

## Bloom's taxonomy

A well-known name in the field is Benjamin Bloom. In the 1950s, he identified different orders of questions that led to different levels of thinking; from simple recall of knowledge to more complicated analysis, synthesis and evaluation.

Levels of thinking	Question cues
Knowledge: recall information	State, identify, list
Comprehension: make sense of ideas	Explain, describe, illustrate
Application: apply understanding in new contexts	Apply, solve, predict, infer
Analysis: identify structures & patterns	List component parts, identify cause & effect, distinguish between irrelevant/relevant, compare & contrast
Synthesis: combine ideas to make something new	Generalise, summarise, design, hypothesise, invent, create, compose
Evaluation: make judgements based on reasoned argument	Give arguments for & against, develop criteria, assess, judge, prioritise

Bloom found that over 80% of teacher questions required students to respond only at the simplest 'recall of knowledge' level.

The value of Bloom's taxonomy of thinking skills is that it can help you to see the connection between the sorts of questions you ask and the level of thinking they require of your students. It can help you to plan a lesson or series of lessons based on increasingly higher order questioning. For example:

- *Who invented the light bulb?* (identify)
- *Can you explain how it works?* (describe/explain)
- *What was the impact of this invention?* (analyse)
- *Was it the most significant of the period?* (compare and contrast; evaluate)

Bloom's taxonomy has been recently revised setting synthesising above evaluating in the hierarchy of difficulty.

## The PRICE taxonomy

Here is an alternative taxonomy of thinking skills as promoted by the Secondary Strategy *Leading in Learning* initiative. It organises the skills into five categories, which I have re-ordered to create the acronym 'PRICE' to make them easier to remember.

Categories of thinking	Thinking skills
<b>P</b> rocessing Information	Locate/collect information; sort and classify; sequence; compare and contrast; identify part/whole relationships.
<b>R</b> easoning	Give reasons; draw inferences/make deductions; see relationships; explain; make informed decisions.
<b>I</b> nquiry	Ask questions/define problems; plan/gather data; predict outcomes/consequences; draw/test conclusions.
<b>C</b> reative Thinking	Generate, develop, evaluate ideas; suggest hypotheses; imagine.
<b>E</b> valuation	Set and use criteria; make judgements.

Unlike Bloom's taxonomy, there is no implied hierarchy in the PRICE model and there is 'spill over' between categories so that Creative Thinking involves Evaluation, and Inquiry involves Reasoning. In its favour, PRICE is easy to remember and relates well to the types of lessons that you are likely to teach, e.g. a lesson collecting and understanding information, a series of lessons in which students carry out a group inquiry, or a lesson involving the generation and development of ideas, and so on.

Progression and differentiation for age and ability are characterised not so much by the *type* of thinking skill involved but by the familiarity of the context, the complexity of the subject matter and the degree of support required.