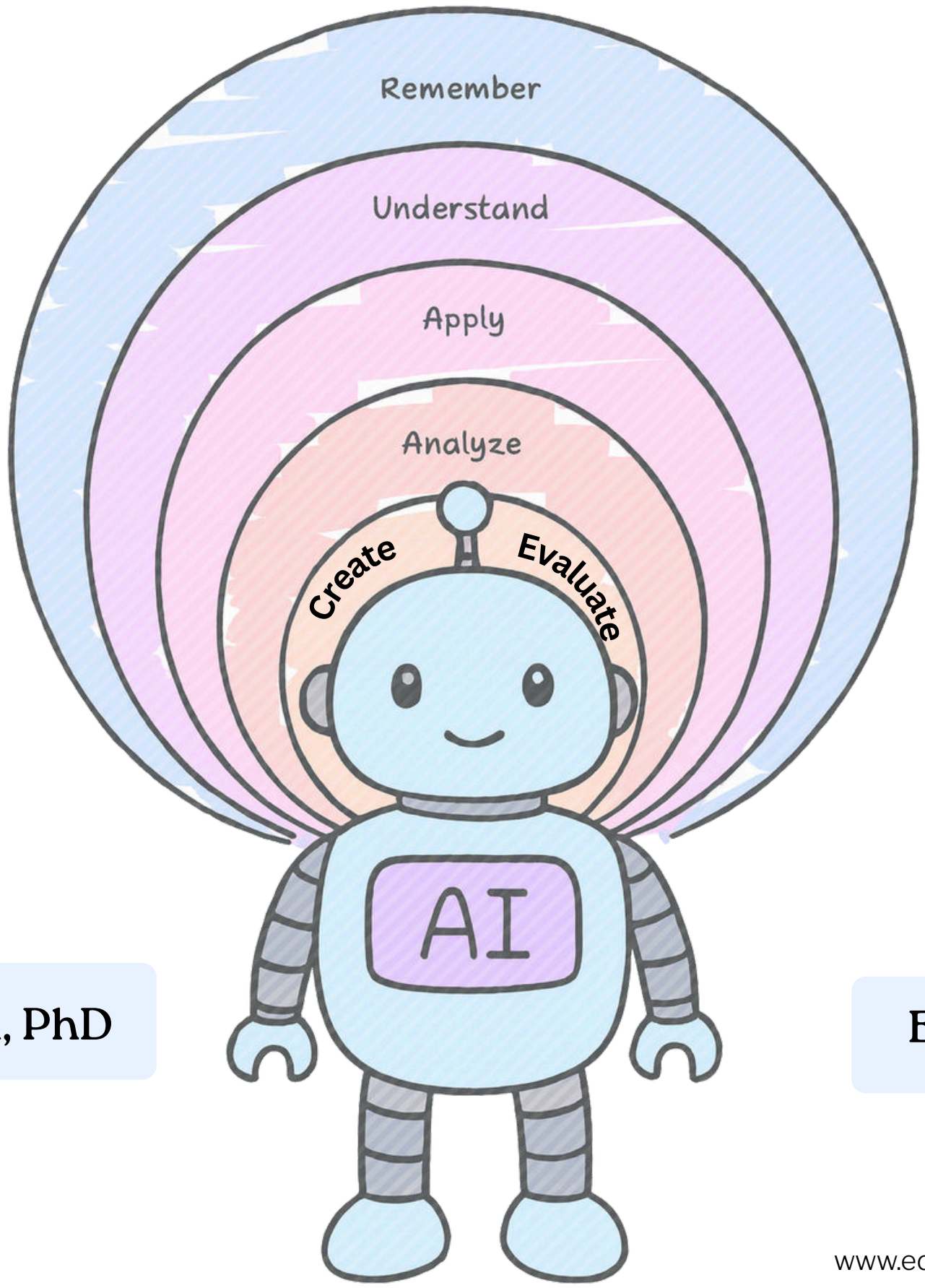
Revised Bloom's Taxonomy & AI Literacy

Linking thinking skills with AI tools for deeper learning

- Remember
- Understand
- Apply



- Analyze
- Evaluate
- Create

By Med kharbach, PhD

