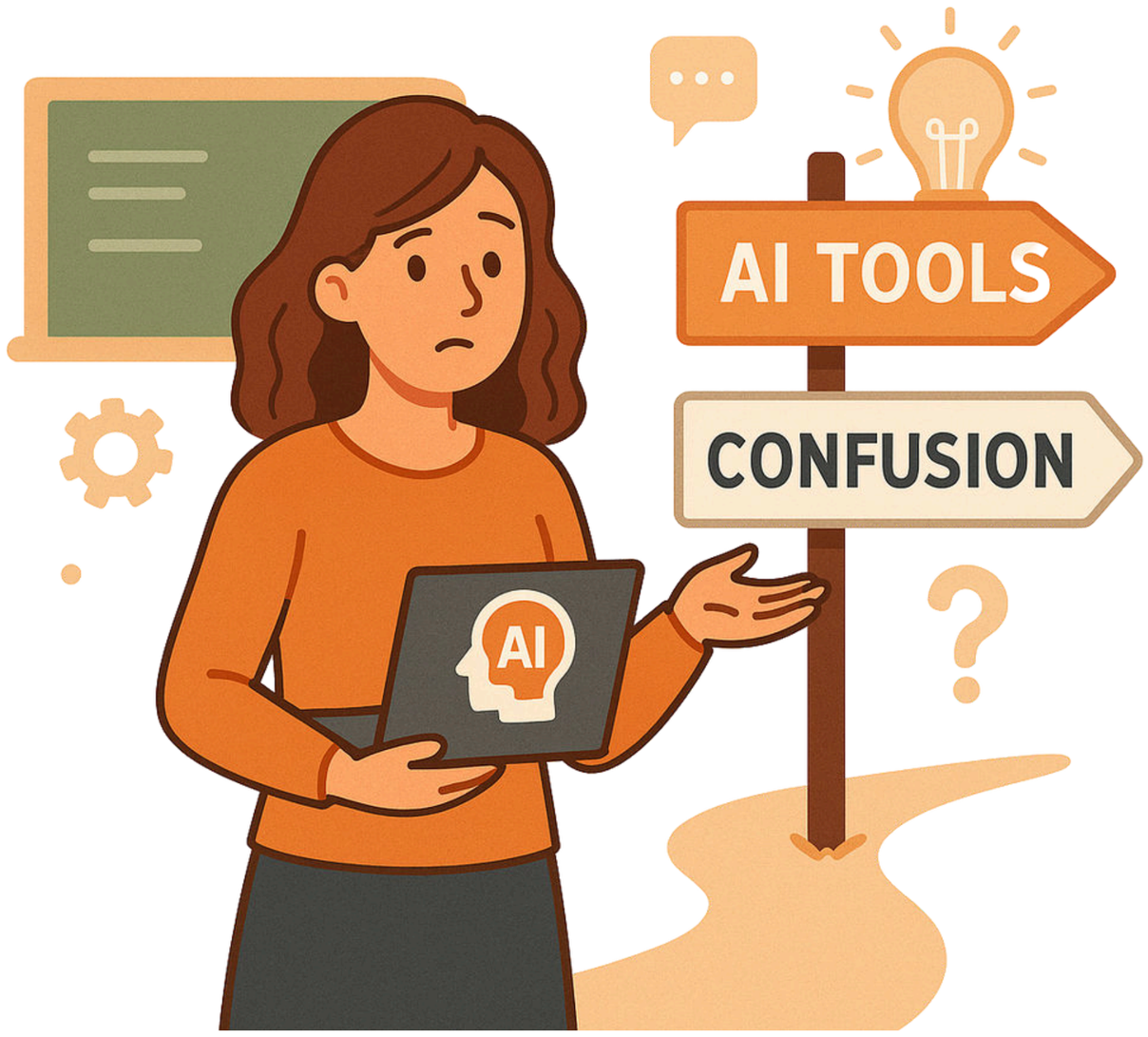
AI Literacy

Simply Excplained for Teachers

By Med Kharbach, PhD

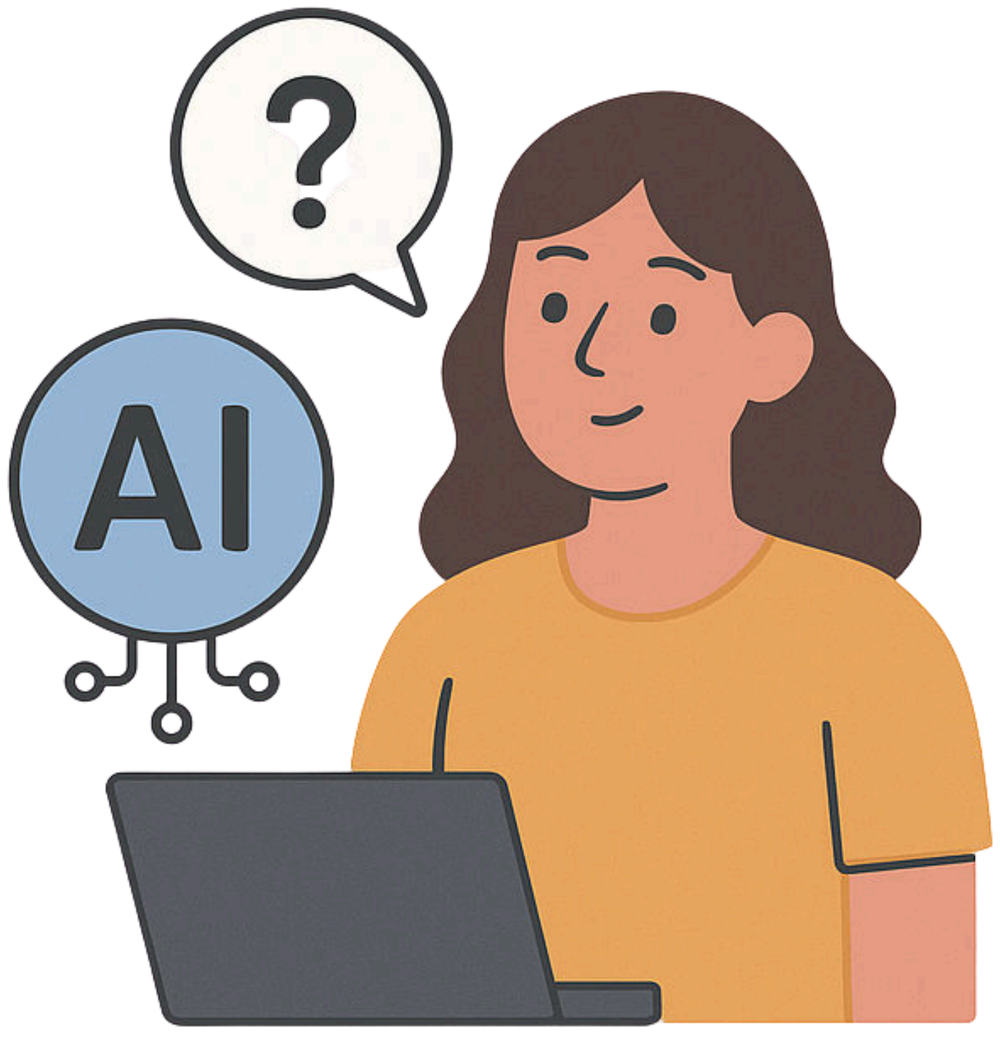


AI is the talk of the moment and for good reason. It's reshaping how we teach, learn, and work. Yet many teachers feel lost in the noise, unsure where to start.

With schools slow to respond, the burden falls on educators to figure things out alone. I put this guide together to offer some practical help for those just starting out on this journey into AI..

So let's take it step by step.

What exactly is AI?

