Visualiser
or Document Camera

The visualiser facilitates teachers' capacity to control the nature and pace of the information available to pupils, ensuring that all pupils are looking at the right material at the appropriate time. The learning objectives can remain visible throughout the lesson allowing the children to have a better understanding of what they're learning. Teachers reported that children feel more involved in what's happening.

Becta case study

What is a Visualiser?

A visualiser (also referred to as document camera) is a tool that enables teachers to show any physical object to their pupils, via a digital projector. A classroom can observe a teacher demonstrating text, images, artefacts, living things and even techniques like tying a bow. It extends the range of uses of what was capable with overhead projectors to create a more interactive learning experience. There is no limit with what type of artefact can be used in conjunction with a visualiser.

In essence, a visualiser is a digital camera on the end of an arm (either rigid or flexible), but it is the controls available via the base unit and/or software that increases the usefulness of the visualiser. With most visualisers, you can to zoom in and out, freeze and capture an image then review the image captured. Software that accompanies the visualiser allows for further manipulation of the image or artefact such as timelapse capture to track changes over a period of time.

The camera is mounted 30-50cm directly above a 'display' space or teachers table top onto which documents or objects can be placed for display purposes.

Some of the more advanced models also have the capability to hook up with a VHS or DVD recorder to recorded time motion videos

In a nut shell, there are three main modes of operation when using a visualiser:

1.   At the simplest level it can be connected to a PC monitor or digital projector and all the class can see the target object.

2.   When connected to a PC that runs visualiser software, more opportunities present themselves, for example slow motion, time-lapse capture, storage and review of any 2D/3D object.

3.   If the PC is connected to an interactive whiteboard then annotation over 3D objects becomes possible.

Possible Educational Uses
There is a range of educational uses that could prove useful to teachers and students
- Display artwork.
- Using the 'Zoom' feature, natural/manmade objects can be studied in phenomenal detail. Items such as coins/banknotes, butterfly wings, shells and flowers
- Share a book where the teacher can read to the class and everyone can follow on screen
- Help very young pupils to find correct page in their book
- Assist with sight impairment pupils with larger visuals for them to see
- Displaying 'delicate' texts such as historical documents/maps/photos.
- Modelling how to use a ruler/protractor.
- Taking a series of snapshot images to create an animation.
- Demonstrate a science experiment
- Displaying/observing fauna and flora such as caterpillars, beetles/ladybirds, leaves etc.

Teacher Readiness
There are no technical or training barriers that would prevent a teacher using this tool out of the box once it is properly connected and software (if any) installed.

Technical Considerations
Generally for installing software that comes with the visualiser, the PC spec is minimum 512 Mb running Win 2000 SP4. For Macs 1GB memory running at least OS 10.3

Mid range Visualisers will generally have the following features
- XGA(1024x768) resolution
- 2- 3 Mega pixel camera
- 12x optical
- 8x digital zoom,
- auto/manual focus and white balance,
- should be able to connect to a PC (USB 2), LCD display and/or a digital projector.
- Laser positioning guide to aid lining up books or A4 sheets

Purchasing Considerations
Generally the prices of visualisers suitable for schools range from low end models of approx €300 to approx €600 depending of the specification although as they will become more popular the price will generally decrease.

Additional Considerations
The following relevant points should be noted when considering introducing visualisers to a school.
- Durable for classroom use. Visualiser are generally robust designed with your typical classroom environment Easy to set up and install without technical assistance

- Light enough for portable use. Most visualisers can be folded for easy storage and transport.

- Able to operate with other appropriate technologies, for example digital projector, classroom PC, or interactive whiteboard.

- Reduces photocopying costs

Other relevant websites:

Becta Case Study Visualiser
http://partners.becta.org.uk/upload-dir/downloads/page_documents/research/visualisers.pdf
This document summarises Becta research on visualisers in two schools

Guardian Education Review
http://www.guardian.co.uk/education/2008/jan/08/link.link16
Review of Visualiser

Visualiser Forum blog
http://visualiserforum.blogspot.com/
Blog that focus on Visualisers in Education

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