

Research, brains and intelligence

Educational research seems to promise a better understanding of how things really are and what works best. If we knew the truth about these matters, there is no doubt that we could all teach more effectively.

Individual pieces of research stand together like a collection of sentences that we hope can be arranged into a convincing narrative, complete with significant themes. But it is often difficult to piece together a clear story.

Consider, for example, the two items of research reported in the news section of this magazine. One tells us that we are smarter than people of previous generations because we are more intellectually stimulated by, amongst other things, computers. The other claims that modern computer games under-stimulate the brain while plain old arithmetic excites both the left and right sides of our frontal lobes simultaneously. How can we integrate these snippets of research into a coherent educational story?

In preparation, we need to clarify what, in the research, was tested, what was based on accepted knowledge and what was assumed. Dickens and Flynn collected IQ tests scores over at least 60 years and noticed that the scores had increased. They also observed that animals and humans who were stimulated intellectually sought further stimulation. They called this (presumably genetic) process 'an engine of intelligence'. They speculated that modern life is more stimulating than it used to be because we suffer less drudgery at work and at home. Their conclusion is that people today are smarter than their ancestors because they are more stimulated. They assume that computers offer many opportunities for mental stimulation and therefore contribute to the overall rise in IQ.

The research of Professor Kawashima challenges the assumption that all so-called interactive things people do with their computers are mentally stimulating. His findings don't necessarily contradict those of Flynn and Dickens because he doesn't test uses of computers other than Nintendo games, which may turn out to be more stimulating. His conclusions are based on observations of activity in the left and right hemispheres of children's brains. He finds that arithmetic is the best all-round brain stimulant and he agrees with Dickens and Flynn that mental stimulation is a good thing because it leads to increased mental capacity.

After clarifying what the research is really about, we can attempt to find a place for it in our own educational thinking. This is bound to produce some friction that manifests itself in the form of questions. We might ask, for instance, whether IQ scores are good indicators of intelligence. Many other researchers argue they aren't and some even question whether there is just one general kind of intelligence that we can measure.

We can also ask why more value should be assigned to one activity that stimulates both hemispheres of our brains simultaneously than, say, a series of activities that stimulates each side in turn, so they work like a pair of pistons to fire our thoughts throughout the day. Such a series of activities may resemble a balanced curriculum.

In fact, why should we consider applying research about brain stimulation to curriculum planning at all? We know that there is significant left and right brain activity during sleep but we wouldn't want to write sleeping classes into the timetable. Having said that, it would be disconcerting to find that dreaming stimulated more brain activity in children than did their school lessons.

Shouldn't we also ensure that children's intellects and characters are stimulated and developed as well as their brains? Of course we want children to think a lot and in many different ways, but we also want them to think well, to discriminate and to be aware of standards in all that they do. Promoting brain stimulation is not sufficient for the teaching of good thinking.

Perhaps we might even wonder whether too much *imposed* stimulation can sometimes be a bad thing, a kind of 'busy-work' that leaves little space for quieter reflection, questioning and self-determined enquiry.

We should require satisfactory answers to these kinds of questions before we accept research findings as a guide for action in our professional lives, no matter who is telling the story. *Teaching Thinking* welcomes your articles and letters on any of these issues.

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