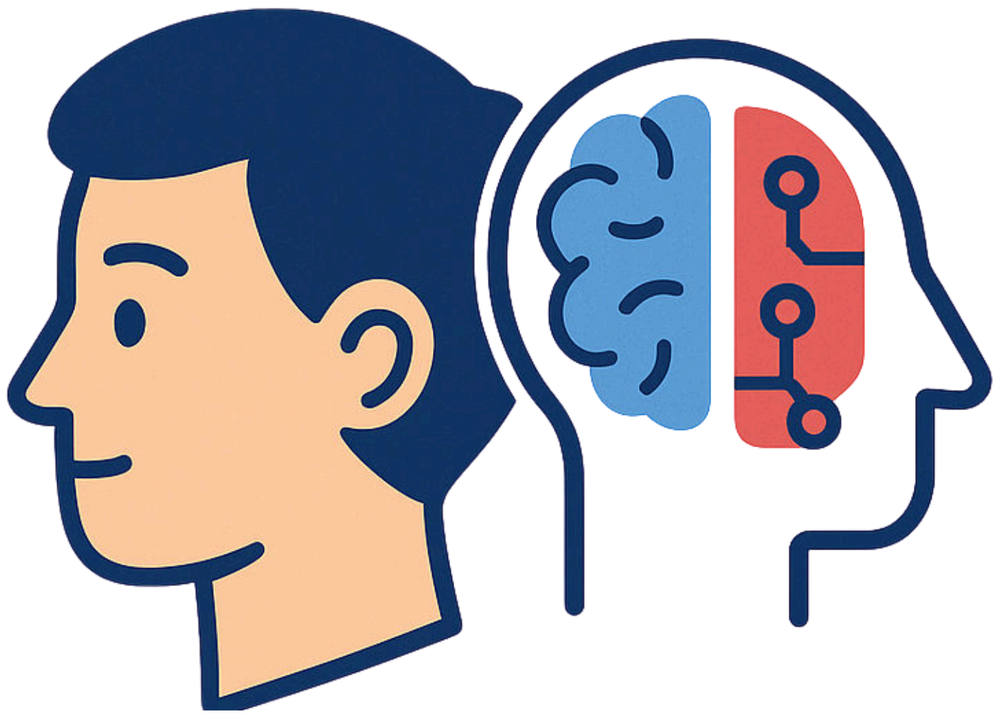


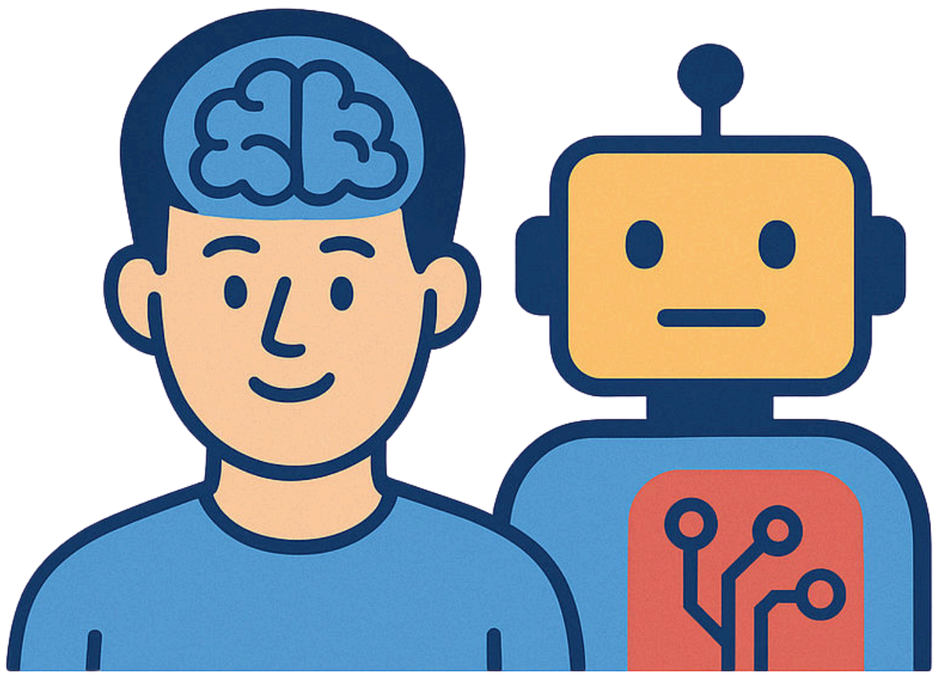
Here are two main definitions that can help ground our understanding of AI.

What is AI ?

McCarthy (2007) defines AI as

"the science and engineering of making intelligent machines, especially intelligent computer programs. (p. 2)





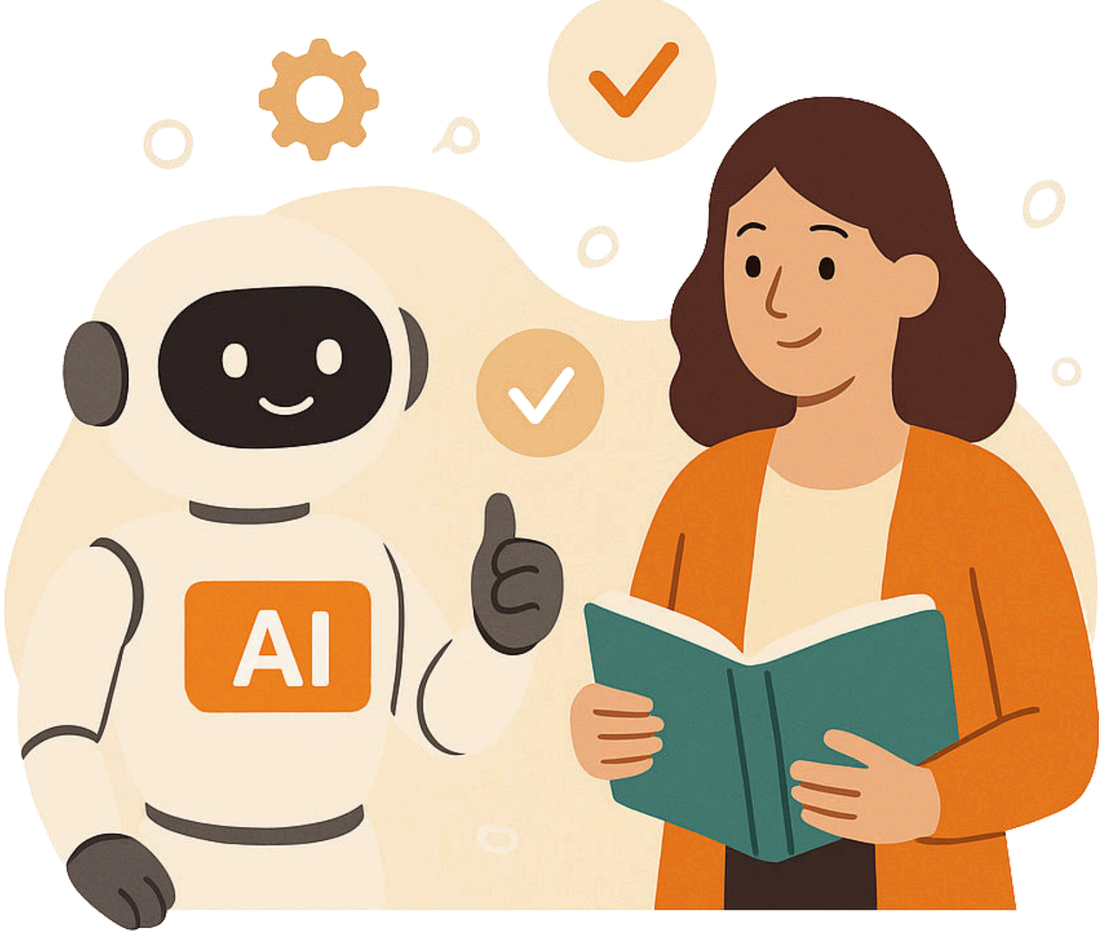
In U.S code, AI is defined as

"a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments." (n.p.)

- McCarthy, J. (2007). What is artificial intelligence? Stanford University. https://www-formal.stanford.edu/jmc/whatisai.pdf
- U.S. Code. https://uscode.house.gov/view.xhtml?req=%28title%3A15+section%3A9401+edition%3Aprelim%29

The takeaway?

