Linking **thinking**

To succeed in an increasingly competitive jobs market, students need to develop strong critical thinking skills and the ability to work collaboratively with others – how can they do that? **Steve Padget** shares a powerful, visual thinking approach and describes the benefits of using it regularly in the classroom.

As the drive for the development of creative minds and critical thinkers gathers pace, schools are looking at new ways in which these complex skills can be nurtured in learners. The essential ingredient – the understanding that learning and teaching is, at root, a creative and collaborative enterprise – is being acknowledged, as is the need to build teacher confidence and expertise. This will allow schools to approach these issues and manage the necessary adjustments in learning and teaching approaches, both at staffroom and classroom level.

Education departments across the world are making explicit their commitment to the development of creative pedagogies, and there are strong words of encouragement to explore creative methods and develop in learners their

critical thinking skills in the UK. Schools that are delivering a creative curriculum are enhancing the quality of the school's provision in general, and the learning experiences of the children in particular.

Two key enablers of creative learning are collaboration between colleagues and the development of a classroom culture where cooperative learning is the norm[1]. These are two of the three principles that underpin the work of one of my current projects. The other principle lies in valuing approaches that provide opportunities for collaboration and problem-solving so demonstrating the importance of language use in a cognitively demanding context.

LogoVisual Thinking (LVT) is a powerful, hands-on thinking tool which combines these three principles in one approach. LVT promotes quality talk in groups of learners and supports them in their meaning-making and problem-solving through the use of magnetic, moveable dry wipe hexagons of varied colours, on which thoughts are written in response to a guiding question – displayed openly to fuel the group's discussion. The visual and tactile nature of the tool is one of its appeals and children quickly see the many possibilities it presents for the expression of their thinking.

There are five stages to the LVT sequence:

1. **Focus** – What is the question? What is the problem?
2. **Gather** – What do we know? What can we bring to the task of tackling the question?
3. **Organise** – What relationships can we see between these thoughts? Can we move the thought around and see new and perhaps unexpected relationships?
4. **Understand** – Does the new array lead us on to a solution to our question?
5. **Synthesise** – This is what we are going to do! With these new ideas we can paint, film, write, discuss and so forth.

LVT in action

St Michael in the Hamlet is a two-form-entry primary school in an inner suburb of Liverpool. The school is housed in new premises, completed in 1997. It has a socioeconomically and culturally diverse population and so in many ways, can be seen as a typical urban school. There is what could be described as a 'learning

Phased introduction of LVT – KS2 setting

2012-13	Term 2.2	Term 3.1	Term 3.2	Term 1.1	Term 1.2	Term 2.1	Term 2.2	Term 3.1	Term 3.2
LVT consultant working closely with the staff and learners at all stages of the process	Phase one (year 6)			Phase two (year 4)				Phase three (year 5)	
	Initial planning meeting with coordinator Twilight induction with all staff	Planning meetings with staff. Curricular content Timing Up skilling Preparation	Delivery & Evaluation	Feedback to staff on phase 1 to staff Invitation for phase 2 Planning meetings for phase 2	Delivery Evaluation		Phase 2 Feedback to staff Initiation of phase 3	Planning meetings for phase 3	Delivery Evaluation
2013-14				Phase four (years 6 & 3)		Phase five (year 5)		Phase six (EYFS)	
LVT consultant to shadow y6 and y3	The members of staff heading up this series of projects have all had experience in the previous year. Strategic development of LVT knowledge and skill taking place over the two year period. School's Learning & Teaching Coordinator attended LVT Facilitators' training.			Phase 3 Feedback to staff Independent project with y6	Self evaluation by the staff of y6 projects Independent project y3	Phase 4 Feedback to staff – led by school staff Independent project y5	Self evaluation of y5 project	Evaluation of the whole series	
LVT consultant working closely with staff			Planning meeting with L&TC to formalise the plan for the coming year.	Planning and preparation for y2		Delivery of y2 project	Evaluation of y2 project	Plans are in the early stage of development to look at how LVT can enhance learning in the early years.	