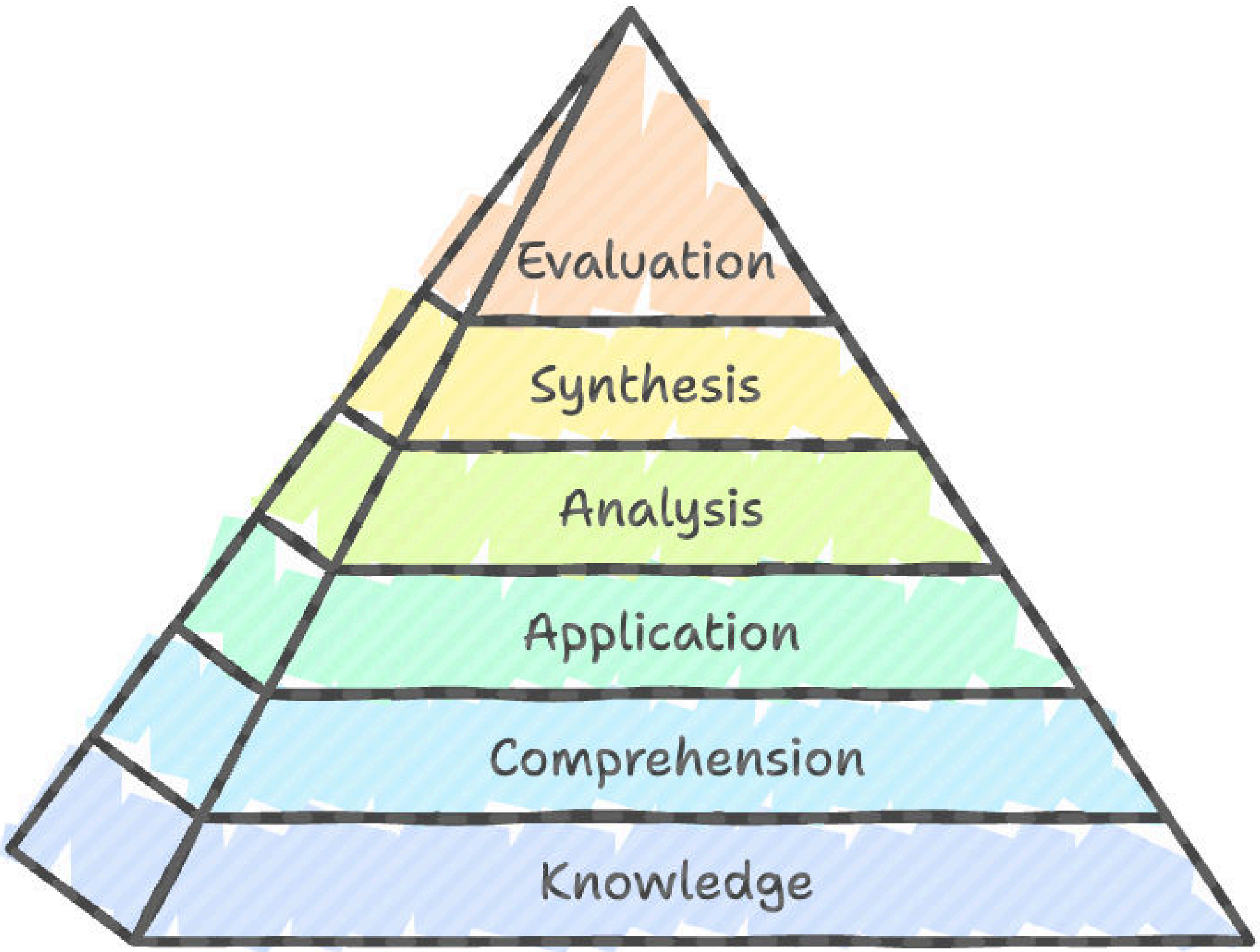
EdAI Series

Educators Technology

www.educatorstechnology.com

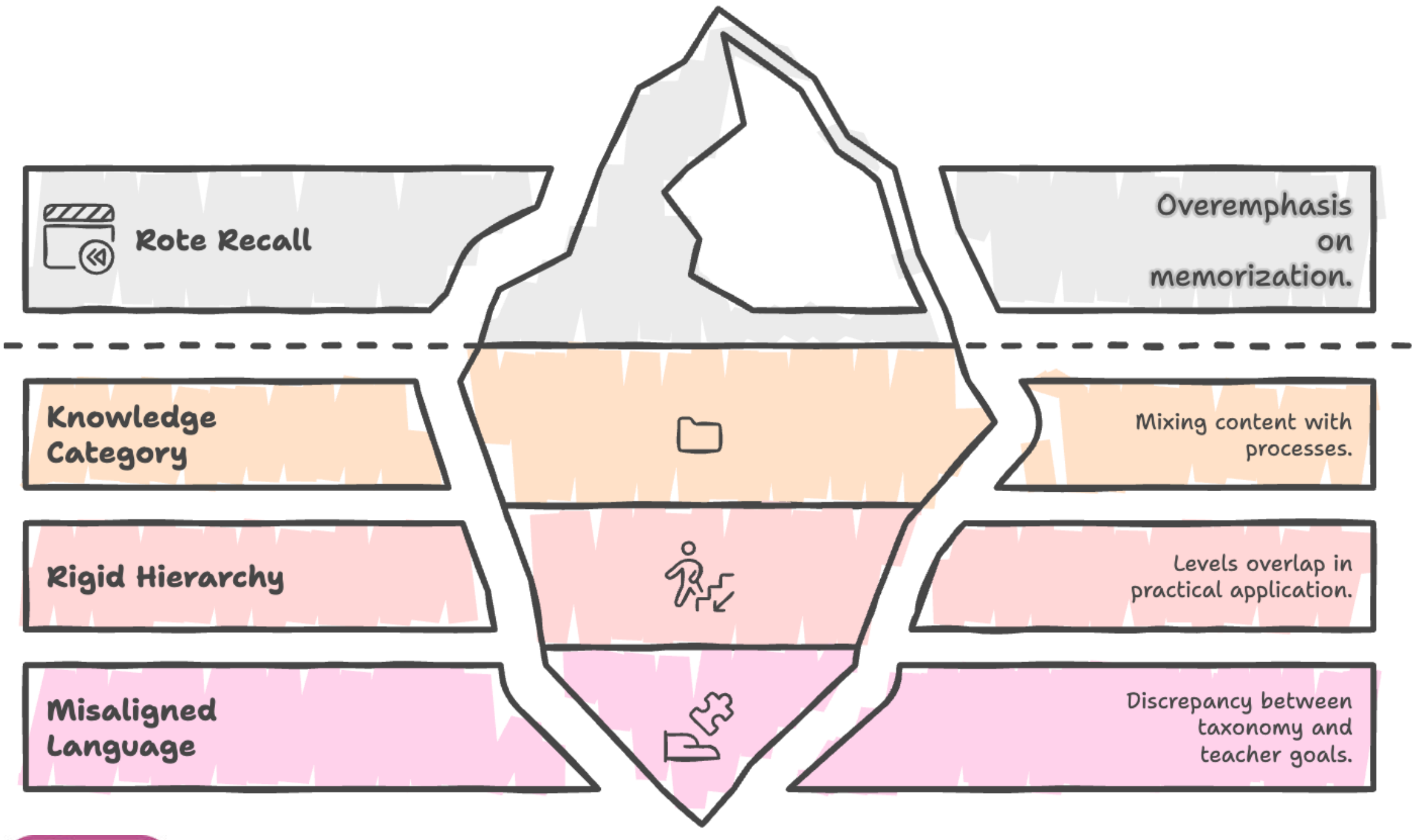
Bloom's Original Taxonomy (1956)

Bloom's Taxonomy, introduced in 1956 by Benjamin Bloom and colleagues, provided educators with a common framework for defining and aligning learning goals, teaching, and assessment. It organized cognitive skills into six levels: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation.