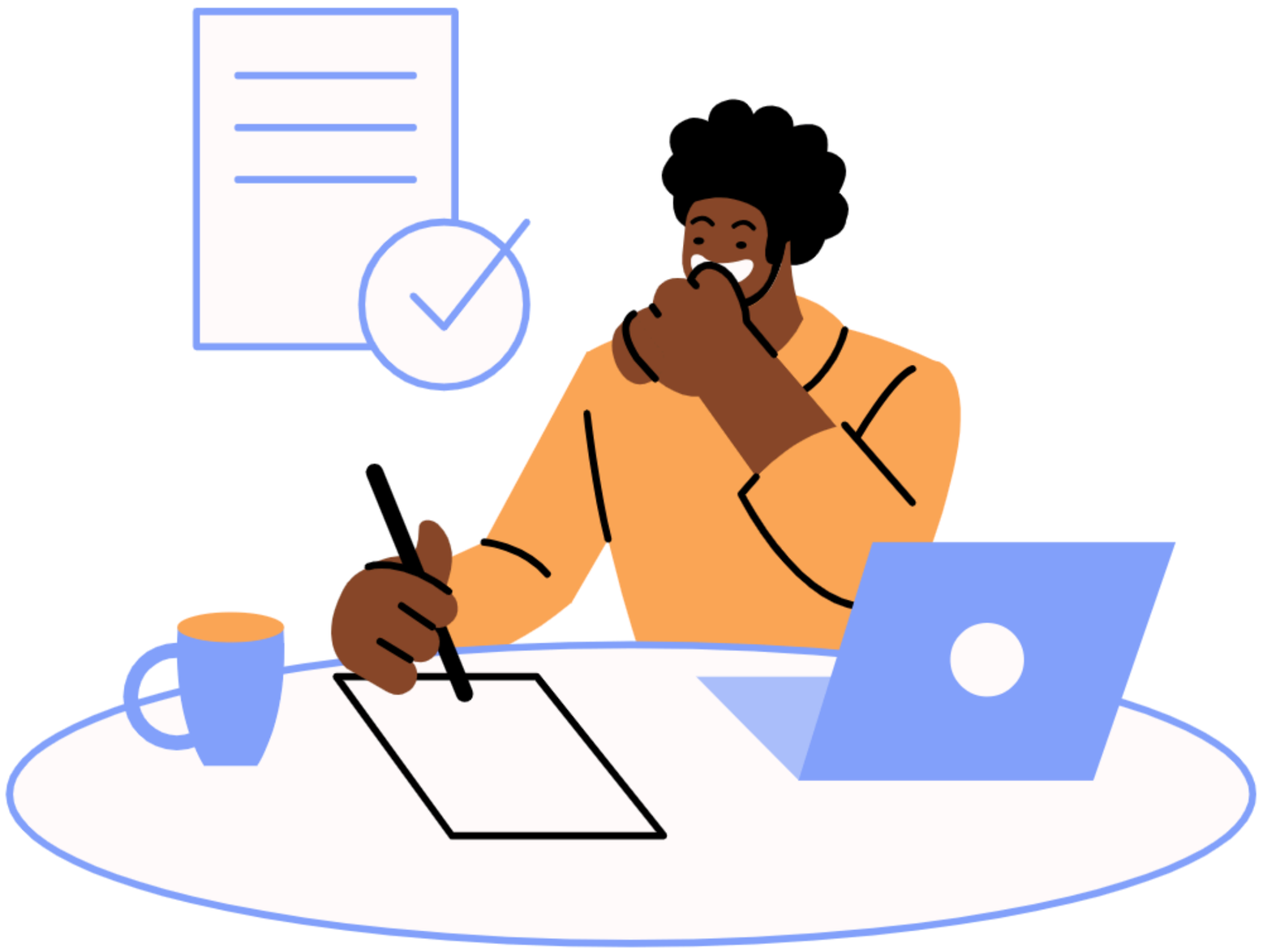
What these definitions tell us is simple:



AI is about machines (algorithms) doing smart tasks like making decisions, giving suggestions, or solving problems based on goals we set.

Understanding what AI is only gets us halfway. To use it well especially in education we need something more: AI Literacy.

What is AI Literacy ?



According to OECD (2025), AI literacy refers to:

"The technical knowledge, durable skills, and future-ready attitudes required to thrive in a world influenced by AI. "
(p. 6)

This definition highlights three key elements:

1. knowledge of how AI works
2. the skills to use it effectively
3. the mindset to navigate its impact

⇒ For us in education, developing AI literacy means being able to evaluate tools, guide students in their use, and stay grounded as technology continues to evolve.

Let's talk about How AI Works.

↓

You don't need to be a computer scientist to understand the basics.

↓

All we need is a solid grasp of the foundations, just enough to know how AI systems operate and make decisions.

How Does AI Work?

1

Data Input

AI receives diverse data types

2

Learning Patterns

Algorithms identify patterns in data

3

Training

AI improves through repeated examples

4

Model Building

AI creates a system for future tasks

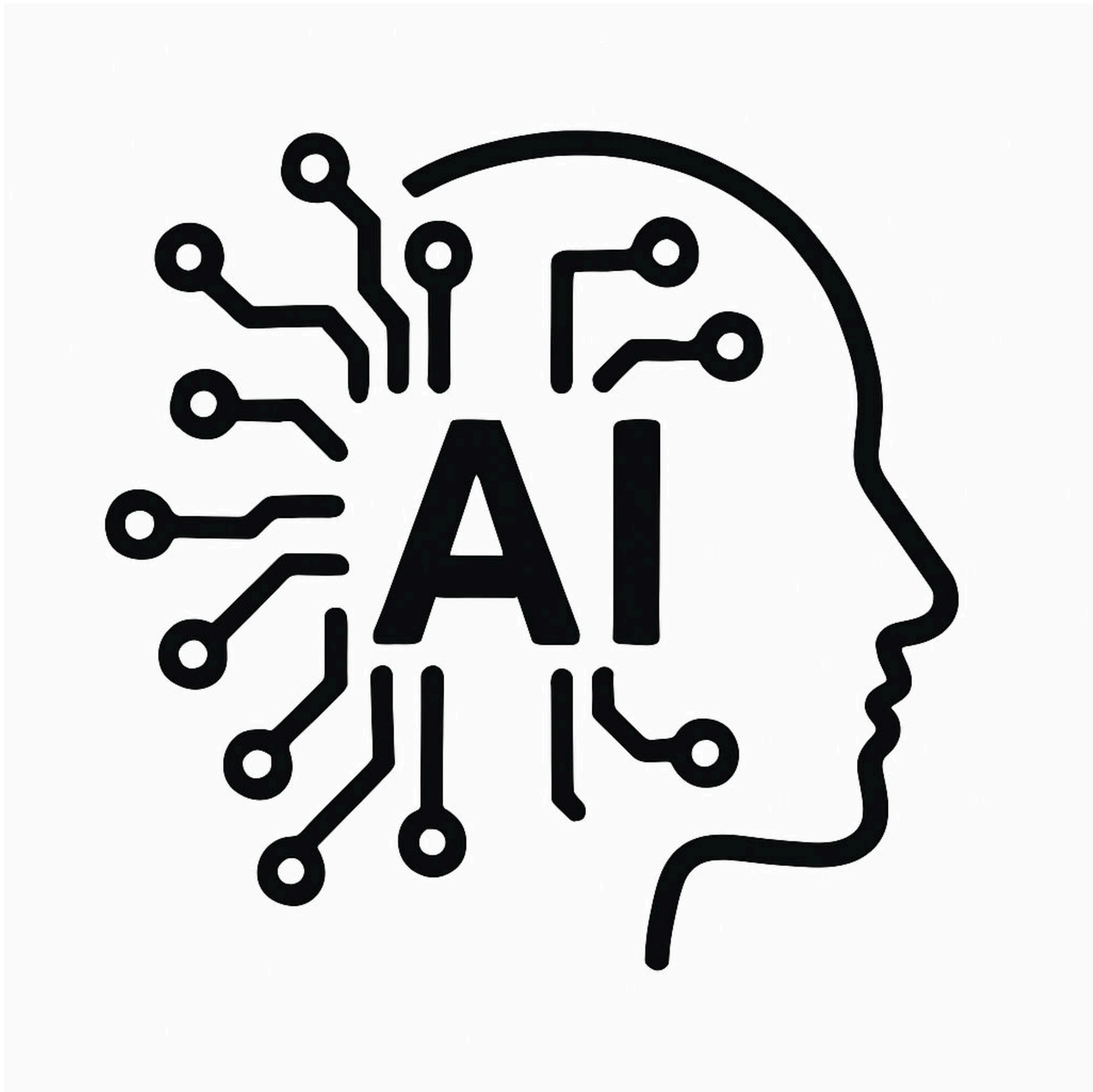
5

Prediction or Decision

AI applies learning to new data

Here are some of the main concepts in AI that every teacher should know.

