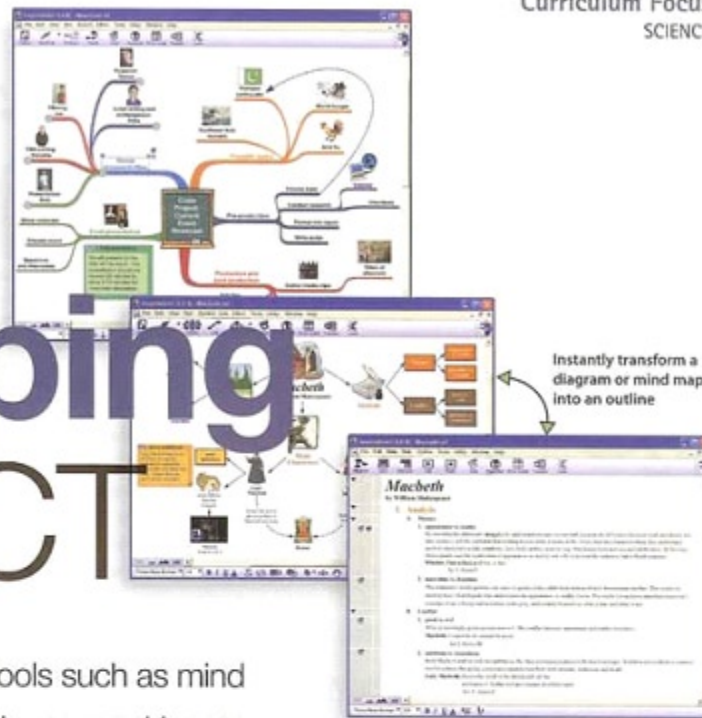




# Mapping with ICT



Visual thinking and learning tools such as mind mapping and concept mapping are making an impact in today's classrooms. Mark Oronzio explains what the concept is, how it is helping students and how ICT is taking it to new levels.

**Visual** learning is a proven teaching method in which diagrams such as concept maps, mind maps, tree diagrams, organisation charts and spider diagrams are used to help students of all ages think and learn more effectively. They are all used for storing, processing, organising and presenting information graphically. These techniques are achieving growing recognition in education and are used across the curriculum and at all key stages in the UK, with the most popular being concept mapping and mind mapping. While these are often grouped together under the name 'mind mapping', they are in fact two very distinct learning and thinking techniques.

Whether we believe that the mind is organised into left and right-hand sides, or whether it is a less organised structure of various skills, mapping utilises more of the brain, resulting in more effective thinking. Imagination and association are the keys to high-level memory and creative thinking, and mapping supports this. With many students being visual or kinaesthetic learners, such an approach makes teaching more enjoyable and effective and learning more successful and fun. It is an educational win/win situation that multiplies its benefits over time and with use.

Mapping is a powerful tool for the development of thinking skills and creativity. One advocate of its use is Jane Finch from Worcestershire Local Authority: "Mind maps present a personal view of a concept, problem or idea. Because every brain is different, teachers can, in this way, allow learners to customise their own environments. Students are greeted by a central idea from which they build a flowing, organic image, encouraging active processing of their thoughts – allowing them to consolidate and internalise information."

Concept maps and mind maps are quick to review, and it is easy to refresh information in the mind just by glancing at one. Remembering the shape and structure of a visual diagram can provide cues necessary to remember the information within it. They engage much more of the brain in the process of assimilation and connecting facts than conventional notes or summaries.

## Taking it further

ICT can act as a catalyst for change in teaching and learning by taking the student from a two-

dimensional paper-based map into a multi-layered environment. For example:

- Graphics and symbols can be used to highlight the nodes.
- Labels can be attached to the links.
- Maps can easily be reorganised in a variety of ways to make the picture clear.
- Maps can be hyperlinked to other maps, creating a complex multi-layered system for understanding an idea.
- Elements within the map can be hyperlinked to files, websites and other digital resources.
- Multimedia files, such as MP3 and movie files, could be inserted and played directly from the document.
- Cross-curricular templates and resources could be created so that both teachers and students can get started quickly.

Products such as *Inspiration* have been designed specially for the education market, and the latest version includes access to more than one million symbols to help visualise ideas. Its creators believe that computerised mapping programmes

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overcome many of the difficulties associated with manual mapping, such as modification and updating, as the maps are simple to edit. The fact that these tools have relatively inexpensive set-up costs, are easy to install and can be applied effortlessly within existing lesson across the curriculum, makes them very flexible resources. New multimedia functionality also enables students to insert and play video and sound directly from their maps to enrich projects.



