

Interactive Whiteboards and Collaborative Pupil Learning in Primary Science

iwbcollaboration.educ.cam.ac.uk

The Project

Our research was based at the Faculty of Education, University of Cambridge, UK. We investigated what happened when an interactive whiteboard was used by groups of primary school children (aged between 8 and 10) as they worked together on science activities. The central research focus was on if and how children could use the IWB to share ideas, solve problems and build knowledge together.



Project Team
Faculty of Education
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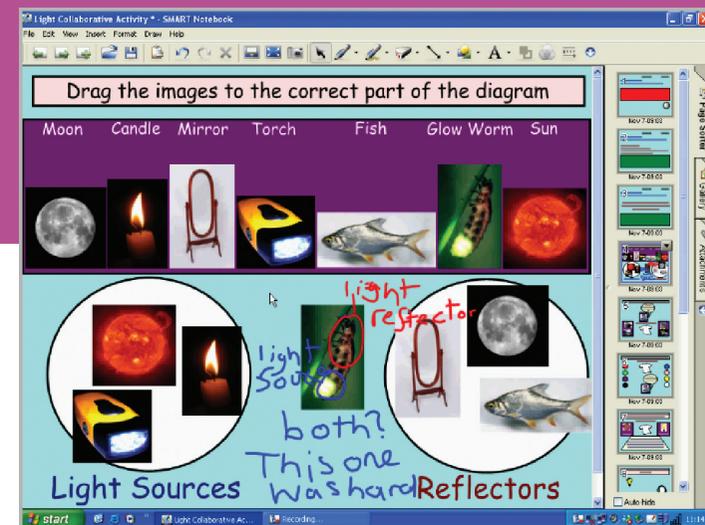
Why Interactive Whiteboards for this kind of activity?

Before we started this project it was our view that the IWB seemed to have great potential for supporting the activity of a small group of people working together, partly because it is so publicly visible and jointly accessible. And of course, it also has many features which make it easy for a group to access material and record their deliberations. However, in the UK at least, children often have little opportunity to use the IWB for extended periods in their classroom, except in response to a teacher's request during whole-class sessions. So, it seemed that the IWB might be really useful for supporting children's collaborative learning; but when we began this project there was no research to tell us if it was or if it wasn't.

Who took part and what did they do?

Twelve teachers and their classes participated in the research. The teachers developed a series of science activities on the IWB which allowed their children to consider options, plan activities and make joint decisions. These activities were designed to exploit features of IWBs that could be expected to help support pupil's collaborative activity, such as the easy and flexible reference to relevant information, easy annotation of pictures and texts, the facility for moving quickly between different images and writing drafts, and the combined presentation of images, text and sound.

Previous research has found that group work in school is often unproductive because children need to develop the skills for working well together, and that teachers can help them with this. An important aspect of the project



was therefore that the teachers, led by the research team, worked on ways of helping children talk and work effectively in groups. As a result, their classes constructed collaborative 'ground rules for talk' to guide their discussions when working in groups.

What are the talk rules?

- **Hearing from all group members.**
- **Considering and respecting everyone's ideas, and any challenges and alternatives that are put forward.**
- **Seeking to reach agreement before taking a decision or acting.**

See thinkingtogether.educ.cam.ac.uk



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What did we find out?

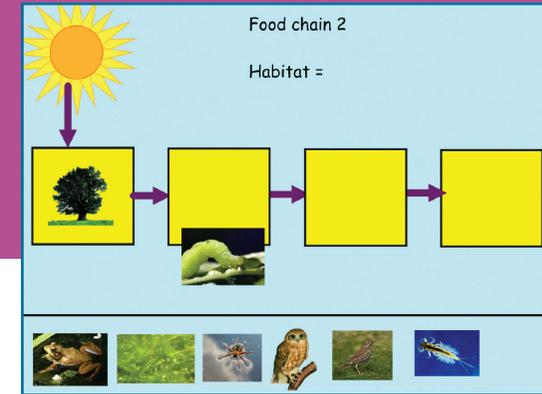
We have found that the IWB does offer some very useful facilities for supporting children's discussion. For example, it allows a teacher to structure a task by arranging material on the IWB, in a specific sequence, for children to access and act upon as they progress. In terms of the children's use, we found that the IWB allows children to:

- access relevant material prepared by the teacher and move easily back and forward through it according to their needs;
- annotate that material to take account of their discussion;
- remove and modify what they have written to take account of each others' views and their changing shared ideas;
- ensure that all members of the group can see what is being discussed, and what any member has contributed as annotations to the material, and so comment helpfully on each other's contributions.

It could be argued that these things could be achieved using pen-and-paper, or other conventional means. But the IWB makes these things much easier, because of the way material can so readily be shared within the group, retrieved, modified and stored. It was also very apparent that using the IWB motivated the children. They clearly enjoyed using it, and most observed groups stayed well on task for the whole of their allocated time (and beyond that of their classmates using conventional materials). It seemed to help them avoid being distracted.

However, we have also seen that in some ways the IWB may not be well suited to the needs of a children's discussion group. The work of a group is very apparent to the whole class, and this might inhibit children. Its size can prevent small children reaching all parts of the interactive screen easily. As with any computer-

based technology, technical failures or 'unfriendly' responses by the machine also sometimes stopped children' activity altogether, while they waited for it to be sorted out by the teacher.



Teachers need to be aware of these possible problems if they are to make the most of the IWB as a support for collaborative group work in their classes.

What to find out more?

Go to iwbcollaboration.educ.cam.ac.uk

