Math Problem Solving Strategies: Experts vs. Novices

Working Memory:

Paper pencil techniques put the greatest burden on working memory.

Distribution (transforming one or more factors into a series of sums or differences) and Factoring (transforming one or more factors into a series of products or quotients) put an intermediate burden on working memory.

➢ Retrieval of numerical equivalents from long-term memory put the least burden on working memory

Solving New/Challenging Problems:

To Solve Math, Physics, etc. problems, You can use 5 steps:

1) Identify the "type" of problem you have.
2) Translation: The structure of problem is put into the problem solvers "own words". This is one novices' weakest areas in mathematics in general.
3) List your given facts.
4) Identify and list the conceptual tools (or formulas) needed to solve problem.
5) Solution monitoring: Checking your steps. Eliminates "tunnel vision" and helps avoid "small mistakes".

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