

What does thinking look like?

Steve Padget looks at how logovisual thinking can stimulate lessons and increase understanding

Logovisual thinking (LVT) is a method that stimulates high quality thinking and talking.

Visibly expressing our understanding

Logovisual thinking (LVT) makes meaning by exploring connections and revealing patterns – looking for similarities and differences, establishing causes and effects and so on. If the constituent parts – information, problems or ideas – are made visible and movable, we increase our capacity to make sense from them. Visibly expressing our understanding helps us to review and refine it through discussion with others. The five stages of logovisual thinking, stimulate the process:

- **Focus:** selecting an area of study or a guiding question.
- **Gather:** generating the raw material and making it visible.
- **Organise:** experimenting with, and forming, the sense that can be made from the material.
- **Understand:** articulating the insights revealed.
- **Apply:** transferring the sense derived to the intended outcome, whether it be through writing a text, organising an event or making a decision.

The process of gathering, organising and reorganising ideas can be achieved in a variety of ways: sticky notes can be used on a tabletop or on a large sheet of paper. On the other hand a more attractive, tactile and reusable system called ‘MagNotes’ is available for sale. This includes sets of magnetic dry-wipeable notes and portable magnetic whiteboards (Magboards). The hexagon-shaped notes facilitate the clustering of ideas and the whiteboards allow for titles, arrows and notes to be written and refined, and for small groups to cross-present their thinking.

Teaching and learning styles

We are familiar with the cognitive learning domains from Bloom’s taxonomy; we are only too familiar with the difficulty that frequently attends our efforts to move our pupils from the basement of recall, through the ground floor of comprehension and application into the penthouse of analysis, synthesis and evaluation.

The table above shows how each stage of LVT corresponds to what Adey and Shayer

How the five stages of LVT correspond to the cognitive intervention model and higher-order thinking skills		
CIM	LVT	HOTS
Concrete preparation: We focus and establish the vocabulary and the context in which the problem is to be set.	Focus: What are we going to explore?	Recall: What’s familiar about this, what’s unfamiliar?
Cognitive conflict: This describes an event or observation that the student finds puzzling or conflicts with prior understandings.	Gather: What do we know about this issue?	Comprehension: Interpret the situation, the context and the problem.
Social construction: ‘Dialogue and action that leads to the construction of a reasoning pattern.’ RRS, A&S, p66.	Organise: What relationships can we see emerging from our thoughts?	Application: Use abstraction, bring in things learned from elsewhere.
Metacognition: Thinking about one’s own thinking.	Understand: What new meanings have we created? What new understandings? What have we learned about our thoughts by seeing them and hearing them?	Analysis: Look at the component parts. Look at the different values of things, facts inferences, opinions...
Bridging: Explicit bridging to other contexts.	Apply: Where can we go from here? The solution to a problem, the expression of the new meanings...	Synthesis: Build something new from the elements of the experience. Evaluation. Make judgements about the value of the ideas.

call the cognitive intervention model (CIM) of teaching (*Really Raising Standards*, 1994), and the achievement of higher-order thinking skills (HOTS) in our pupils.

We know that organised thinking is the most effective thinking and leads to successful learning; LVT provides the pupils with the opportunity to see what thinking looks like and what it sounds like; this feeds directly into the principles of assessment for learning. We know that if we use visual tools to help learners to become organised thinkers, the attainment of the learners is raised.

LVT in the classroom

My arrival at the school caused a stir. I had: one leopard gecko, two fire-bellied toads, and two rather anti-social baboon spiders. We were the guests of the English department and these creatures were the stimulus for a discussion about the issues surrounding the keeping of exotic animals as pets. I wanted to see how quality thinking could be generated leading into, and coming out of, quality talk and then on

to effective planning and writing; all this with a G&T group of 15 boys and girls.

Constructive talk

Central to thinking is the opportunity to talk in a constructive and creative way. Give pupils the opportunity to make their own meanings and their own sense through talk. Where we generate talk, we generate thinking. Just as you cannot be a writer without being a reader, you cannot be either without being a thinker. LVT shows pupils the relationship between thinking, talking and crafting the desired outcome.

Creative articulation

The open-ended nature of LVT demands and supports a high degree of creativity. It makes linguistic demands on pupils that are translated into a deeper understanding of the topic and a clearer expression of this understanding, both spoken and written.

Collaborative meaning-making

What gives LVT the edge is the support given in the meaning-making journey.

