching. AI-supported learning.

Teacher’s lesson plan · Adaptation for sharing and discussion

The teacher sets the goal. Students question and verify AI output.

Milica Marković · Računarska gimnazija, Serbia

Original lesson plan ↗️

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AI NAVIGATORS

NEW MINDSET COACHING & TRAINING

AI Navigators: Empowering Teachers for the AI Era
Project Navigators ID: 2024-1-MK01-KA220-SCH-000253777

Health Beyond the Algorithm

Vukašin Ćurčić

Medical School „Beograd“, Serbia

Lesson Context

Medical School "Beograd", Serbia

Subject: Nursing Care of Children – Theory

Lesson Topic: Health Education Tools

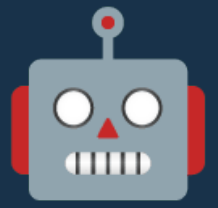
Target group: Grade 11 (17–18 years old)

Future nurses and future health educators

Learning Objectives

Critical Thinking

Evaluate health information critically



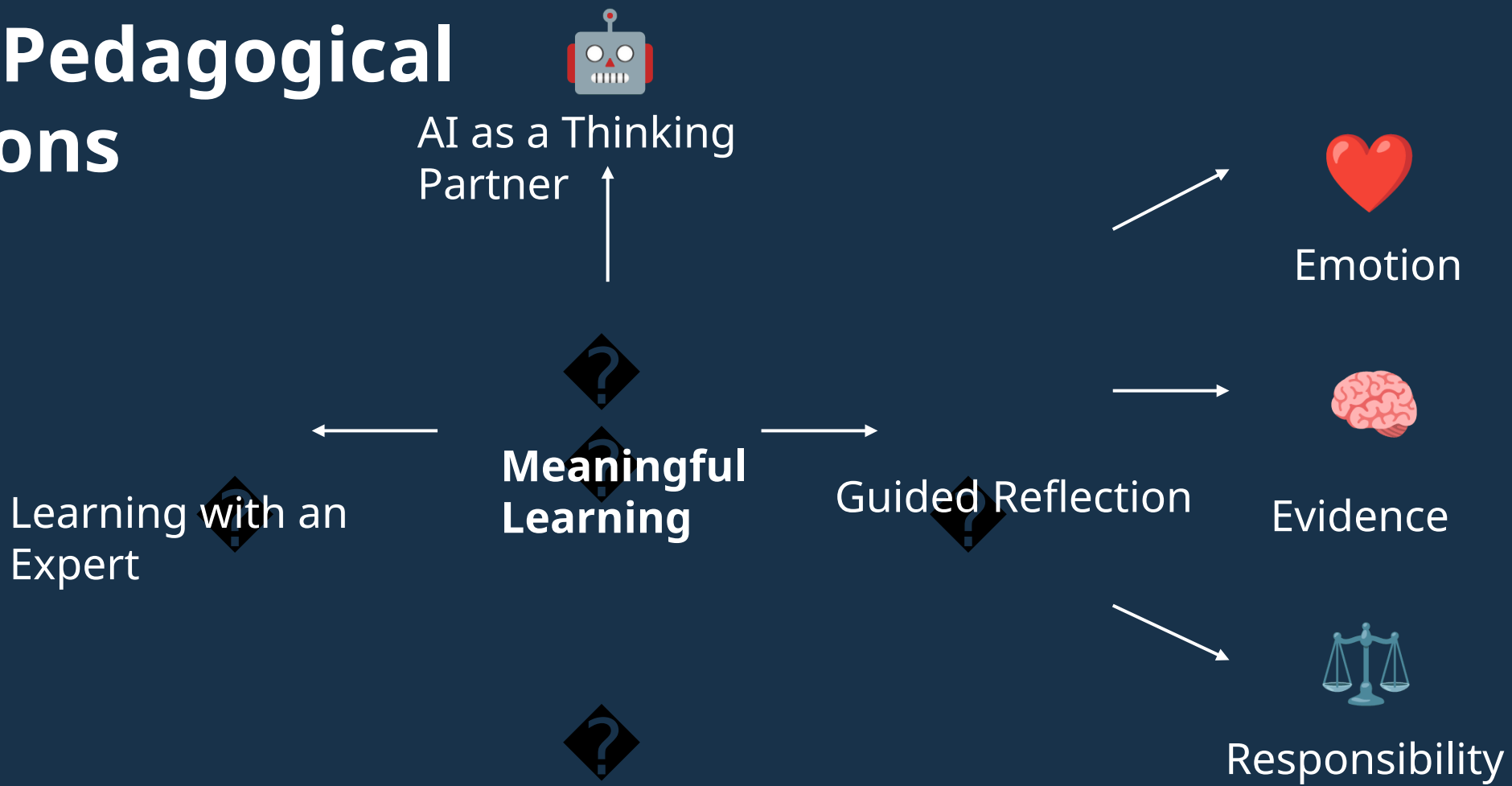
AI as a Learning Partner

Use AI to question, compare and reflect – not simply to find answers

Ethical Health Communication

Create accurate, responsible and audience-appropriate health messages.

Three Pedagogical Decisions



Classroom Activity

Learning Task

AI Inspiration

Critical Reflection

Final Health Message

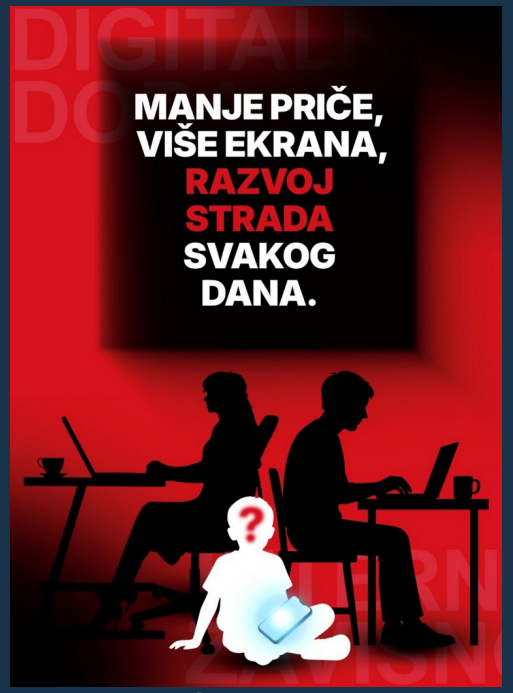
Students' Voices

Respect boundaries.
If it's not a clear YES, it's a NO.

Children pay the price of our decisions.
Protect them through vaccination.

The power of love is in every sip.

Students' Voices



Less talk, more screens. Development suffers every day.

Women's rights don't stop at the maternity ward.

Real life has no pause button. Live it.

Students' Voices

Not everyone asks for help out loud.
Some smiles hide silent struggles.

Feel for changes. Catch it early.

You Are Not Alone in Your Silence

Health Beyond the Algorithm

Our students will not be defined by how well they use AI, but by how well they care for their patients