Exploiting the interactive whiteboard to support learning through classroom dialogue and groupwork

Paul Warwick ptw21@cam.ac.uk
Sara Hennessy sch30@cam.ac.uk

Norfolk Schools ICT Conference
Norwich, March 2009

Project 2: Exploiting the interactive whiteboard to enhance dialogic classroom interaction

Sara Hennessy, Paul Warwick & Neil Mercer

We are interested in the potential of the interactive whiteboard (IWB) as a tool for supporting productive educational dialogue in a whole class setting, where dialogue is:

- collective, reciprocal,
- supportive, cumulative,
- purposeful (Alexander 2004)
Prior research has shown that...

- The teacher’s everyday repertoire includes a wide range of strategies from **authoritative, direct instruction** (providing information, checking understanding) to **dialogic, interactive communication** (open questioning, guiding through discussion, building shared understanding) (Scott & Mortimer 2003)

- A dialogic approach is often fruitful for learning – but rare

  “In many classrooms most of the dialogue appears to occur more by accident than in a deliberate, conscious manner” (Smardon & Bewley 2007)

- In the right hands the IWB can be a very useful tool for whole-class teaching...

- …but it has been widely introduced without much consideration of how it might best be used for teaching and learning (Sept. 2007 Special Issue of ‘Learning, Media & Technology’ on IWBs)

- Teachers’ beliefs about learning influence their interpretations of the IWB’s value and the tool itself cannot possibly “transform practice”, though it opens up new possibilities...

  (Gillen et al 2006; Hennessy 2006; Warwick & Kershner 2008)

- Whizzy uses are not our priority in either project: the tool is now widely present (UK primary schools have 9 each on average and secondaries have 24) so how can its possibilities be exploited in the dialogic classroom?
The case studies

Aims

- To see how Ts with an established dialogic teaching approach might exploit the interactive and multimodal features of the IWB to stimulate effective classroom dialogue
- For researchers & practitioners to work collaboratively in developing & analysing pedagogical practices

Participants

- 1 primary, 1 middle school, 1 secondary teacher: not expert IWB users (all gained university accreditation)
- 3 classes of students aged 11 (PSHE), 13 (English), 14 (History: all boys class)

Supporting classroom dialogue with the IWB

Diane Lesson 2 (Primary Deputy Head teaching PSHE)

1. Audio file of teacher reading scenario engages students & frees up teacher to gauge responses

2. Teacher then asks Rebecca to “take suggestions about what people think is really important” and highlight text on IWB

3. Rebecca annotates around text to represent students’ understandings of the characters’ feelings as they are articulated during discussion, going beyond the given text...
My friend Sam asked to tell me something in secret, and then showed me bruises on her arm and back. She said her Dad hits her quite often; he hits her Mum and sister too. Last night her Dad walloped her across the head, and now she can’t see properly. Her sister says she must keep quiet and stay loyal to the family, because if she tells, her Dad will go to prison and the family will be split up. But her head hurts, and she’s scared to go home, and she needs to talk to someone. She says that she chose me because I am her best friend and I can be trusted to keep her secret.

---

**Using multimodal resources supports dialogue & co-enquiry: example from history**

Can we imagine the experience of trench warfare?

T stimulated discussion and speculation through:

- using multiple digital resources to make visible particular meanings and content, building up experience of trench life
- questioning and drawing out ideas
- small group talk and pairwork with mini-whiteboards (wipe-clean) – highly significant interludes in dialogic whole class teaching

"The dialogic classroom, that’s what it is about, isn’t it, to make thinking more analytical than just descriptive and narrative." (history teacher)
Lesson 1

Doctor's diary, 1914: “Just by underlining something, it makes you think about it. So from that point of view, the use of the IWB and the annotation part, I think helps thinking” (Teacher)

If I ever get sent to the front with a regiment, I shall shed tears of joy. I do envy Chris going off so soon, but I think this day will have his day soon too.

We expect to be moved to the front at any moment. The men apparently will be in the trenches alternate 24 hours, changing with a fresh lot of men during the night. I am behind HQ, probably a dug out where I sit and wait for the wounded to be brought to me. I am told that doctors are not allowed in the trenches. I am told that the feeding at the front is splendid and there is a Daily Mail for every 10 men.