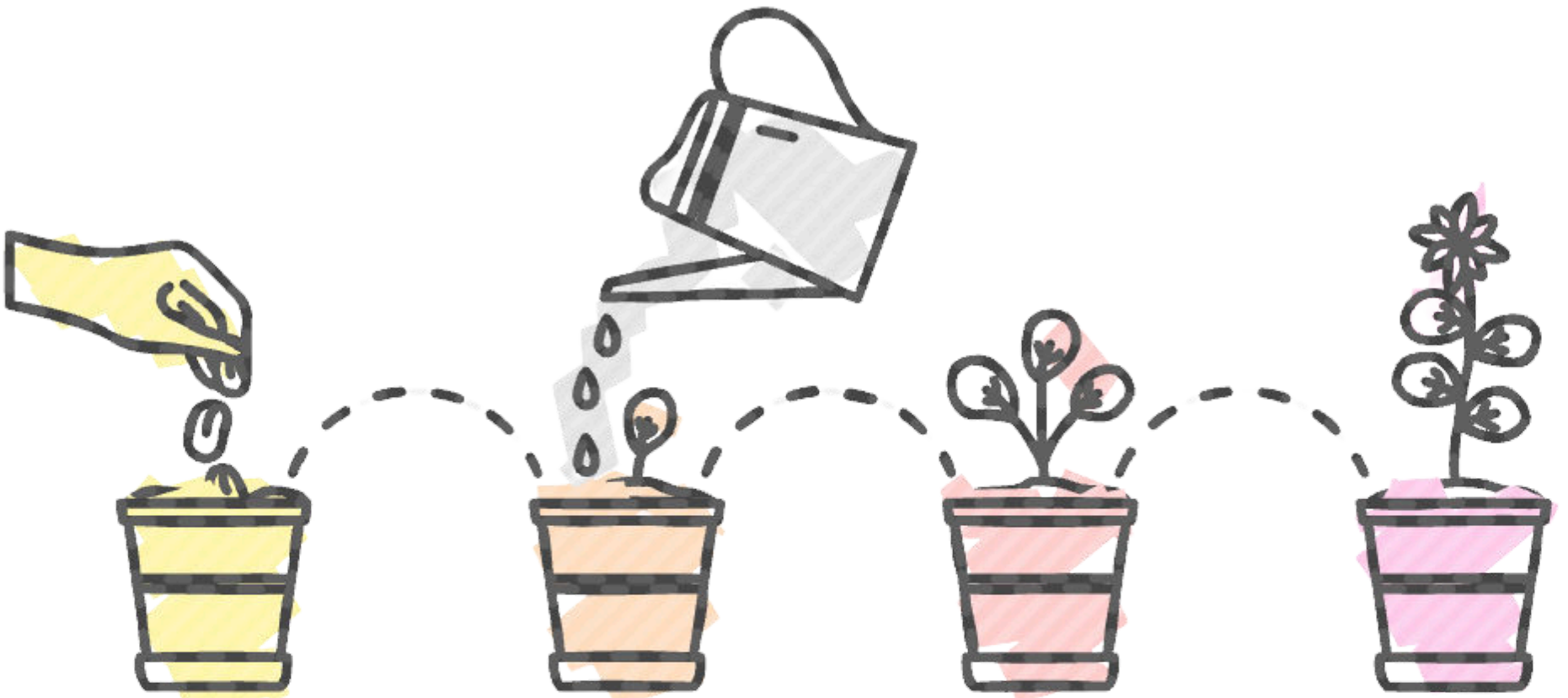


Critique of the Original Taxonomy

- ✓ Overemphasis on rote recall, with limited focus on higher-order thinking.
- ✓ "Knowledge" category mixed content with processes, causing inconsistency.
- ✓ Hierarchy seen as too rigid, though levels often overlap in practice.
- ✓ Language sometimes misaligned with how teachers describe learning goals.



