

Teaching and Learning Thinking Skills and Dispositions

This ezine looks at the utility of teaching 'skills' without also encouraging the disposition to use them. Finally, it concludes by offering 7 key classroom strategies that will be vital to the success of any 'teaching thinking' programme or approach.

Thinking – infused across the curriculum, or a subject in its own right?

Some theorists have made a strong case for teaching thinking as a separate subject in its own right, and many schools are devoting a significant amount of curriculum space and time to stand-alone programmes of work specifically directed towards the developing of thinking and learning skills, concepts and strategies. Alternatively, there are those who believe strongly in a so-called skills 'infusion' approach. Here effective thinking is also the primary aim, but a deliberate effort is made to achieve this through the different curriculum subject areas.

While either approach, or a combination of the two, can be used to develop helpful thinking skills and dispositions, an 'infusion' approach certainly encourages teachers to extend their classroom practice in a direction that supports more explicit emphasis on thinking and active learning. In many schools, it has led to radical changes in the ways in which curriculum material is presented, in the nature of learning tasks and in the form of responses expected from students.

Teaching Thinking: 7 implications for classroom teaching

Many teachers would suggest that by the very act of teaching their subject, they are teaching thinking, and it cannot be denied that the different curriculum areas make a wide range of cognitive demands upon pupils. A list of typical classroom questions provides evidence of the variety of patterns of thinking to which pupils are required to respond: 'What does the term Cold War mean?', 'In what ways do mammals and reptiles differ?', 'How would you prove that these triangles were equal?', 'What caused the Russian Revolution?'

However, although all good teachers in all subjects encourage their pupils to think, this is not the same as teaching them *how* to think – for instance, by explicitly drawing their attention to the kind of thinking they are engaged in and encouraging them to develop thinking strategies that they see as personal.

Developing thinking skills and learning dispositions involves more than just providing encouragement and opportunity, it requires a constructivist approach to teaching that views learners as active makers of meaning. Pupils need to be thoroughly engaged with their own learning, and provided with plenty of opportunity to practice their skills, talk about their learning experiences, reflect on their strengths and weaknesses and to be actively involved in evaluating their own development. Whether you decide to mediate the skills, dispositions and attitudes contained within the framework by adopting a stand-

alone skills programme, an infusion approach, or by introducing a mixed model, here are seven classroom strategies that will underpin the success of any approach:

1) Set open ended challenges

Open-ended challenges do not have a single, absolutely correct answer or a single way of arriving at a correct answer. They enable learners, for example, to respond creatively, construct their own meaning, and develop strategies and solutions which they see as personal – it sparks pupils' curiosity and creates a 'need to know'.

2) Make thinking important

If we want learners to see thinking as important, we need to provide time and space for it to happen in the classroom. We need to allow students time to think before responding to questions and time to reflect on and talk about their learning. Thinking skills and dispositions should feature in learning intentions, classrooms should be organised to encourage collaboration and dialogue. Classroom displays should make thinking visible; showing thinking words, thinking phrases, question prompts, thinking tools and the students' own thoughts and questions. In short, the classroom culture should promote thinking and creativity, with teachers modeling their own curiosity and desire to learn, and making it alright not to know and even better to question.

3) Make thinking explicit

We learn a lot by watching, imitating and adapting what we see. Imagine trying to learn to dance when the dancers around us are all invisible. Thinking is invisible. A pedagogy that has an explicit focus on 'teaching thinking' is distinctive because it puts thinking under the spotlight, making the implicit, explicit. Students are asked to share not only what they have learned about the subject, but also what they have learned about the process that made the learning possible – their thinking. They are also encouraged to think about how they might use their thinking skills both across the curriculum and beyond into everyday life. We call thinking about thinking 'metacognition'. Metacognition requires lots of support and the quality of a teacher's questioning and listening will be key to its success.

4) Ask 'rich' questions

We can develop our students' ability to think more skillfully by asking 'rich' questions. They are rich because they can draw out a wealth of possible responses regarding knowledge, know-how, thoughts, feelings and speculations. Being a rich questioner involves asking questions about things you cannot already know the answer to, questions, for example, about what and how students think and feel. We shouldn't expect an immediate reply to rich questions; students will need time for reflection. Being a rich questioner also involves listening closely to their responses so that follow-up questions can be asked that both challenge and extend their thinking even further, and 'join up' students' thinking so they can learn from each other.

5) Enable collaborative learning

Giving pupils meaningful and challenging opportunities to work and collaborate with others is important. Increasingly it is recognised that collaborative learning and dialogue between learners is important, not only because pupils are given opportunities to develop social and teamwork skills, but also because talking about what and how they are learning improves their understanding and their capacity for reasoning and argument. As demonstrated in particular by the work of Neil Mercer, it is also important to make explicit the type of talk that we need to use if we are to think together effectively in groups. Termed 'exploratory talk', it is characterised by the use of questioning, reasoning, explanation, and speculation. Contributions build on previous comments and aim to be both constructive & critical.

6) Promote self management

To enable learners to be more self-directed, they need to be given opportunities to plan, manage and monitor their own learning. This of course demands that we make the relevant skills and capabilities 'visible' to our students and help them to develop a language for talking about the variety and value of their thinking and for evaluating their own development.

7) Make connections across contexts

Research on classroom learning has found that students typically show little ability to flexibly apply what they have learned in one curriculum area, to help them with a new and different problem in another. Skills that could be generalised and transferred, remain stubbornly welded to the context (and sometimes even to the room!) in which they were learned, and are still less likely to be applied to the solution of informal problems in everyday life. It is important, therefore, to acquaint students with the whole problem of transfer, and show them how to *learn for transfer*.

One prerequisite for the successful transfer of thinking skills appears to be the extent to which students have developed the tendency to self-direct and monitor their own thinking. How many of our students, for example, have learned to ask themselves the following questions: *What's this about? How shall I do this? What have I done before that might help? Where could I use this again?* As David Perkins has commented, we need to help students to *'make the connections they otherwise might not make and help them to cultivate mental habits of making links and connections.'*