

# Five Metacognitive Strategies to Change Your Mind

by Winston Sieck - September 30, 2013

<https://www.globalcognition.org/five-metacognitive-strategies/>

Everyday learning often starts with a surprise. Something unexpected happens and you use that to change your understanding. You learn the most when you use *metacognitive strategies* to adapt your mindset.

[Metacognition is what you know about how you think and learn](#). It includes knowing what you know (and what you don't). It also includes the [ways you gain knowledge](#). Those ways of learning are metacognitive strategies.

You experience surprise when something happens that you don't expect. Your new smartphone makes a call to someone you were trying to text. One of your flourishing trees suddenly loses its leaves. Your solution to an easy physics problem turns out to be wrong.

Events like these are puzzling because you have a concept that is wrong or incomplete. A new or improved concept helps you to explain the incident. The puzzle is resolved, and you understand.

It's not so easy to change your thinking, and people often don't learn in the face of surprise. For example, rather than bother to change your concept, you might ignore the surprise and [find evidence that confirms your existing concept](#). Or you might reinterpret your experience so that it conforms more closely to your current thinking.

Due to these challenges, cognitive scientists have done quite a bit of research to figure out good metacognitive strategies for how to learn the most from experience. The symbol and subject for many of these studies is the expert scientist. Scientists thrive on the unusual and unexpected. Imagine a botanist trying to make sense of an unusual plant specimen. They are meticulous in dealing with surprising findings.

Winston Sieck of Global Cognition, and his colleagues Jennifer Smith and Louise Rasmussen, reviewed the research on good scientific thinking and closely related areas of metacognition. Their [paper describes five metacognitive strategies](#) for developing elaborate, nuanced explanations of puzzling situations:

- **Notice the anomaly:** Monitor what's going on around you enough to realize something odd has happened.
- **Inquire as to causes:** Pause for a moment and ask, "Why did that occur?" Try to come up with [good questions that get to the heart of the matter](#).
- **Reflect on what you do know:** Sift through your knowledge base for a general idea that might be relevant. Use this to suggest directions for further exploration.
- **Consider alternative explanations:** We tend to get fixated on one way of thinking, leading to [overconfidence in our current concept](#). Try to [think of unlikely possibilities](#) to get different ideas.
- **Suspend judgment:** Reflect on whether you really have enough evidence to support your conclusion. Be willing to admit (at least to yourself) that you don't necessarily know at the

moment.

Metacognitive strategies work well for scientists, but do they work for anyone?

Sieck and his team found these metacognitive strategies in a range of existing research on scientific reasoning, problem solving, judgment and related areas. What they really wanted to know was whether the strategies that expert scientists use in the lab are also adopted by others who have high need to adapt their conceptions in novel situations.

They studied metacognitive strategies that seasoned wayfarers use to come to terms with other cultures. Sieck and his colleagues explored the idea that these metacognitive strategies were a central part of [cross-cultural competence](#). The researchers found striking similarities between the strategies the wayfarers used to make sense of surprising intercultural interactions, and those of the scientists studied previously.

The five metacognitive strategies appear to apply to a wide range of situations. Whether you are trying to understand the behavior of a new gizmo, ocean tides, or a person from another culture, these strategies will help you get the most from your experience.

Image Credit: [sangoiri](#)

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