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Problem Solving

Candace Hughes and Jacqueline Estrada
School of Psychology, The Chicago School of
Professional Psychology, Chicago, IL, USA

Definition

The problem-solving process can be defined as the ability to take the necessary steps to achieve a certain goal. Often, the steps involved in the problem-solving process are unknown and may need to be completed in a particular order to achieve the goal. Although problems differ in the number of solutions possible, some problems have only one suitable solution whereas others have a variety of acceptable solutions; the problem-solving process requires the individual to choose their actions from an endless number of possible actions.

There are currently two widely accepted problem-solving methods. The first method, algorithms, utilizes an exhaustive list of possibilities to obtain a solution to a particular problem. Although this method ensures that a solution will be achieved, it can become a cumbersome and time-consuming method to problem solving. The second method, heuristic method, is based on a more selective list of possible problem-solving methods including only those with a high likelihood of producing a solution. Even though this

model does not always lead to a correct solution, it is considered a more efficient and realistic method to problem solving. A variety of problem-solving steps are cited in the literature. Common throughout the literature is that the individual must demonstrate goal-directed behavior; break down a goal into smaller, more manageable goals; and demonstrate perseverance as they work through the process of solving a problem. Recent functional neuroimaging studies have confirmed activation in the mid-dorsolateral frontal cortical area which appears to play a critical role in complex planning behavior and does so through close functional interactions with multiple cortical and sub-cortical regions.

Cross-References

- [Problem-Solving Training](#)
- [Reasoning](#)
- [Thinking](#)

References and Readings

- Luria, A. R., & Tsvetkova, L. S. (1990). *The neuropsychological analysis of problem solving*. Orlando: Paul M. Deutsch Press.
- Unterrainer, J. M. (2006). Planning and problem solving: From neuropsychology to functional neuroimaging. *Journal of Physiology*, 99(6), 308–317.