"We don't start by remembering things, then understand them, then apply them, and move up the pyramid in steps as our capacity grows. Instead, much of the time we build understanding by applying knowledge and by creating things."
(Berger, 2018)



Remembering

Initial knowledge acquisition

Applying Knowledge

Using knowledge in practical situations

Creating Things

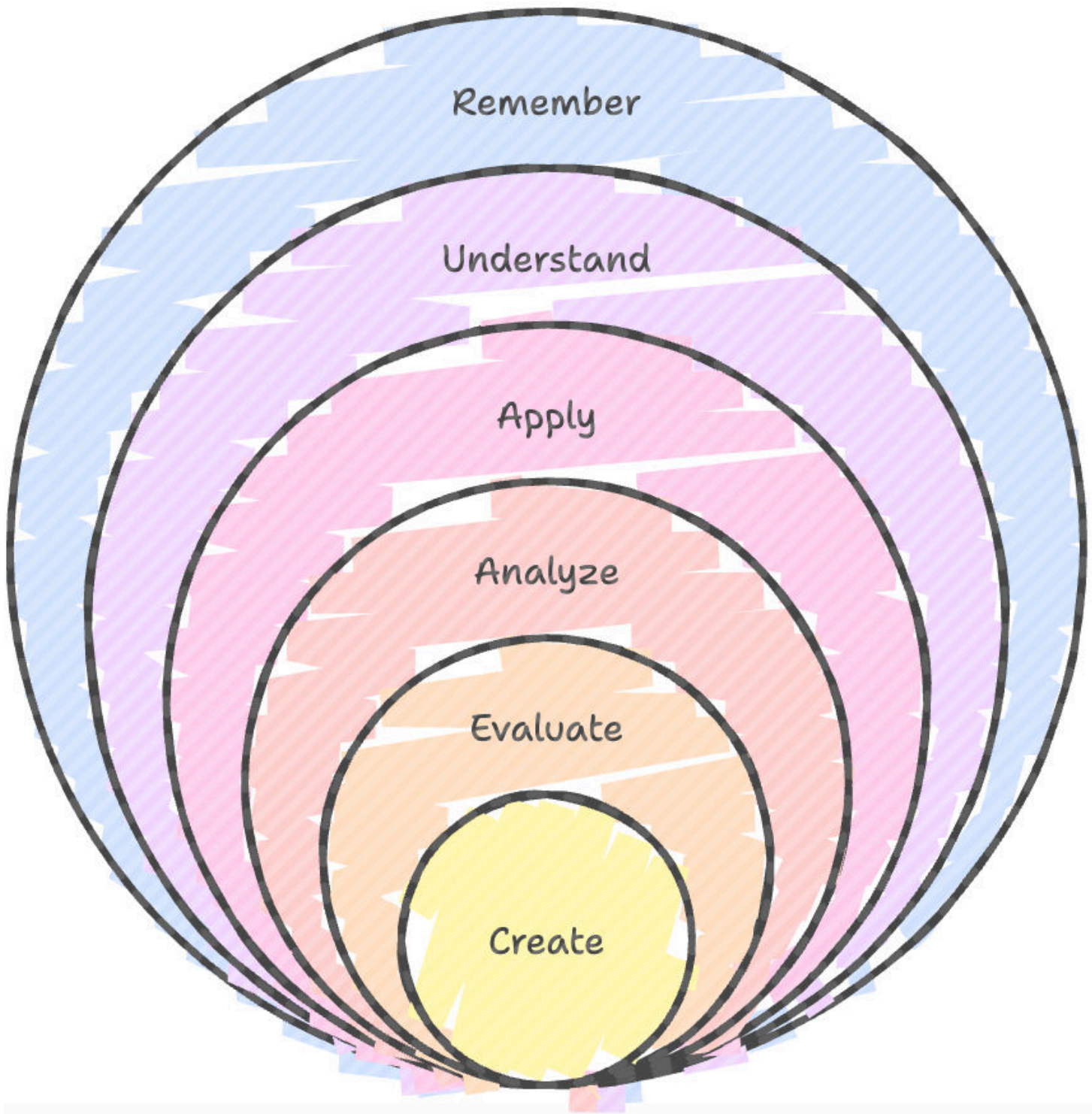
Generating new ideas and products

Understanding

Deep comprehension and insight

Bloom's Revised Taxonomy

The Revised Bloom's Taxonomy, introduced in 2001 by Anderson and Krathwohl, updated the original framework by adding two dimensions: a Knowledge Dimension (factual, conceptual, procedural, and metacognitive) and a Cognitive Process Dimension (remember, understand, apply, analyze, evaluate, create). Categories were reframed as action verbs, with "Synthesis" renamed and elevated to "Create" as the highest level. This two-dimensional model gave educators a clearer tool for aligning objectives, instruction, and assessment while fostering deeper learning.



