

# The Evolution of Bloom's Taxonomy in the age of AI

**Generative AI** involves a change in the way **digital technology** is used. This requires a further step in the definition of Bloom's taxonomy, updating it with **new actions arising from the joint work between humans and generative AIs**.



Benjamin Bloom



AI-generated image using Bing application

## New actions

**Planning** actions in order to obtain a result. **Devising** creative strategies.  
**Generating** new uses and applications. **Combining** (tools, instructions and results).  
**Conceiving** an outcome. **Driving** the creative process.  
**Integrating** unexpected results and discoveries. **Designing** prompts. (prompt engineering).

**Validating**, selecting or discarding results. Identifying errors.  
**Using** critical thinking. **Using** the trial-and-error method.  
**Improving** existing applications.  
**Feeding** the model in order to reduce gaps in knowledge.

**Mobilizing** resources (using more than one source). **Reviewing** results.  
**Being aware** that results may be wrong or biased (identifying hallucinations).  
**Comparing** results.

**Integrating** different tools.  
**Integrating** strategies.  
**Operating** through dialogue.  
**Sharing** files involved in the task.

**Adding** parameters to a query.  
**Defining** exactly what you want to obtain from a search.  
**Refining** a query or prompt.  
**Providing** context and/or examples.

**Identifying** the most appropriate tool.  
**Defining** the result to be obtained from a search.  
**Designing** a simple query using natural language (prompting).

**Creating**

**Evaluating**

**Analysing**

**Applying**

**Understanding**

**Remembering**

Bloom's Taxonomy was first created by Benjamin Bloom in 1956 and revised by Lorin Anderson and David R. Krathwohl in 2001. It is one of the most widely used tools in the field of education when it comes to identifying the skills used by humans when carrying out actions and learning. It classifies these skills based on complexity and cognitive level. The digital revolution was well under way when Churches (2008)\* made his proposal to update the taxonomy to take account of the use of digital technology.

(\*) Churches, A. 2008, Bloom's Digital Taxonomy. [https://www.researchgate.net/publication/228381038\\_Bloom's\\_Digital\\_Taxonomy](https://www.researchgate.net/publication/228381038_Bloom's_Digital_Taxonomy)