

The neurological basis

A larger field of vision activates more working memory.

The think centre plays a co-ordinating role and uses the *short-term memory*, or working memory, as a buffer. Most new information is only temporarily stored to be compared to and processed with prior knowledge in the long-term memory, which is scattered over the brain. In this way we process our current experiences and check our existing opinions - the new information can be discarded immediately afterwards.

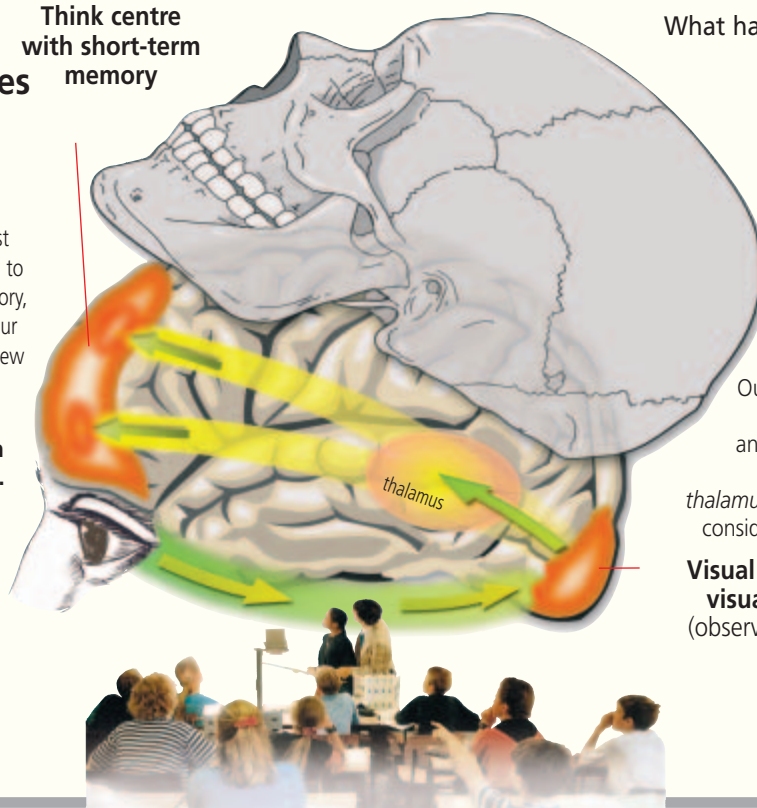
The working memory is activated less when information is seen in a small field of vision.

When the eyes probe a larger image the activation is heightened in more areas of the think centre.

From here, more of the long-term memory is activated and we check against our stored knowledge more effectively: there is more of a chance that we correct inaccurate ideas and that new information will be added.

Think centre with short-term memory

What happens under the skull?



Our brain activates the think centre and the short-term memory via the *thalamus* only when it is considered 'important'

Visual cortex with visual memory (observation centre)



A picture seen in a book or on a computer monitor activates less working memory.



The same image, projected in larger format, activates more parts of the working memory.

You want Impact?
The effect of a large projected image is very different and cannot be compared to the effect of a computer screen
Just like watching a movie on TV and on a movie screen. Why is this?



Example from my personal experience



Every year my 12-year-old students had the task of interpreting a Sumerian art picture for homework with the question: "Did inequality exist between the people at that time?" There was always very little feedback.

This time I could show them a full colour transparency projection and asked, "What do we see here?"

"Sir, Sir.....", hands raised enthusiastically, "one man is much bigger than the rest – he is the King!" Surprised, I looked at my pupils and then at the projected image: sure enough, for the first time I saw this clearly for myself! Diligently they started to write down points they had never recognised in their text book at home.

The think centre and learning Firstly, let us consider thinking and learning. The think centre is the part of the brain designed for planning, decision making and as the entrance to cognitive learning. From here many subject-specific related parts have to be activated elsewhere in the brain. The short term memory is designed to let this happen interactively and efficiently, thus in as limited a way as possible. However, in order to learn, neurological pathways have to be developed to and within relevant places in the long term-memory. For topographical knowledge electrical circuits are created in the spatial memory; learning music requires memory pathways into the auditory memory. The greater the interest, the more intensive the brain activation; the more concentration, the more memory links are created between and in the right areas. Large static images penetrate deep into the grey mass and they allow for calm processing in the long-term memory.