Bloom's Revised Taxonomy

Create

Generate new ideas or products

Evaluate

Assess and judge the value of ideas

Analyze

Break down complex information into parts

Apply

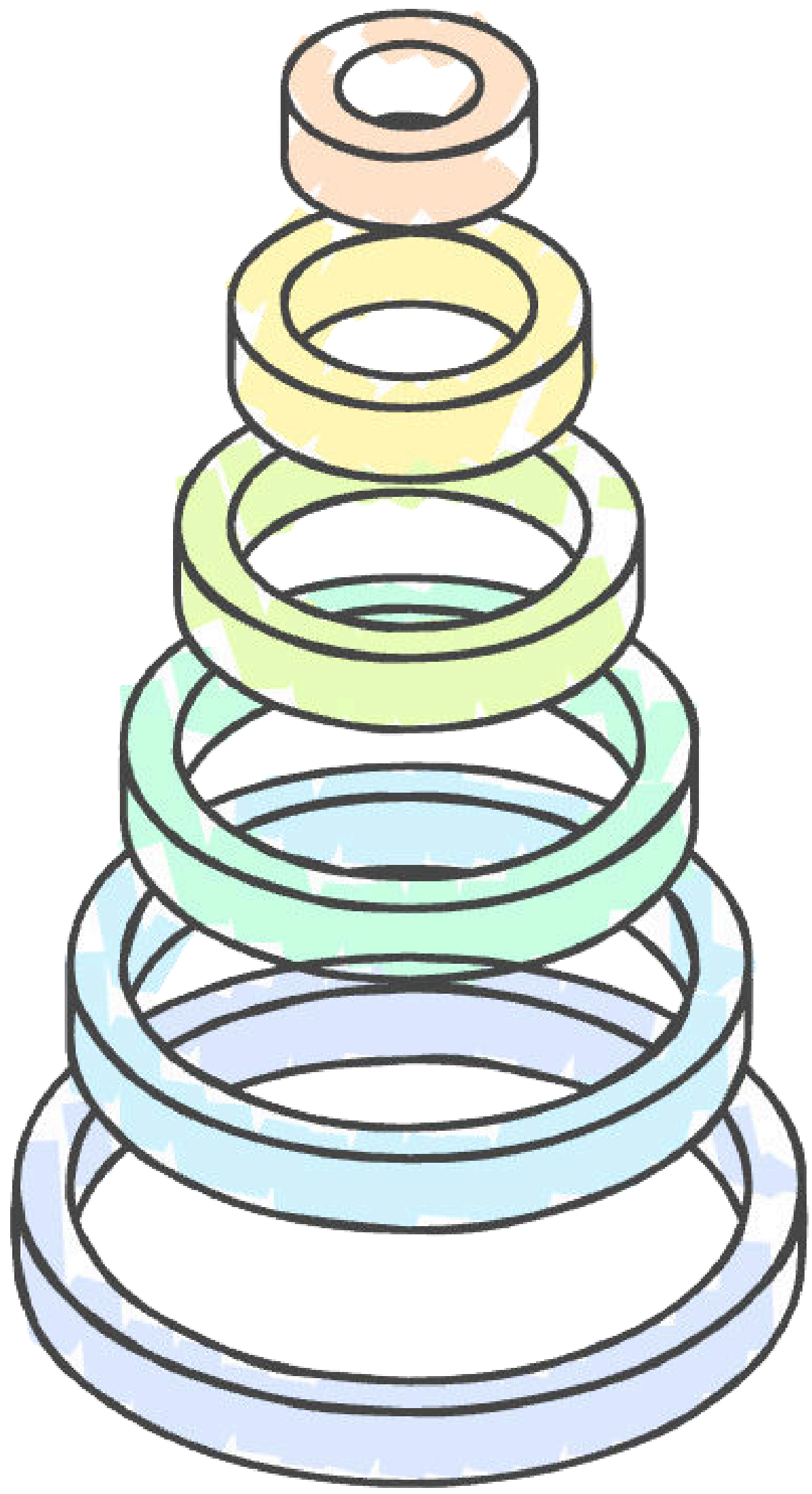
Use knowledge in new situations

Understand

Grasp meaning and interpret concepts

Remember

Recall basic facts and information



Uses of Bloom's Taxonomy

Teachers	Educators use the taxonomy to write clear learning objectives, plan lessons that move students toward higher-order thinking, and develop appropriate assessments.
Learners	The framework helps students structure their studying, understand expectations at different levels of learning, and gauge their own competence in a subject.
Instruction	By using the action verbs linked to each level, teachers can design purposeful learning activities that build on foundational knowledge and skills.

Level

Create

How AI Can Help

- Create a lesson plan for teaching a concept to younger students
- Design an assessment that measures student understanding in a new way
- Develop a unit plan connecting multiple subjects around one theme
- Generate original problems or scenarios for students to solve
- Construct a rubric for evaluating student projects
- Plan a field trip experience with pre- and post-activities
- Produce instructional materials (videos, infographics, guides) for a topic
- Design a classroom management system for specific student needs
- Create a parent communication strategy for your subject area
- Develop intervention activities for struggling learners

AI Tools

ChatGPT

Claude

Canva AI

Gemini

Poe

Gamma

Educators Technology

Level

Evaluate

How AI Can Help

- Have AI provide criteria and frameworks for students to judge the quality of sources or arguments
- Ask AI to model how to critique creative work, research papers, or problem solutions
- Use AI to help students assess the strengths and weaknesses of different approaches or strategies
- Have AI demonstrate how to defend a position using evidence and logical reasoning