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first' approach at St Michael's and I have had the good fortune to spend some time working here. The school actively investigates creative pedagogies, which develops the skill level and confidence of the teachers in approaches such as Learning to Learn and Philosophy for Children. We are currently introducing the use of LVT into St Michael's pedagogic canon – year by year and in three overlapping stages.

The first stage was the introduction of LVT to the teaching and support staff, and the development of confidence and expertise in its use. Beginning with a whole-school, hands-on introduction, all were able to see and engage with LVT for themselves. From this meeting and its animated discussions, it emerged that teachers were keen to try this in the classroom – even at that early stage they could see the relevance of LVT to their teaching.

The second stage was to examine the role and effectiveness of the LVT tools and methodology in the classroom. How good is this approach in promoting collaborative group work? How effective is it in helping to generate the talk that is necessary for the collaboration to happen?

Enquiry-based learning projects were designed which demanded discussion, collaboration and negotiation based on an impactful stimulus and clear objectives. The learning sequences were planned to deliver in terms of promoting communication, collaboration, synergy and meta-learning. The details look like this:

Communication
■ Generating good group talk to explore the problems and come up with solutions.
■ Providing the right stimulus and starting point for discussion.
■ Allowing the children to appreciate that talking in this way is learning in order to achieve the objectives.

Collaboration
■ Promote working as a group – as opposed to merely being in a group.
■ Supporting the cohesion needed to approach the complex tasks effectively.
■ Assessing the effect of the LVT methodology on these processes.

Synergy
■ Recognising that the quality of the work at the end of the project is a function of having worked together effectively.
■ Communicating about the end product.

Meta-learning
■ Children articulating their understanding of the issues above.
■ Evaluations drawing out of the children – their reflections on the process as well as their appreciation of the products of the sessions.

Grabbing their attention

We began with Year 6 and what emerged from that experience was a procedural and pedagogic model that we have continued to use as the project has matured. Three or four twilight meetings take place in which the teachers co-plan with their year colleague an enquiry-based project that will take place over two consecutive days and the curricular and thematic objectives that it will address. This allows for the development of the teachers' own understanding of the workings of LVT in the context of the delivery of the curriculum, the context of classroom practice and how the learners will be able to use it as their own planning and developmental tool at various points in the project. The detailed plans are drawn up and the resources made.

We have used many exciting ideas for enquiry. These include:

- Amazing animals on an earth-like planet
- Surviving on and escaping from Elephant Island, an ice-covered mountainous island off the coast of Antarctica
- Surviving a plane crash in Venezuela
- Surviving on and escaping from a tropical, deserted island
- Surviving a tsunami
- Lost in the savannah
- The crazed megalomaniac
- Travelling in time
- Disasters in a strange city

After a detailed whole-class briefing and demonstration of the LVT method, the children are given a powerful, attention-grabbing themed resource pack that contains:

- Stimulus material (visual, written, factual) – the context of the enquiry or problem to be solved.
- Details of the tasks that need to be performed – these include the decisions that have to be made by the group in terms of their management of the project and the achievement of the objectives.
- A list of tasks – for example:
    - Construct an agreed plan of action
    - Agree allocation of tasks
    - Produce written and drawn material that will contribute to a poster
    - Construct a poster
    - Script and shoot a video
    - Present the poster to another group or another class.

Plans and resources for current phases of the project can be seen and freely downloaded from www.steveslearning.com/primarycreativity.htm.

Up to now we have structured the projects using eight sessions over two full and consecutive days for each iteration of the project. This allows for time-consuming tasks, such as the construction of the poster and the scripting and shooting of the video, to be completed effectively and in sufficient depth. There is time for considered planning, there is time for re-takes of the video. The time allows for the groups to cohere, build up a degree of synergy and for the children to develop the roles within the groups. Within this loose structure, there are opportunities for the children to discuss and discover, disagree and decide. Children have appreciated the looser than normal weave of the days.

Immediately after the project, the teachers and the children are asked to complete an evaluation form. We look particularly at those children who have performed in a different way than would have been expected based on prior knowledge. This information is useful in the planning of the next phase. It also provides an opportunity for reflection on how the project has impacted upon the learning of each of the children.

