

METACOGNITION
FOR THINK+
VIDEO GAMES

METACOGNITION: MONITORING YOUR THINKING

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*“When the mind is thinking it is talking to itself”
Plato*

Game play can be a great time to strengthen your mind. Most games require strategic thinking. The problem is posed; the solution has multiple possibilities; the aim is to strategically either get to the direction most suitable or to compete with others who are also trying to solve the quest in the game. This is a time when you can call upon your brainpower by using your executive functions. Executive functions can be defined as the awareness and directive capacities of the mind—in other words, you are the boss of your own mind! It is the conductor in the orchestra of so many choices you need to make as you strategize through a game.

So, when you are engaged with game play, do you:

- set specific goals before you begin?
- choose a different strategy when you realize the one you’re using is not working?
- ask yourself if you’ve considered all options when solving a problem?
- think about what you really need to do to get the best results?
- ask yourself periodically, “How am I doing in achieving my goals?”
- draw pictures or diagrams to help you figure out the best strategy?
- ask yourself what you have learned from other games like this one?

- think of ways to use what you learned from this game when you are solving future problems?

If you hear yourself asking yourself such questions and carrying on a dialogue inside your mind, you are experiencing the muscle of the executive function called *metacognition*. It is your human ability to plan and execute a strategy for producing what information is needed, to be conscious of your own steps and decisions during the act of problem solving, and then reflecting on and evaluating the productiveness of your own thinking.

Skillful thinkers pay attention to their own and others' thinking and can modify as they become more self-observing. This process is known as "auto-regulation"--self-control of your own thinking processes. For example, when you are in the process of playing a video game, do you ever get distracted and drift off task? Do you ever realize that you have made a careless error? Do you ever lose your place and have to begin again? You "recover" by returning to the game to find our place, matching it with the last thought you can remember, and, once having found it, playing on with connectedness. This inner awareness and the strategy of recovery are components of metacognition.

Some metcognitive skills, necessary for successful problem solving include:

- Keeping your place in a long sequence of operations;
- Realizing that a sub-goal has been obtained; and
- Detecting errors and recovering from those errors either by making a quick fix or by retreating to the last known correct operation.
- Both "looking ahead" and "looking back."

Looking ahead includes:

- Learning the structure of a sequence of operations, identifying areas where errors are likely;
- Choosing a strategy that will reduce the possibility of error and will provide easy recovery; and
- Identifying the kinds of feedback that will be available at various points, and evaluating the usefulness of that feedback.

Looking back includes:

- Detecting errors previously made;
- Keeping a history of what has been done to the present and thereby what should come next; and
- Assessing the reasonableness of the present immediate outcome of task performance.

Metacognition is important not only in video games but also in other subjects in school and in your life. By thinking about your thinking, you learn how to consciously plan for and then follow the steps that you design for yourself, tailor-made to your own thinking processes. This creates a cycle of improved thinking throughout your life span. Metacognition is fundamental to lifelong learning and highly individual.

Of even greater importance is that through becoming a stronger metacognitive thinker, you realize that you are capable of solving increasingly complex problems, that you are a creative strategist, and that your brain is powerful.