Problem Solving

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Understanding the Problem (from Polya, 1957)

What is the unknown?

What are the data?

What is the condition [set of constraints]?

Let's have some problems!

Problem Solving Theory (Newell and Simon)

States

Operators

Goal

Subgoals

Search

Difference reduction

Means-ends analysis

Cognitive Effects in Problem Solving

Failure of analogical transfer

Representation effects

Functional fixedness

Set effects and *Einstellung*

Incubation effects

Insight versus non-insight problems