- Ask AI to show students how to justify their choices or conclusions with supporting details
- Use AI to help students appraise the credibility and bias of news articles or websites
- Have AI model peer review processes by critiquing sample student work
- Ask AI to help students judge the effectiveness of different solutions to real-world problems.

AI Tools

ChatGPT

Claude

Scite AI

Gemini

Consensus

Eduaide

Educators Technology

Level

AI Y9

How AI Can Help

- Use AI to break down complex texts into main ideas, supporting details, and underlying themes
- Have AI compare and contrast different historical perspectives on the same event
- Ask AI to organize student assessment data by learning standards and identify patterns
- Use AI to differentiate between fact and opinion in news articles or primary sources
- Have AI deconstruct writing samples to identify rhetorical strategies and techniques
- Ask AI to analyze student work samples and categorize common errors or misconceptions
- Use AI to compare curriculum standards across different grade levels or states
- Have AI organize research sources by credibility, bias, and relevance to your topic.

AI Tools

ChatGPT

Claude

Elicit

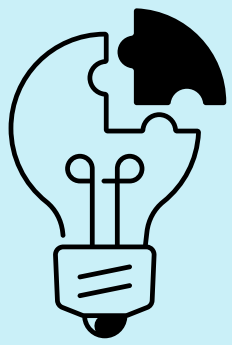
Perplexity

Scholarcy

Gemini

Educators Technology

Level



Apply

How AI Can Help

- Use AI to generate practice problems that implement specific mathematical concepts
- Have AI demonstrate step-by-step solutions to science experiments or math procedures
- Ask AI to solve sample problems using the same method you taught in class
- Use AI to implement grammar rules by generating correct and incorrect sentence examples
- Have AI perform calculations or execute scientific formulas with real-world data
- Ask AI to demonstrate how historical events apply to current situations
- Use AI to execute writing techniques by creating examples in different styles or genres
- Have AI implement classroom procedures by walking through scenarios step-by-step.