Understanding how they relate helps you make sense of tools like ChatGPT and what's happening behind the scenes.



AI Family Tree

Artificial Intelligence

This is the broad category. Any computer system that mimics human thinking

Machine Learning

ML is a part of AI. Instead of being programmed step by step, ML systems learn from data.

Deep Learning

A type of ML. It uses neural networks to learn from large amounts of complex data.

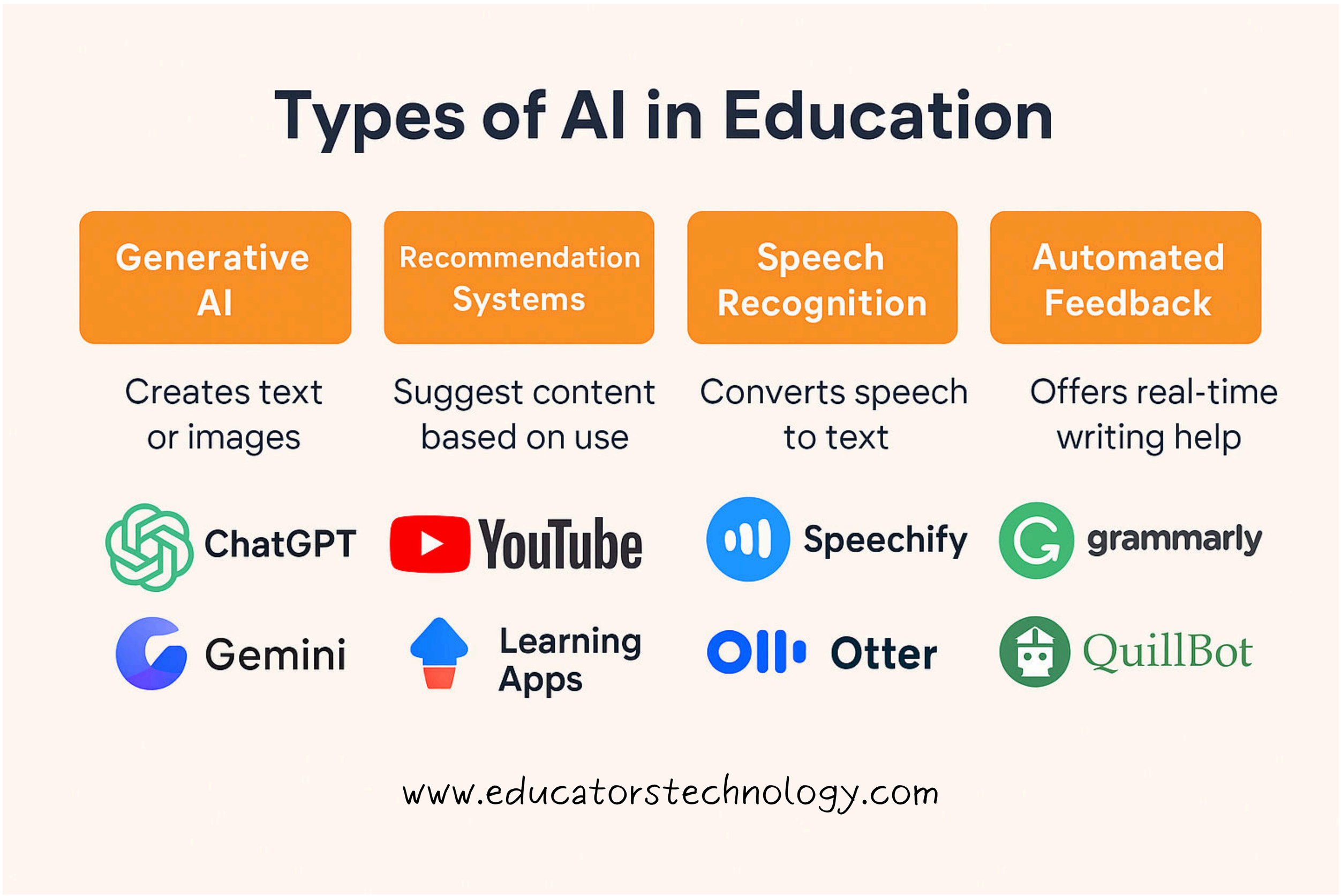
Generative AI

This is a branch of deep learning that generate text, images, code, and more.

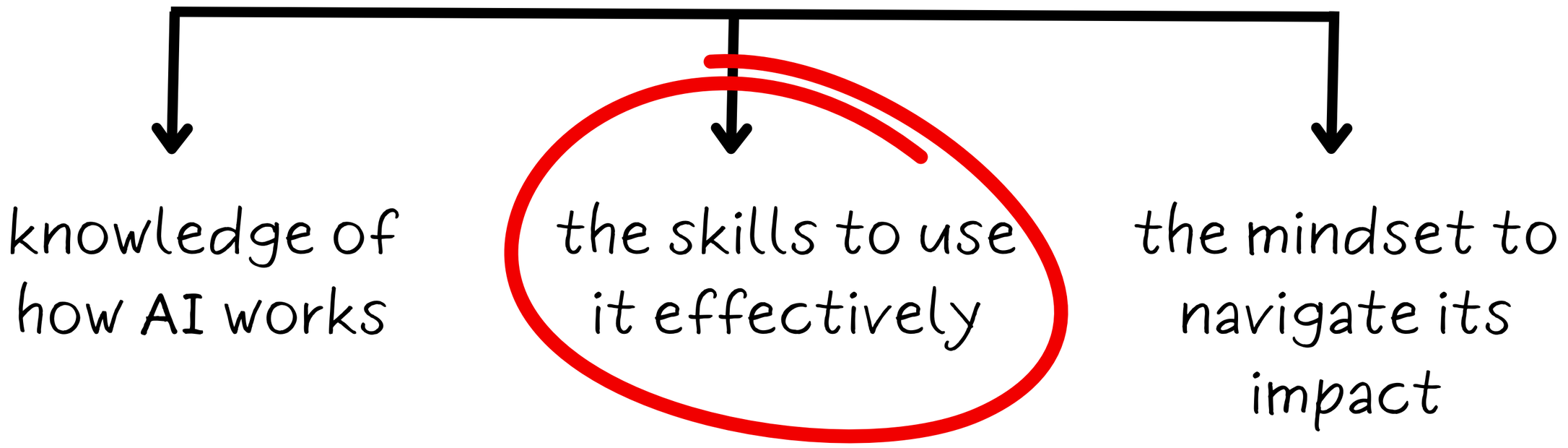
Large Language Models (e.g., ChatGPT)

LLMs like ChatGPT are a specific kind of generative AI trained on massive amounts of text.

Now that we have a basic idea of how AI works, let's look at the different types of AI tools you're likely to come across in education.



AI Literacy



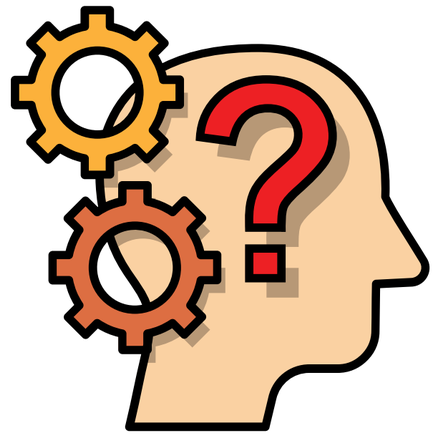
Now let's move on to the second component of the definition: the skills we need to work with AI effectively in real-world settings.

Important AI Skills for Teachers

Problem Solving

Using AI to identify challenges, explore solutions, and support decision-making in teaching and learning.

Critical Thinking



Analyzing and evaluating AI-generated content to determine relevance, accuracy, and usefulness.

Collaboration

Engaging with peers, students, and even AI tools to co-create content, brainstorm ideas, or solve instructional problems

Ethical Awareness

Using AI to identify challenges, explore solutions, and support decision-making in teaching and learning.

