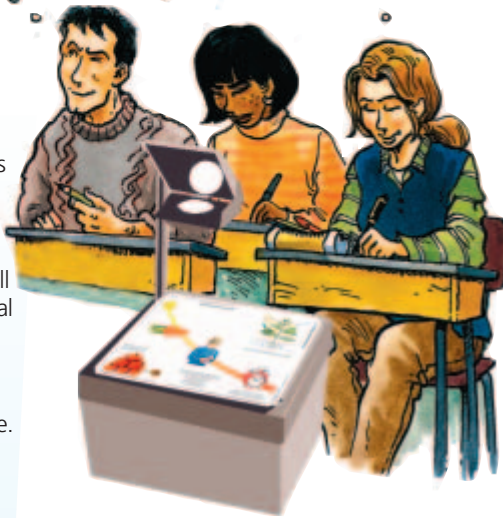




Projections are able to access our consciousness with ease and provide strong visual reminders

During tests students recall projections from their visual memory with ease, unlocking the long-term memory and enabling access to wider knowledge.



Why is visual imagery so powerful?
Up to 60% of our brain is active during interpretation; images and symbols play a significant role in thinking and they simplify the storage and retrieval of information from the memory. The brain's sight system is by far its best developed feature.

The fastest information highway in the brain

The optic nerve consists of at least one million fibres of optic nerve paths, which is much more than the thirty thousand fibres of the auditory nerve. It is even more than the total number of nerve fibres that transmit touch, pain and temperature information from the entire body to the brain. Our sight system is the brain's greatest information highway, but it has its own sifting system to prevent overload.

Only one millionth part of all visual stimuli reaches our consciousness

Our brain makes us aware of a tiny fraction of all the visual information it processes. Filtered down, only that which is considered important enough to bother the think-centre is forwarded. It is estimated that only one thousandth part of all sensory stimuli on a subconscious level is processed – just like when driving in traffic. Only one millionth part of all visual stimuli entering the eyes reaches our consciousness, our think-centre. The thalamus, the egg-shaped association centre in the limbic system, co-ordinates all forms of incoming stimuli and is 'the gateway to our awareness'. Our brain creates a reality that seems relevant, based on limited information. Seeing is, therefore, mostly interpretation. With effective visual stimuli, imagery can be transferred. By anticipating subconscious selection mechanisms, the attention can be caught and consciousness reached.

Playing around with evolution

Evolution was not always aimed at learning in school; this explains why motivation is not obvious. At their age students are more interested in other things. This makes teaching a challenge. But, regardless of a natural lack of interest, curiosity can be effectively raised by a large visual projection. It obviously must contain ingredients necessary to bypass the visual system's instinctive selection mechanisms. Information presented in this way is able to stimulate the think centre. This one phenomenon makes projectors such powerful instruction tools and only now are we beginning to understand this.

Understanding depends upon imaging

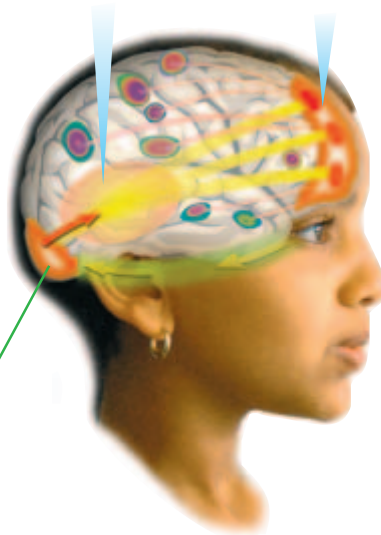
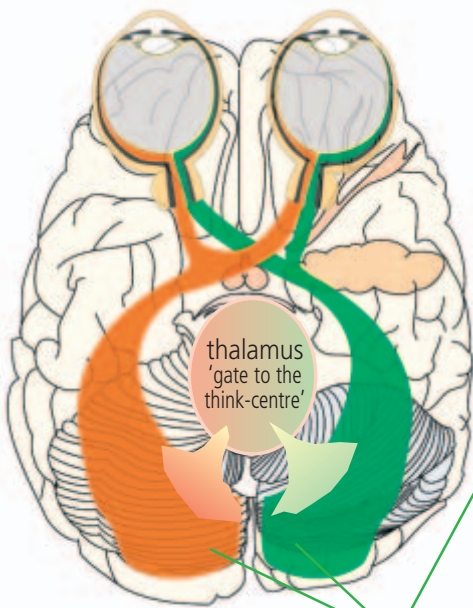
Comprehension can often only occur after students are able to construct a mental image of what is meant. The image created is stored in the visual memory for later recall. If teaching is not being supported visually, then pupils will create their own mental images of the concepts being taught. They do so according to their own experiences, associations and intuitions. Once the student forms a mental image, then the concept is 'understood'. Correct or not, these mental images become the basis for retention.

Increase efficiency in teaching

Showing the proper images on a large screen at the right moment boosts learning and long-term results improve. Visualising concepts helps students to understand faster and better. Their memory will be based on correct images. Visualisation can support learning in a variety of ways. The use of moving images such as video and computer animations aid easy understanding: they make optimal use of the co-ordination capacity of the short-term memory. For additional memorising large still images are important because these create more permanent impressions in the long term memory. A handy and effective teaching tool for this is the overhead projector just because of its simplicity. In any media-orientated learning environment it allows for instant display, a necessity next to the computer driven projections - a large interactive whiteboard is able to combine all in one.

Thalamus: the gateway to our consciousness

Think-centre 'awareness'



The neurological basis

Visual cortex with visual memory

The optic nerve consists of at least one million fibres of optic nerve paths, which is more than the total number of nerve fibres that transmit information from the other senses to the brain. Only one millionth of all visual stimuli entering the eyes reaches our consciousness.