

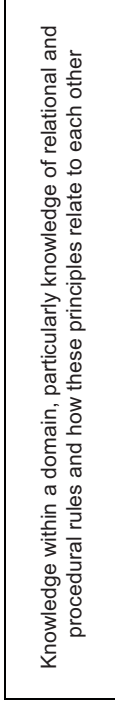
Strategies for problem-solving Instruction

By Alejandra Magana

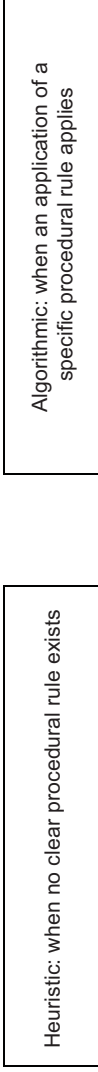
Type of learning outcome



Key ingredient



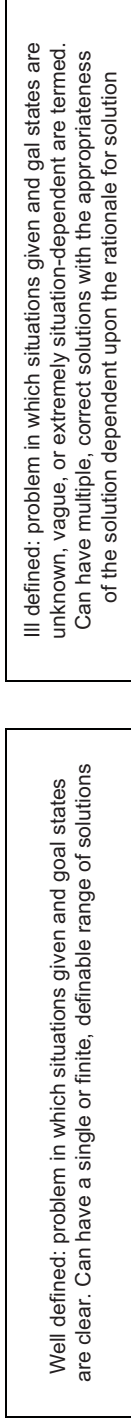
Types regarding its solution



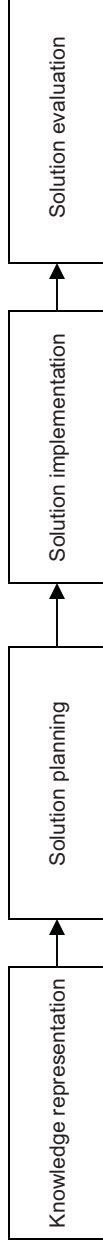
Types regarding its complexity



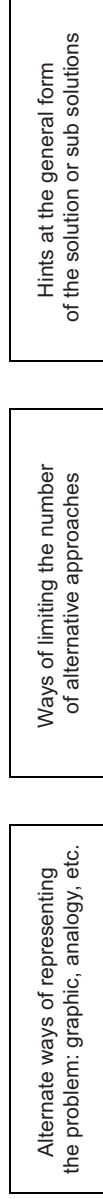
Types regarding its clarity



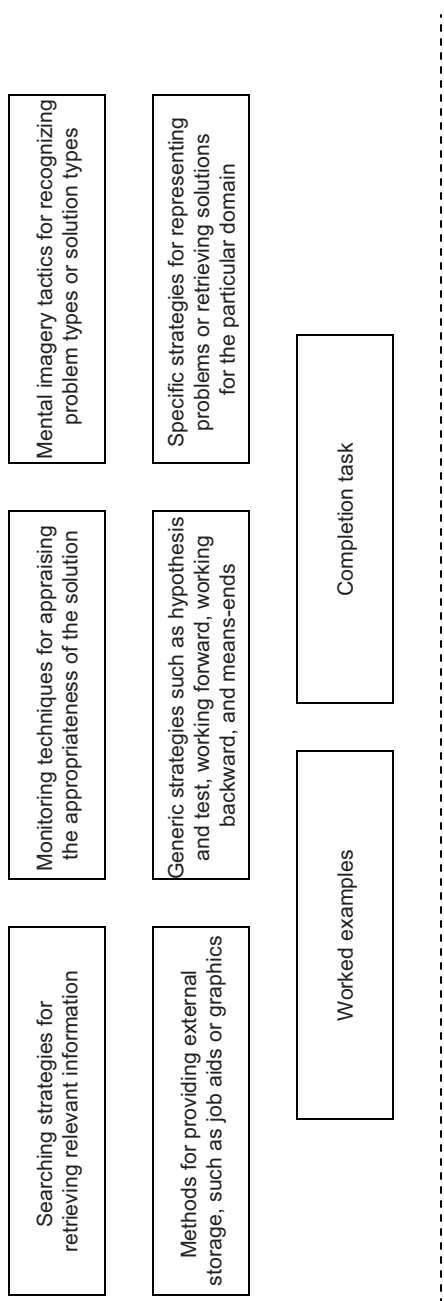
Cognitive processing



Micro strategies



Micro strategies contd.



Socratic dialogue: to guide student to attainment of derived learning through interaction with an expert or mentor whose role is to provide instances and guiding questions

Expert systems: computer-based programs which, when given data, are able to solve problems within a limited domain of expertise

Sequenced problem sets: the presentation of carefully sequenced problem sets

Simulations: an activity that attempts to mimic the most essential features of a reality but allows learners to make decisions within this reality without actually suffering the consequences of their decisions

Microworlds: similar to simulation, except that that the central idea is a learner centered construction

Anchored instruction: focuses primarily on the learning of domain specific problem solving based on situated cognition

Case studies and case problems: present a realistic situation and require the learners to respond as if they were the person who must solve a problem

Problem- based learning: approach of instruction that structures courses and entire curricula on problems rather than subject content

Cognitive apprenticeships: involves a learner working under the supervision of an expert or master to learn the skills of a trade, particularly procedures and motor skills

Others: for example Schuman's inquiry training and the Biological Sciences curriculum

Macro strategies