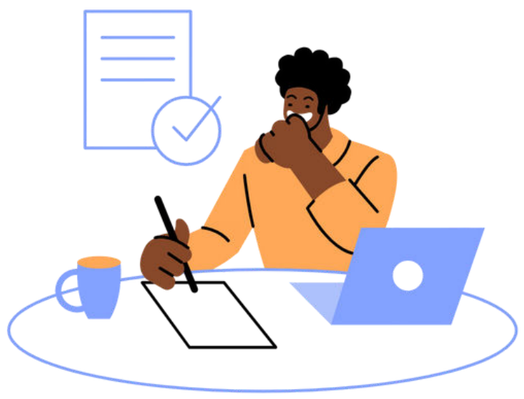
Communication

Clearly and effectively conveying information, instructions, or feedback, sometimes in collaboration with AI tools.

Evaluation

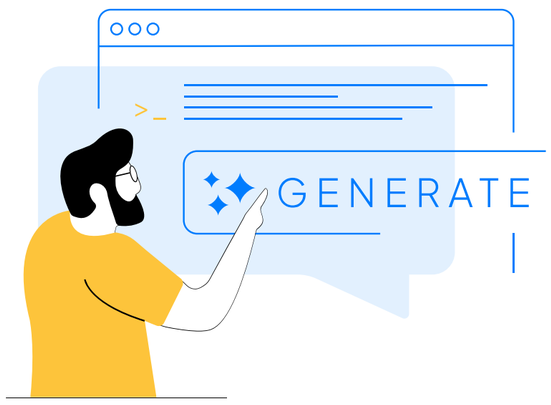
Assessing the quality and appropriateness of AI outputs, tools, and recommendations.

Digital Literacy



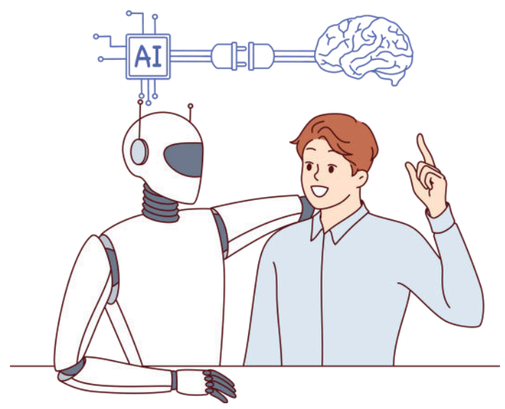
Understanding how AI fits within the broader digital ecosystem, tools, platforms, and data flow.

Prompt Engineering



Crafting clear, precise prompts to guide AI tools toward useful, context-aware responses.

AI Collaboration

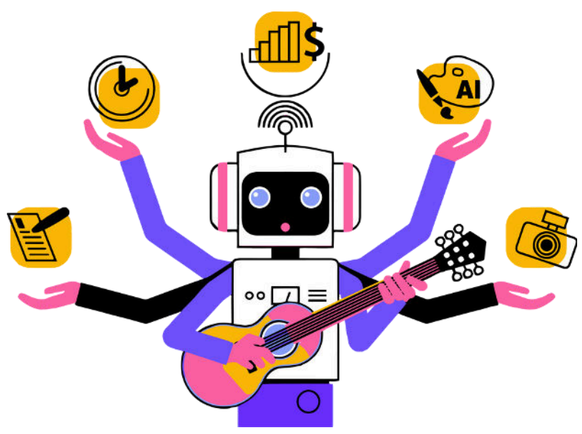


Working with AI as a thinking partner, not using it as a replacement, but as a tool to extend your capacity.

Instructional Integration

Applying AI in ways that support sound pedagogy (e.g., lesson planning, differentiation, assessment, etc)

Task Automation



Using AI to save time by automating repetitive tasks like writing emails, generating rubrics, or summarizing content.

AI Discernment

Knowing when AI adds value and when it doesn't. Recognizing hype and setting realistic expectations.

Resourcefulness

Navigating and experimenting with various AI tools to meet instructional goals creatively and efficiently.

Empathy

Anticipating how AI use may affect students emotionally, socially, and cognitively—and adjusting practices accordingly.

12 Important AI Skills for Teachers

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the skills to use it effectively

the mindset to navigate its impact

Now let's move on to the third component of the definition: the attitudes we bring to working with AI.

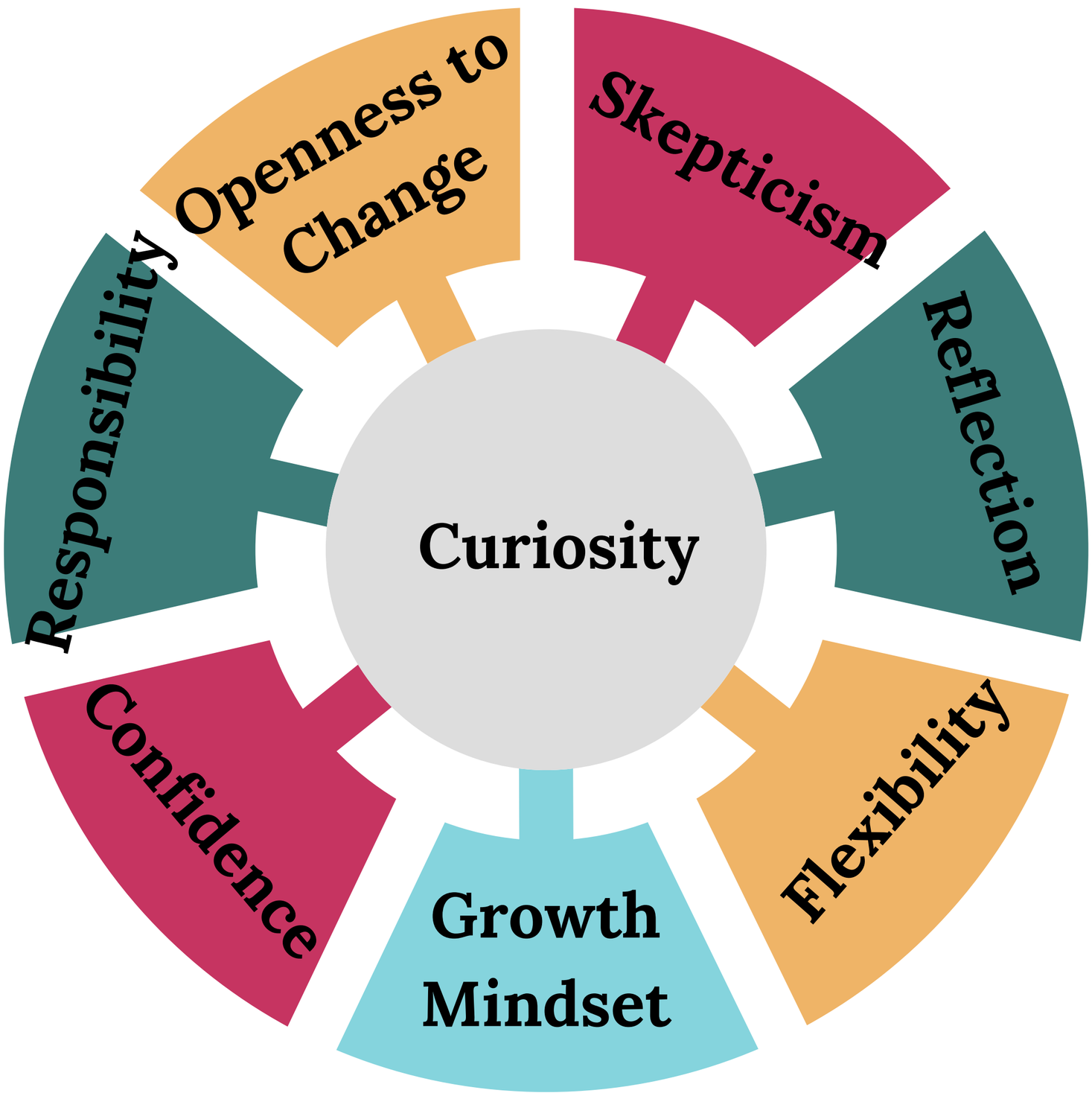
How we think about AI matters just as much as how we use it.