AI Tools

ChatGPT

Claude

MagicSchool

Gemini

Photomath

Gamma

Level

Understand

Educators Technology

How AI Can Help

- Have AI summarize complex readings or research articles in student-friendly language
- Ask AI to explain difficult concepts using analogies or metaphors students can relate to
- Use AI to interpret data sets, graphs, or charts and explain what they show
- Have AI classify vocabulary words, historical events, or scientific phenomena into categories
- Ask AI to compare different theories, characters, or historical periods side-by-side
- Use AI to exemplify abstract concepts with concrete, relatable examples
- Have AI paraphrase complex instructions or academic texts for different reading levels
- Ask AI to explain the same concept multiple ways for different learning preferences.

AI Tools

ChatGPT

NotebookLM

Gemini

Brisk Teaching

Otter AI

Elicit

Level

How AI Can Help

Remember

- Have AI generate flashcards for key vocabulary terms, dates, or formulas
- Ask AI to create lists of important facts, names, or concepts for study guides
- Use AI to define technical terms or academic vocabulary in simple language
- Have AI quiz students on factual recall with multiple choice or fill-in-the-blank questions
- Ask AI to identify key elements, characters, or components in texts or images
- Use AI to create memory aids like mnemonics or acronyms for lists and sequences
- Have AI repeat important information in different formats (visual, auditory, written)
- Ask AI to generate practice exercises for recognizing patterns, symbols, or examples.

AI Tools

QuizGPT

Quizlet

Study Mode

Kahoot

Quizizz

Khanmigo

AI and Bloom's Revised Taxonomy

Practical ways AI supports every stage of learning

Prepared by Med Kharbach, PhD
www.educatorstechnology.com

Level	Key Verbs	How AI Can Help	AI Tools
Create	Design, generate, plan, produce, construct, develop	• Design an assessment that measures student understanding in a new way • Develop a unit plan connecting multiple subjects around one theme • Construct a rubric for evaluating student projects	ChatGPT, Claude, Canva AI, Gemini, Poe, Gamma
Evaluate	Judge, critique, assess, defend, justify, appraise	• Have AI provide criteria and frameworks for students to judge the quality of sources or arguments. • Use AI to help students assess the strengths and weaknesses of different approaches or strategies • Have AI model peer review processes by critiquing sample student work	ChatGPT, Claude, Scite AI, Gemini, Consensus, Eduaide
Analyze	Differentiate, organize, attribute, compare, contrast, deconstruct	• Have AI compare and contrast different historical perspectives on the same event • Ask AI to differentiate between various learning styles represented in student responses • Ask AI to organize student assessment data by learning standards and identify patterns	ChatGPT, Claude, Elicit, Perplexity, Scholarcy, Gemini
Apply	Use, implement, demonstrate, solve, execute, perform	• Use AI to generate practice problems that implement specific mathematical concepts • Have AI demonstrate step-by-step solutions to science experiments or math procedures • Use AI to implement grammar rules by generating correct and incorrect sentence examples	ChatGPT, Claude, MagicSchool, Gemini, Photomath, Gamma
Understand	Summarize, explain, interpret, classify, compare, exemplify, paraphrase	• Have AI summarize complex readings or research articles in student-friendly language • Ask AI to explain difficult concepts using analogies or metaphors students can relate to • Use AI to exemplify abstract concepts with concrete, relatable examples	ChatGPT, NotebookLM, Gemini, Brisk Teaching, Otter AI, Elicit
Remember	Recall, list, define, identify, recognize, repeat	• Have AI generate flashcards for key vocabulary terms, dates, or formulas • Use AI to define technical terms or academic vocabulary in simple language • Have AI quiz students on factual recall with multiple choice or fill-in-the-blank questions	QuizGPT, Quizlet, Study Mode, Kahoot, Quizizz, Khanmigo

Prompt Example

Here is an example of a prompt to use to generate a Bloom's taxonomy using an AI Chabot like ChatGPT, Claude, or Gemini

"You are an expert teacher, experienced in developing lesson plans, assessments, and educational frameworks that result in effective and meaningful learning for your students. Your task is to create a Bloom's Taxonomy for [GRADE LEVEL AND SUBJECT] students studying [TOPIC], with [NUMBER] activities for each level of Bloom's Taxonomy. Format as a bulleted list. "

Source:(AI for Education)

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