More than a two-day project

The third stage is to incorporate LVT as a regular feature into the work of each year group. The LVT approach has now been used in projects for three year groups – Years 4, 5 and 6. In each of these projects, I have had close hands-on involvement at all stages. As we move on to the next phase, there are going to be teachers planning and running their own LVT projects independently. The school is now in possession of the materials that we have created together and these can be used and modified in future. The process map shown on the second page of this article (also available on the website cited previously) shows the broader picture.

The aim of this work is to see the benefits that come with children working in small groups on tasks which incorporate both a measure of teacher direction and a large measure of learner independence and interdependence. The value of working with small groups has been made clear by, for example, the work of the SPRinG project and it is in this spirit that the work at St. Michael's is carried out.

There was an overwhelmingly positive response from the children to the work in each iteration. The days were very enjoyable, busy and productive, and conducted with a can-do spirit. Over 80 per cent of the children said that the LVT boards had helped to make decisions and it was clear from the way in which they used them that many were thinking and being challenged in a different way from usual. They explained: 'The LVT boards really got my mind working,' 'We had more ideas when people spoke and we all decided on questions as a group,' 'They helped us put our ideas together,' 'They made me concentrate.'

We found some interesting differences between the years. While 41 per cent of Year 5 students said that one of the good things about the project was the teamwork, pupils in Year 4 were less sure about this. From December of Year 4 to May of Year 5 is quite a gap and we felt that the older children's responses showed their more developed emotional maturity. There were one or two children who found the group experience uncomfortable or exposing, and did not have the emotional reserves to cope with for example, decisions going against them in the group – these children were appropriately supported. More typical of the responses was this from a child who said: "To be honest, the whole project was amazing!"

The teacher evaluations noted the high level of engagement of the children across the ability range and, because the lesson dynamics are quite different when using LVT, the development of some hitherto unrecognised or underused personal and interpersonal skills. Teachers expressed their appreciation in professional development terms of the experience of co-planning and co-delivering the sessions.

The project continues and has been seen as very successful by all concerned

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in terms of the children's experiences and the professional development of the teachers. Working in this learning community is wonderful and my deepest thanks are due to all at St Michael's.

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Key training features of the project

The process of introducing the LVT method to the school was informed by a reading of research by Cordingly and Bell[2] . The valued features of training identified in the research are mapped against the St Michael's project in this table:

Key training feature	How does St. Michael's compare?
Peer support	The experience of the Year 6 project in the academic year (AY) 2011/12 began a process of discovery and dialogue. Each phase of the project is characterised by teachers working together.
Professional dialogue	Meetings used for the reporting back of evaluations in written and oral form provide opportunities to share and reflect on the experience – this essential process is on-going.
High leverage strategies	Using LVT techniques – upskilling with this approach and seeing it in the context of other creative learning approaches.
Initial support and coaching in the methodology followed by transfer of control	The current round of projects, by working across all the year groups, will establish a skill base which will embed the approach at class teacher level as well as school level. In AY 2013/14 there will be a round of independent projects.
Learning to learn from the observation of others	Co-construction of each project enables teachers to learn with and from each other. The reflections and evaluations made by participants are shared across the school.
Ambitious goals in terms of the aspirations for the pupils	This project is curriculum driven rather than coverage driven – its essence is its ability to demonstrate a cross curricular approach. The project contributes to the development of life-long learning skills and cognitive development in pupils, recognising that these two factors are linked.

References

1. Sahlberg, P (2010) 'Global education reform movement and national educational change', paper presented at the EUNEC Conference, Brussels, 2nd December 2010.
2. Cordingly, P, and Bell, M (2012) Understanding What Enables High Quality Professional Learning. Coventry: CUREE

Knowledge trails

1) **LogoVisual Technology** – Brin Best explains how LVT can be used to improve thinking and stimulate creativity in classrooms.
library.teachingtimes.com/articles/logovisualtechnology.htm
2) **LogoVisual Thinking** – Brin Best explores what teachers say about the value of LogoVisual Thinking.
library.teachingtimes.com/articles/logo-visual-thinking.htm
3) **Making ideas come alive with visual tools** – Oliver Caviglioli introduces his favourite visual tools and argues that they can help all of us to think more effectively.
library.teachingtimes.com/articles/make-ideas-come-alive--with-visual-tools.htm