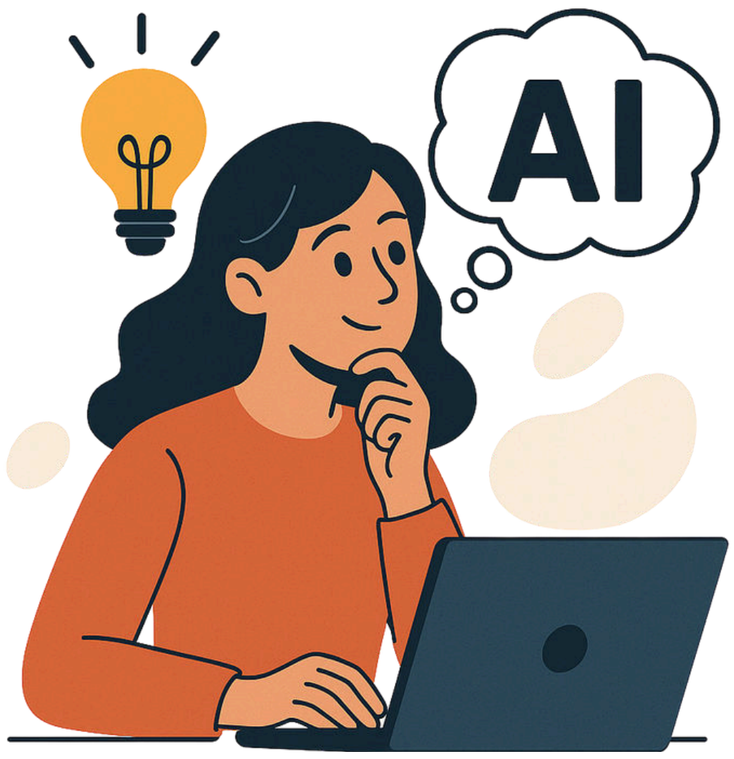
AI MINDSET

An important part of AI literacy for teachers has nothing to do with coding, prompts, or AI tools. It has everything to do with mindset.

To use AI meaningfully and responsibly, teachers need to develop a set of attitudes that guide how they think about, approach, and adapt to this technology.

Here are 8 key attitudes that form the foundation of an AI-friendly mindset.





1

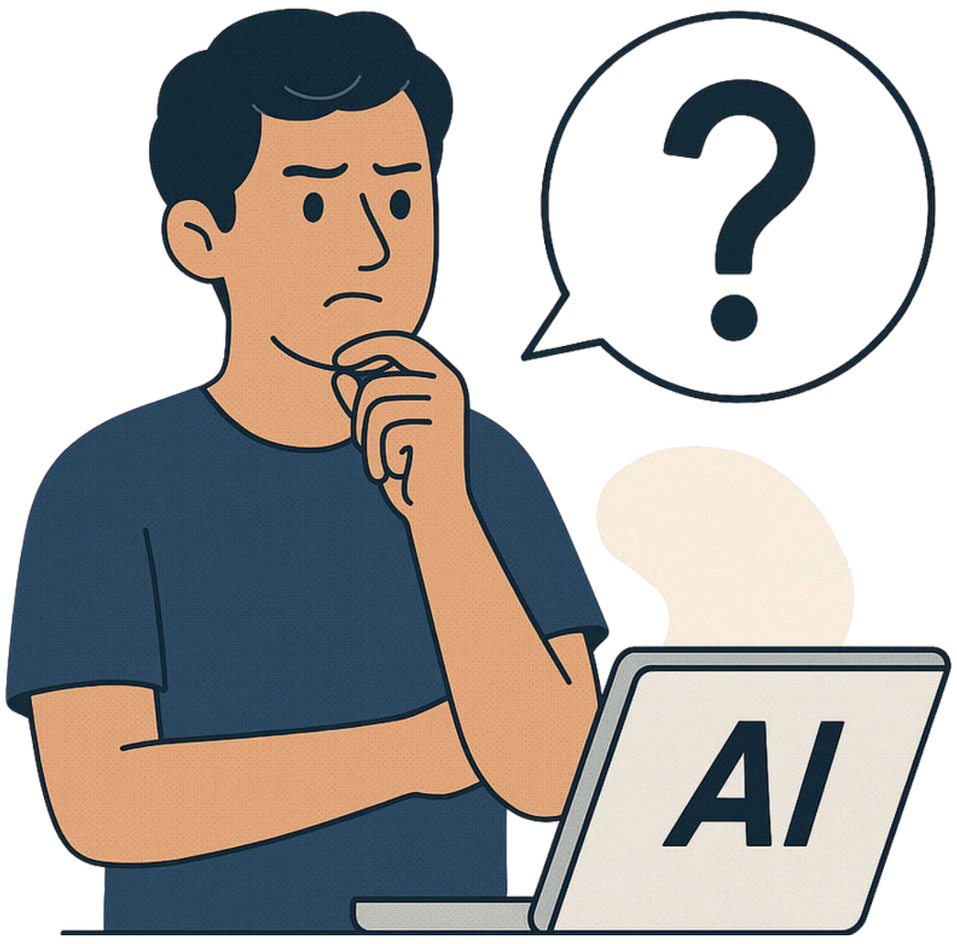
Curiosity

A willingness to explore how AI works and what it can do in your teaching practice.

2

Openness to Change

Accepting that AI will reshape aspects of education and being ready to adapt rather than resist.



3

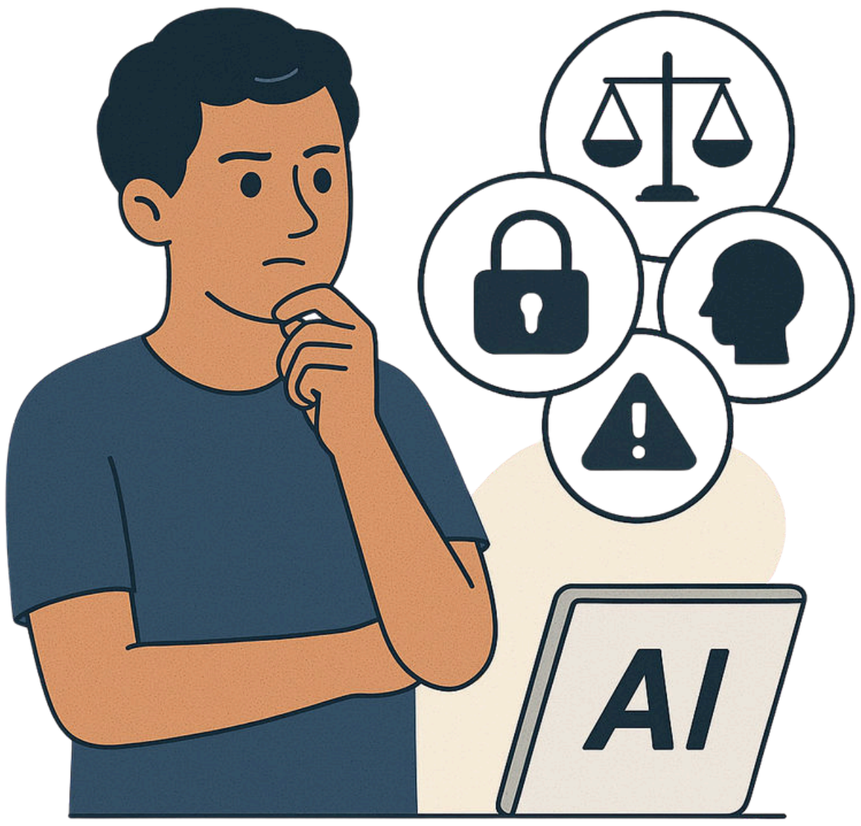
Skepticism

Not taking AI outputs at face value. Questioning results, checking for bias, and verifying accuracy.

4

Responsibility

Understanding your role in using AI ethically, especially when it affects students' data, learning, or wellbeing.



