



## Assessment of thinking

Clinton Golding, HEDC

*One important educational outcome is that our students develop their thinking. Graduates of Otago University are meant to be critical thinkers. Similarly, we want our students to learn to think like physicists, doctors, teachers, sociologists, economists, etc. Does this imply we should assess students on their thinking?*

But if we assess their thinking, does this mean that they could do well in their exams and assignments, and show a mastery of the content of their subjects, but fail because of lack of thinking?

Perhaps this is an unfair question. In many cases we set assignments that allow us to assess both thinking and content, for example, a task where our students have to apply what they know to solve a problem, or where they have to critically evaluate a position, theory or text.

But not all the tasks we set our students require critical or disciplinary thinking. Many assessment tasks can be successfully completed with simply a good grasp of the content that was taught. How can we tell whether our students just give us the answers we were looking for – including using words like 'critically evaluate' in the appropriate places – or whether they engage in critical or disciplinary thinking? A separate assessment of thinking might be useful to deal with this sort of issue.

What we want to avoid is situations where our students have a wealth of information about our subject, but are unable to evaluate or apply this information. For example, they know what photosynthesis is, but they do not seem to be able to predict what will happen in a complex situation involv-

ing plants and variable lighting conditions. They know that they are meant to check blood pressure, but they cannot explain why this is important, or judge when to do this. They are trivial pursuit smart, but the deeper thinking is missing.

So assessing thinking might sometimes be a good idea, but how might we assess it? Given thinking is seemingly invisible and silent, how can we tell whether our students are engaging in useful thinking for the situation, context or task, and how well they are thinking?

Although it might be argued that we cannot assess thinking, we do frequently judge some colleagues and students to be 'good thinkers'. How do we make these judgements? Basically we judge them to be good thinkers because they do things that poor thinkers do not do – they ask questions, they give reasons, they consider alternatives, etc. By making similar judgements we can assess thinking on the basis of whether our students do the things that critical thinkers do, the things that historical thinkers do, the things that scientific thinkers do, etc. Put the other way around, if we can identify exactly what a scientific thinker, or a historical thinker does, we can assess to what extent our students think in the same ways.

Yet identifying what an expert thinker does is a problem in its own right. We have become so proficient at the thinking involved in our subject areas that we are no longer consciously aware of what we do. We might say, "Well I identify and then solve a problem." Yes, but how can we make explicit exactly what this involves so we can

ask our students to do the same thing and construct clear criteria to assess if they have done so? "I give a critical evaluation of a text based on a theoretical framework." OK, but our students have no idea of what this means and how they should do this, and it is too abstract for us to assess.

**"What we want to avoid is situations where our students have a wealth of information about our subject, but are unable to evaluate or apply this information."**

So assessment of thinking starts with reverse engineering or defamiliarising what we do expertly but tacitly: How exactly do you think through the problems, questions and issues in your subject area? What you say, do, write and ask can be isolated into criteria for assessing thinking – do our students say, do, write and ask the same sorts of things or not? To what extent do they do this independently? How frequently and in how much depth?