In the lesson mentioned above, pupils were asked to think about issues that they may not have considered; they were deliberately taken out of their comfort zone – and their assumptions about the responsibility of keeping pets were challenged. LVT enabled them to see that their ideas were valid and could be added to those of their colleagues to make more sense and create a greater depth of meaning, moving them on into higher-order thinking and helping them to see new relationships.

Social skills

Each LVT stage is distinct and presents a different cognitive challenge to the pupils, appealing to different learning styles. This creates a dynamic that fosters mutual appreciation and support, and a safe environment in which to develop leadership skills. The inherent reliance on talk and the cross-presentation of small group work promotes speaking, listening and presentation skills.

Visible thinking

LVT provides pupils with a visual medium in which all this can happen. This draws them in because it is inherently interesting and stimulating, attractive and tactile. It supports the cognitive process by providing a mirror on what is evolving in the collective mind. It also allows the teacher/observer to assess the flexibility and sophistication of the pupils' thinking, vital to future lesson planning.

Planning as learning

The desired end product was a piece of non-fiction writing from each pupil. This demonstrated the effect of LVT on the pupils' understanding and thoughts as well as the way they were able to plan their responses more effectively. Teachers know how critical planning is and also how difficult it is to make pupils share this view. Here, where the pupils make their own plan and don't have one imposed, they not only create coherent plans but, having ownership of them, they use them.

Cross-curricular application

When using LVT, I deliberately take topics that have a cross-curricular angle. I feel that this is important for two reasons:

- The flexibility of LVT becomes apparent to the teacher and they see how they can apply, adapt or extend the process in relation to their subject and desired learning objectives.

Case study: Using LVT to stimulate students' thinking

Evelyn County Primary school in Prescot, Merseyside has been described by Ofsted as a 'magical place to learn'. The school's G&T provision is comprehensive and detailed and shows the flexibility needed to respond to the needs of the pupils with their various gifts and talents. The key to this is the strategic planning that is involved in the provision for G&T pupils: provision that is there in the structure of the school. There is clear identification of the G&T cohort; flexible, responsive and varied grouping; opportunities for the pupils to take on additional responsibilities.

The school is very conscious that if effective intervention is to take place there are particular needs that need to be attended to. The classroom climate, the intellectual needs of the pupils, the social needs and needs outside the classroom are articulated clearly. Learning episodes that stretch and challenge, events that enable pupils to experience the intellectual excitement of working with others of like ability and being able to move ahead at an appropriate rate are planned while at the same time the pupils are encouraged to plan, speculate, hypothesise, become self-critical and take responsibility for their own work. Like many primary schools Evelyn CP has introduced the idea of 'thinking hats'.

The session that the G&T coordinator, and I co-planned used LVT as the tool for stimulating pupils' thinking. We wanted them to experience the way that the boards could help them to gather and organise their thoughts in the preparation of a piece of empathetic writing about the experiences on the home front during the second world war.

Cognitive intervention

The concrete preparation was done using audiovisual and text extracts from Robert Westall's *The Machine Gunners*. The group learned about the Anderson shelter and we looked at the problems of what to take into the air-raid shelter when the siren went. This was done as a group: a thinking, noting and reporting back exercise. They also had to consider the practicalities of space and comfort, lack of strong light and ventilation.

The conflict was set up as I introduced the idea of evacuation. The pupils used LVT boards to gather and organise their thoughts. The class teacher, (also the G&T coordinator) said the session had given her insight into the way the pupils planned and created structure and order. This was later reflected in the written responses that the pupils prepared in the 'bridging' or synthesising phase of the lesson.

Pupils worked in their regular table groups and this gave me an opportunity to see the valuable contribution made by the classroom assistant who was working with the less-able table. She was able to mediate the task for these pupils. The talk around the boards was superb as the inclusive nature of this tool and its effect on the concentration and focus of pupils took hold.

As the boards began to move from a random scatter of ideas to something with order, the conversation quietened slightly as the pupils began to be aware of their own reasoning, as they claimed ownership of the individual thoughts but also of the whole work on their board and what their deliberations had meant to them.

Pupils had been challenged to approach something that they had not been prepared for and were able to take ownership of their thoughts and begin to move towards the point where they could begin to write something down as an empathetic response.

- It demonstrates to the pupils that thinking and learning transcend subject boundaries.

Further information

- Adey and Shayer 1994, *Really Raising Standards*, Routledge, London
- Best, B, 'What can able students tell us about improving their lessons?' *G&T Update* 20, December 2004, p3-5
- www.logovisual.com

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