5

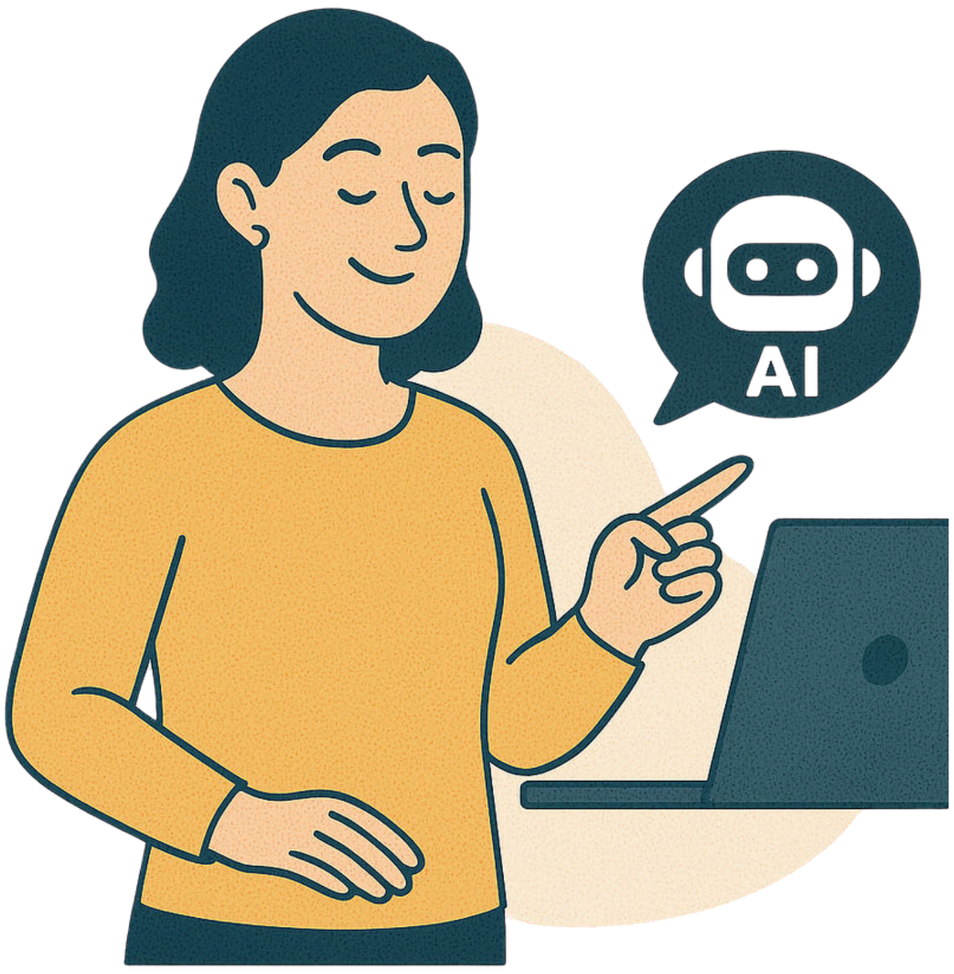
Growth Mindset

Seeing AI as a tool that you can learn to use over time, not something you have to master all at once.

6

Flexibility

Being able to shift between tools, approaches, or strategies depending on what works best for your students.



7

Confidence

Trusting your professional judgment when deciding when and how to use AI and when not to.

8

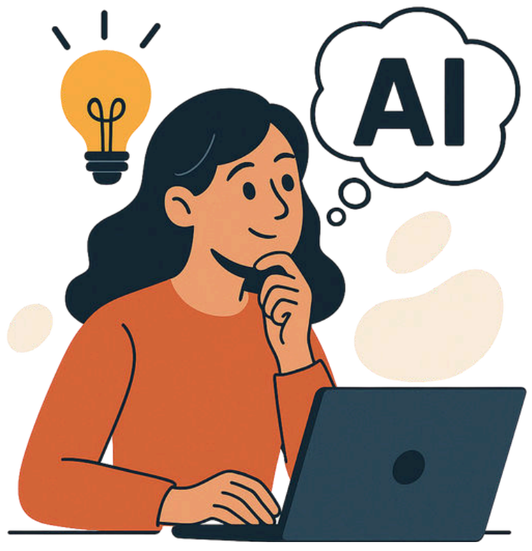
Reflection

Thinking critically about the impact of AI on your practice, your students, and your values as an educator.

Cultivating an AI-Friendly Mindset

Attitudes for using AI with confidence and care.

Curiosity



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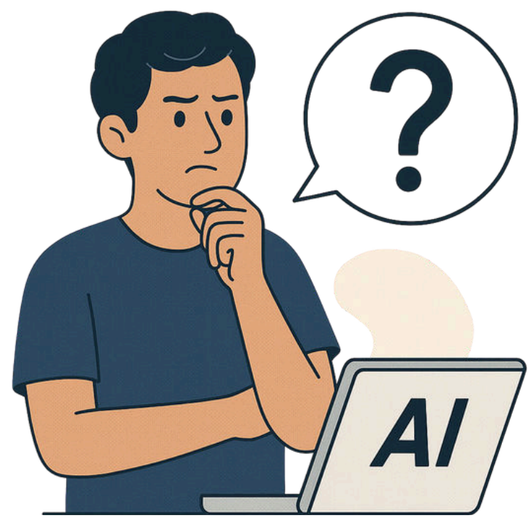

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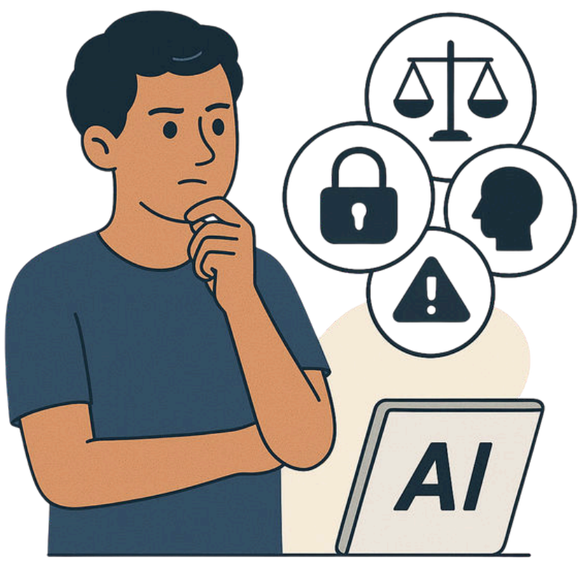

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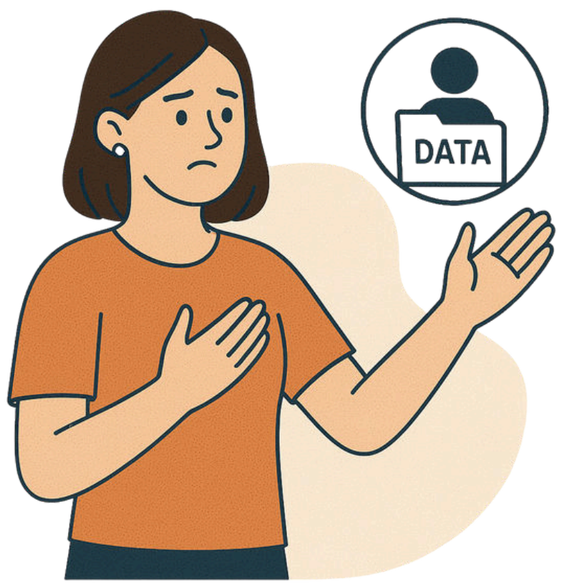

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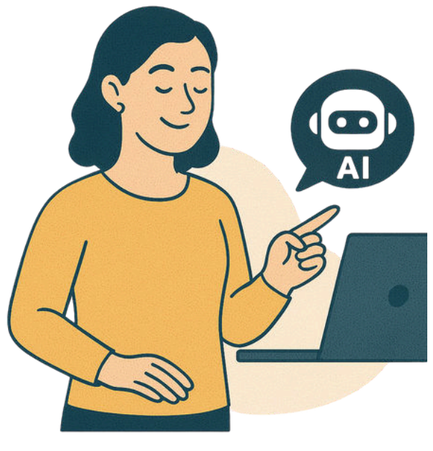

Confidence

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Reflection

Thinking critically about the impact of AI on your practice, your students, and your values as an educator.

Personalized learning

Tailors content to each student's needs and pace.

Data-driven insights

Tracks performance to guide instruction.

Faster feedback

Provides instant responses and corrections.

Improved accessibility

Supports learners with disabilities or special needs.

Time-saving for teachers

Automates routine tasks and planning.

Benefits of AI in Education

Support for diverse learners

Adapts to varied backgrounds and abilities.

Engaging content creation

Helps design interactive lessons and visuals.

24/7 learning support

Offers help anytime, anywhere.

Language translation and support

Breaks language barriers in learning.

Automated grading

Speeds up assessment with accuracy.

www.educatorstechnology.com

AI Limitations in Education

Bias in responses

AI can reflect and amplify biases found in its training data.

Hallucinated or false information

AI sometimes generates content that sounds right but is factually wrong.

Limited critical thinking

AI doesn't reason or evaluate like a human, it mimics patterns.