The latest ICT-based mapping tools for education are more flexible and feature a range of different learning environments, which means that students can build diagrams, concept or mind maps and then transfer them into text outlines. Thus, students who may struggle to get their thoughts down in a linear way can pour all their ideas onto the page, reorganise them, link them up and, by transferring to the outline view, can have the satisfaction of seeing their ideas made into a structured story or argument.

**Effective support**

Trisha Lockhart, ICT manager at Holmer Green Senior School High Wycombe, believes that mapping using ICT is effective as it support all learners, no matter what their preferred learning style. Trisha explains: "Our teachers have commented on how this can raise the self-esteem of students who struggle with writing. This is especially the case with boys, who are initially engaged by the ICT aspect of this way of working but who come out of the process having gained valuable thinking and learning skills. Word guide, dictionary and thesaurus also aid writing and literacy by giving students more scope for expression."

These ICT tools can also be used to enhance the experience for auditory learners. Features which allow auditory learners to see their ideas visually as well as hearing the words spoken aloud can enhance learning outcomes for these students.

Ultimately, ICT allows users to expand their ideas by visualising connections and concepts in a way that they cannot do on paper. With paper-based mapping, you can run out of space or find it is frustrating to add ideas or move them around. The functionality of ICT means that the area for expression

is expanded so that space issues do not get in the way of the thought process. This is a strategy that can be used throughout the curriculum.

Sheila Crew, Director of Bristol City Learning Centre, encourages the use of ICT-based mapping in her school: "These skills, whilst of obvious benefits to a subject like English, are actually powerful and have value in every subject and at every key stage. We try and encourage our teachers to use our mapping software by giving them templates and suggesting ideas for how it can fit into specific lessons. These are hosted on our website and are a very popular and well-used resource."

In fact, mapping has been such a successful strategy for promoting learning in classroom that pilots have also been exploring the use of the same techniques in developing teachers' capacity to evaluate their own learning about ICT. In particular, groups have explored non-linear writing and multimodal literacy. By talking about the maps in groups, teachers begin to understand their own concepts about ICT in comparison with the views of colleagues. Teachers' ideas about ICT have been found to change and expand in these discussions, both face-to-face and online. In turn, teachers also become more articulate about their ICT knowledge and understanding.

**Concept map or mind map?**

The choice between concept mapping and mind mapping is one of personal preference.

However, what is clear is that ultimately teachers seem to agree that both are powerful thinking skills which can offer benefits to all students. Ultimately, what is also clear is that using ICT to undertake this process has the potential to extend the flexibility and scope of this approach even further.

Digital communication is changing the way society communicates. Using mapping software is a real opportunity for teachers to experience the impact of the transformation in communication tools which is central to the experience of their young students.

■ Mark Oronzio is Senior Vice President of Inspiration Software.

**About Inspiration Software Inc.**

Inspiration Software, Inc. develops and publishes innovative mapping software tools, designed specifically for education, that inspire learners of all ages to brainstorm, organise, plan and create. Inspiration Version 8, launched March 2006, is available through TAG Learning.

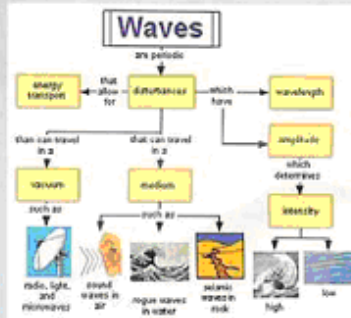
**Useful Sites:**

- [www.taglearning.co.uk](http://www.taglearning.co.uk)
- [www.inspiration.com/ie](http://www.inspiration.com/ie)
- [www.cic3bristol.org.uk/anything/index.html](http://www.cic3bristol.org.uk/anything/index.html)

**What is concept mapping?**

Concept maps graphically illustrate relationships between information. In a concept map, two or more concepts are linked by words that describe their relationship.

Concept maps are ideal for measuring the growth of student learning. As students create concept maps, they reiterate ideas using their own words. Misdirected links or wrong connections can alert teachers to gaps or misunderstandings in their students' knowledge. In this way, concept mapping provides an accurate, objective way to evaluate particular areas requiring additional explanation to complete students' understanding.

**What is mind mapping?**

Mind mapping was first coined in the UK by Tony Buzan in his 1974 book and BBC TV programme *Use Your Head*. Mind maps include a central idea or image, surrounded by branches of associated topics or ideas. Subtopics are then added to the branches as ideas flow freely. Mind mapping is a commonly used tool for brainstorming and note-taking. The process of building a mind map is very fluid and nonlinear, making the expansion of ideas similar to the natural way of thinking. Symbols and images, along with keywords, are used to quickly retain and recall information. Branches are often in different colours to help students to remember the different branches and their associations.