Subject thinking

Steve Williams introduces the focus of this edition: the interconnection between thinking generally and thinking through the subject areas

In this edition of *Teaching Thinking and Creativity*, we ask the question: 'What is the relationship between thinking in general and thinking in the subject areas covered by the curriculum?' By 'thinking' we mean a certain kind of thinking that enables intellectual or practical progress – that leads to understanding, enquiry, discovery of new perspectives, analysis, new creation, problem solving or evaluation. We also mean thinking that is effortful rather than routine.

The last point is relevant when we consider constructions such as Bloom's taxonomy. This hierarchical model of thinking suggests that evaluation is a thinking task of a higher-order than comprehension. Yet surely this depends on the difficulty of the task. Some evaluations do not require effortful thinking and some comprehension challenges require thinking that is extremely effortful and requires a good deal of analysis and even evaluation. So, for example, evaluating which brand of chocolate tastes best requires less effortful thinking than understanding an explanation of the concept of justice. We should bear this in mind when trying to construct programmes of study in the subject areas and ask questions such as: *Is the level of challenge high enough without being unachievable?* and *Is the challenge worthwhile?* Bloom's categories won't provide the answers to these questions. They simply remind is that there is more to thinking and learning than noticing and remembering.

Resources for thinking and learning

One way of approaching the inter-relationship between thinking in general and thinking through subjects is through the metaphor of developing pupils' internal resources. Generally applicable resources for thinking could include:

- dispositions such as patience, curiosity and a willingness to converse with others
- concepts we use to propel and organise our thinking such as same, different, conclusion, reason, argument, alternative and analogy
- strategies, routines and expectations to guide ourselves through a challenge
- general knowledge about a wide variety of subjects and an awareness of their significance in a wider scheme of things

These resources can help pupils' thinking in most subject domains. This statement is not uncontroversial however. Some critics would say that it's obvious that one cannot think without thinking about *something* and that one cannot compare or argue about things one doesn't understand. It certainly is obvious but it does not hinder the argument that our interaction with unfamiliar subject matter will be more fruitful if our resources are extensive and well developed. At the same time, in tackling new tasks, coming to understand new things and *overcoming* fresh challenges our resources can be enriched in their turn.

In focusing this edition of the magazine on the such an interaction between the general and the particular, we are trying to escape from stale arguments about *process* versus *content* or *skills* versus *knowledge*. In fact, we can come to think of subjects not just as resources of knowledge but as centres for ways of thinking about ourselves and the world.

Articles in this edition

The article by Neil Thompson and Sarah Herrity show how making analogies, similes and metaphors can assist thinking and learning in history. Their examples illustrate thinking about causes and, in particular, the relative importance of different causal factors and the ways they combine to bring about an effect such as the outbreak of the second world war. Causal analysis is an important aspect of historical thinking. The writers show that when students are aware of the usefulness of analogy-making as a tool for understanding but also realise the need to analyse the analogy rigourously for appropriateness, then they will become better learners in history. On the other hand, when pupils are able to grasp the complex interplay of factors that can influence the outcomes of events, they may be more likely to look for multiple causes, not only in history but in other subjects. They may also be motivated to try creating analogies to help themselves understand content and concepts in other subjects.

Causal thinking is not the only kind of thinking involved in history. In this issue, Tony McConnell explores artistic representations of historical events, periods and processes with students. He writes:

'The key to enabling students to produce their own artistic interpretations of the past is to break down the barriers between subjects in the classroom. For example, a piece of artwork about the past is not history *or* art: it is both. This has two implications. First, history teachers should seek to engage students in other disciplines whenever possible. Second, they should seek some opportunities to plan in a cross-curricular way with other departments.'

So historical thinking can benefit from contact with the sort of thinking normally done in English, drama, media studies and art lessons. The thinking taking place each of these subjects is compatible with the others. This compatibility is dependent on the subjects integrating with each other through the medium of general thinking moves such as presenting an argument with reasons, noticing similarities and differences, imagining alternative possibilities, distinguishing fact from fiction and so on.

Dianne Swift and Martin Renton concentrate on thinking in geography about our perceptions of people, places and processes and the connections between them. Dianne Swift quotes an argument about global warming and calls it an example of 'geographical thinking'. Yet it is still *an argument*, basing its conclusions on reasons. It is also open to challenge from other arguments, including arguments from economic, scientific political, philosophical or logical perspectives. Students who understand the principles of argument and are used to imagining counter-arguments from a variety of perspectives will be empowered in the face of arguments about geographical themes.

Veronica West's article about young children's activities in *art and design* presents a different kind of challenge. She investigates the possibilities for children to discover their intentions in the process of making something rather than having the intentions prescribed by a teacher or a task. It is more difficult here to speculate about the extent that a person's general resources for thinking could be helpful. However, dispositions such as patience and playfulness as well as a tendency to make connections and associations will support creative exploration in *art and design*. The idea of playfulness seems to contrast with the notion of 'effortful thinking' mentioned earlier in this article. It could be fruitful to ponder on the connections between the concepts *effortful, playful* and *creative* in relation to teaching and learning.

All in all, the relationship between developing pupils' resources and initiating them into particular ways of thinking, knowing and making through the subjects is a vital one in education.