Data privacy concerns

Using AI tools often involves sharing sensitive student information.

Over-reliance by students

Students may lean on AI instead of developing their own thinking.

Unequal access to technology

Not all students or schools have reliable access to AI tools.

Difficulty with nuance or emotions

AI can miss tone, sarcasm, or emotional subtleties.

May reinforce stereotypes

AI can unknowingly replicate harmful cultural or social assumptions.

Lack of pedagogical context

AI struggles to fully grasp classroom dynamics or learner intent.

Requires constant oversight

Outputs need regular monitoring and correction by educators.

Educators Technology

www.educatorstechnology.com

AI Simply Explained for Teachers

Prepared by Med Kharbach, PhD
www.educatorstechnology.com

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What is Intelligence?

“the computational part of the ability to achieve goals in the world. Varying kinds and degrees of intelligence occur in people, " (McCarthy, 2007, p. 2)

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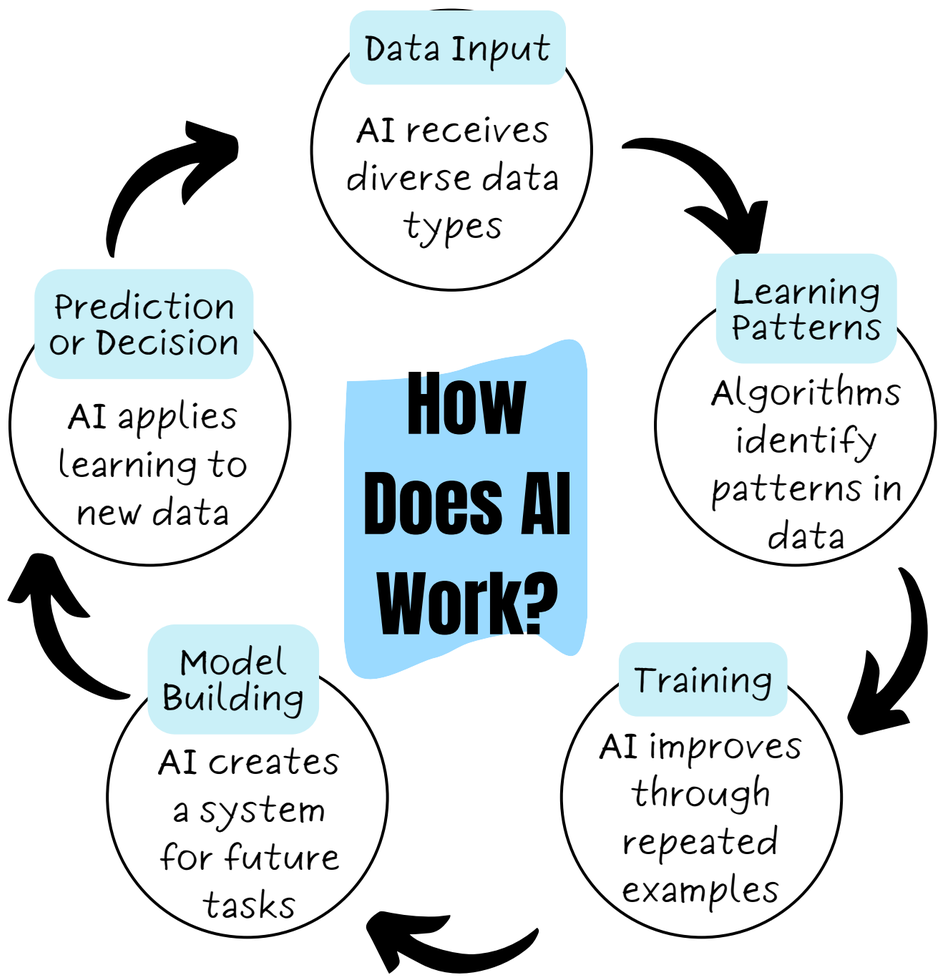
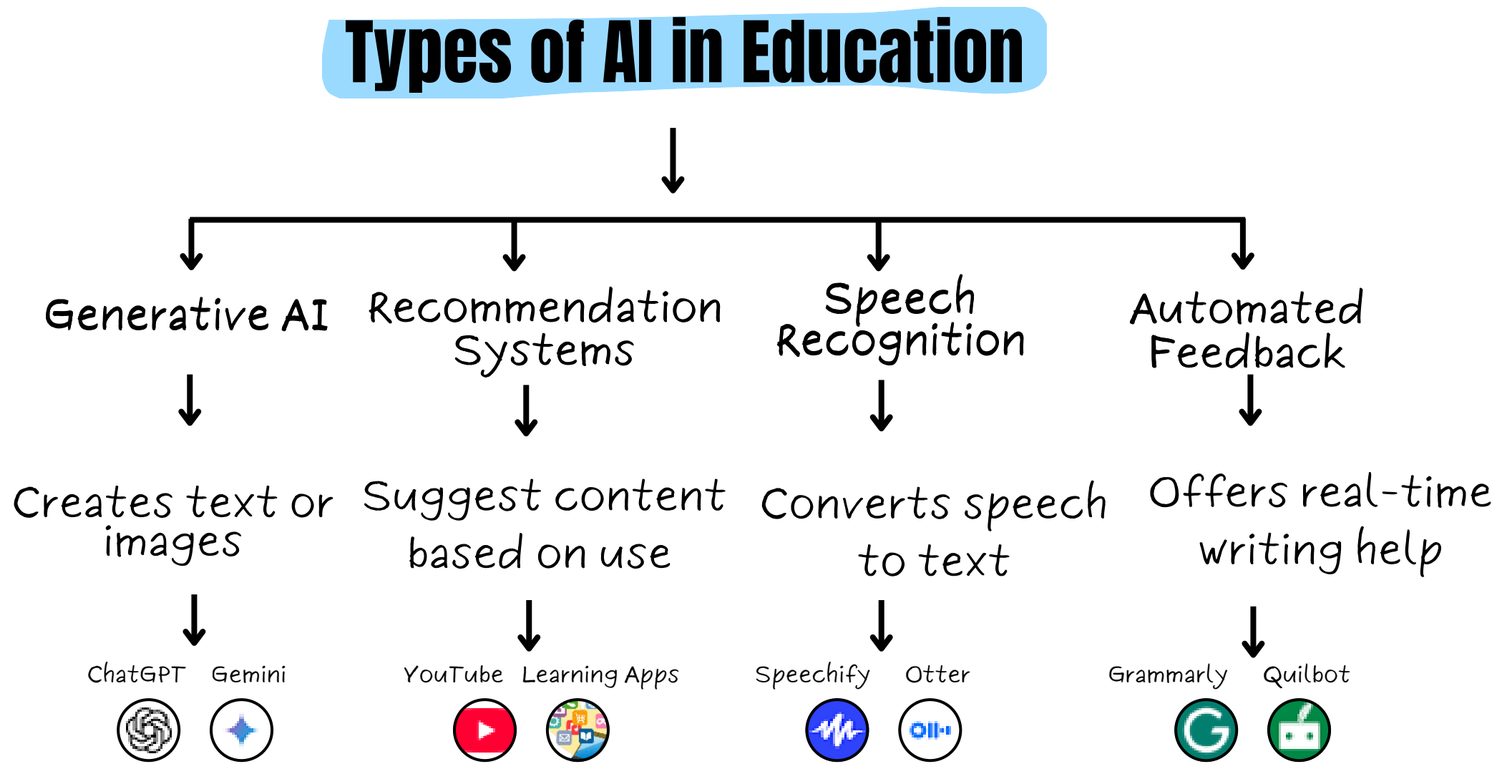
How Does AI Work?



Types of AI in Education



AI Family Tree

- Artificial Intelligence
- Machine Learning
- Deep Learning
- Generative AI
- Large Language Models (e.g., ChatGPT)

Privacy Tips

- Review AI output critically
- Encourage human-AI collaboration
- Avoid using AI to grade subjective work
- Teach students about AI limitations
- Credit AI-generated content when appropriate
- Use AI tools that align with school policies.

Benefits of AI in education

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- OECD (2025). Empowering learners for the age of AI: An AI literacy framework for primary and secondary education (Review draft). OECD. Paris. https://ailiteracyframework.org
- McCarthy, J. (2007). What is artificial intelligence? Stanford University. https://www-formal.stanford.edu/jmc/whatisai.pdf