When I say ... metacognition

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At the end of the academic year, one of my colleagues came to my office to discuss a case that had puzzled him for several days. He was the mentor of student A, an 18-year-old male, first-year student. Student A had recently sent him his portfolio for feedback and the content of the portfolio was what puzzled this mentor. In his self-reflection, student A concluded that his level of knowledge was excellent, in his own words: ‘I have the highest knowledge level of my year’. However, a glance at the study results showed that there was a perplexing discrepancy between the external assessments and the self-assessment: student A had failed a substantial part of that year’s tests. My colleague wondered how this discrepancy was possible. Or to reformulate the question: how can student A have such biased metacognitive knowledge?

The term metacognition has its origin in cognitive psychology and metacognition research has traditionally focused on the learning (of reading skills) of young children. Dunlosky and Metcalfe, in their standard textbook on metacognition, define it simply: ‘metacognition refers to thoughts about one’s own thoughts and cognitions’. This simplicity is deceptive, however: metacognition is a broad concept covering a host of different types, earning it its reputation as a complex and elusive concept. To add to the confusion, the different types of metacognition are further divided into two components: metacognitive knowledge and metacognitive regulation. However, I have taken advantage of this duality to structure this short piece.

Metacognitive knowledge is knowledge about how one acquires knowledge and skills and tackles assignments and the study strategies one uses. This includes knowing how fast and correctly one can analyse new scientific information and apply it to a patient case. But take note! The example of student A makes clear that metacognitive knowledge is not necessarily accurate. Misconceptions abound. Take for instance the widespread belief among students that cramming is an effective strategy to ensure long-term retention of information.

Metacognitive regulation is used to monitor one’s level of knowledge and understanding and to identify deficiencies. Resorting to this regulation to orient oneself to the task in hand or the case to be solved – before engaging in actual learning – is also termed ease-of-learning judgement. Metacognitive regulation is also used to decide whether a different learning strategy may be preferable or when to stop learning. This type of monitoring of learning and strategic decision making is also termed judgements of learning. Finally, the results of learning strategies must be evaluated to make sure the strategy was effective or the solution correct. This type of evaluation is referred to as confidence judgements.

The biased metacognitive knowledge of student A is an example of a more common phenomenon: research on metacognition has revealed the uncomfortable truth that people are rather poor judges of their own metacognitive knowledge and regulation. It is not just novices, but experts too, who are prone to overconfidence when it comes to their own knowledge and learning. Although the causes of these metacognitive deficiencies are unexplained, the consequences are crystal clear. They result in biased judgements, which impact our metacognitive strategies and which guide our decisions in areas like attendance of continuing professional...
development – a rather tragic vicious circle. When people think they are (not) very good at something and, worse, unable to profit from learning, they are unlikely to make an effort to improve. So for progress in metacognition, we should turn outwards rather than inwards to shore up our own limited metacognitive powers. What sort of feedback, if any, do you usually get on your metacognitive strategies? When was the last time you had a serious conversation about your learning needs or the wisdom of taking part in continuing professional development?

The next mentor meeting was quite difficult for student A. He hadn’t been aware of his inaccurate metacognitive knowledge. My colleague helped him to get a better insight in his own study strengths and weaknesses and to change his study strategies.

REFERENCES

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