Our men have had a terrible experience of 24 hours in trenches, drenched through and in some places knee deep in mud and water. To see them come out, line up and march off is almost terrible. They don't look like strong young men. They are muddied to the eyes. Their coats are plastered with mud and weigh an awful lot with the water that has soaked in. Their backs are bent and they stagger and totter along with the weight of their packs. Their faces are white and haggard and their faces glare out from mud. They look like wounded, sick, wild things. Many too many who are quite beat are told they must walk it. Then comes the nightmare of a march of 2 to 4 miles which they do in a trance.

Poem with spotlight; link to diary
Student dramatisation of 2 lines
Mini-whiteboard interpretations
Lesson 2

Interpreting & visualising poem
Video storyboarding on mini-whiteboards, 2 pairs record on IWB & relay ideas to class
YouTube video “Paths of Glory” related to poem
Recording on mini-whiteboards

Lloyd Lessons 1-2 video compilation
[Is it possible for us to imagine the experience of trench warfare?]

T draws out students’ ideas; some went beyond expectations

Ricky: It’s like when you imagine winning the lottery… it wouldn’t necessarily be like what you think.

Robert: You can imagine what it would look like, but you can’t imagine what it would feel like or how you would be feeling.

Owen: Yes, because on the DVDs or on the films and the poems and stuff, it explains and you can see what it looks like, in wasteland, and you’re both in trenches, but you wouldn’t know what it was like to go ages without food or water.

Ricky: That’s partially true, but you wouldn’t know what it would be like to be shot by a bullet or be bombed or something. You wouldn’t see what it looked like either.

Felix: … every single person’s experience with it would be different… Everybody’s got different feelings towards the war… and you wouldn’t know what anyone would have felt like, even if we were there, you would only know what you felt like.

Teacher: Yes, can we ever achieve a common understanding of anything?
Interactivity supports explicit reasoning & building on others’ ideas to construct new collective view

“building on their informed speculation from some of the things that they had seen”
(Teacher)

Orchestration strategies illustrated

- Climate: creating a **supportive environment** for “working with ideas”, changing one’s mind

- Relinquishing control & developing a sense of co-enquiry: “Can we imagine what life in the trenches was like?”

- Accommodating to and building cumulatively on others’ views: reporting private interactions, publicly recording and giving **status to P contributions** (everyone’s ideas ‘count’)

- Sustaining and managing dialogue, **revoicing**, guiding and moving thinking forward

- Allowing enough **thinking and talking time**; attending to the **pace of learning, not lesson pace**

- Strategic **higher order questioning** to draw out ideas & encourage **critical reflection, speculation, analogy, synthesis, evaluation** – using multimodal resources as stimuli and recording devices
Revisiting earlier activity of class and other classes too:
Exploiting distinctive IWB features to scaffold learning – writing/annotation, saving resources for re-use / extension
Exploring others’ thinking & developing a learning community beyond confines of a single classroom

Conclusions / challenges for education

1. New technologies open up new spaces for (oral & multimodal) dialogue & sustaining it over time (Wegerif 2007)
   How can we better and strategically exploit rich potential of interactive technologies we now have available – and those coming soon – to make processes of learning more engaging & successful?

2. How can we transcend the individualism that plagues our current educational systems and assessment frameworks?
   Can we now build on what we now know works: empowering students through collaborative, dialogic, participatory, problem- and inquiry-based activities?
Conclusions / challenges for education

3. What ongoing support & professional development do teachers need to exploit new opportunities? Crucial but often overlooked: need for pedagogical support

All 3 Ts are disseminating outcomes to colleagues; focusing on dialogic teaching across whole school


Order Alexander’s booklet at [www.robinalexander.org.uk/dialogos.htm/](http://www.robinalexander.org.uk/dialogos.htm/)

Technology itself has no agency; it serves pedagogy!
References


---

P1: We’ve all drawn our own pictures of the trench, kind of like everyone’s got their own view, and then through the IWB everyone’s building a communal view of the trench. . .

SH: If you had to draw a trench in another month’s time for some reason, how much of the other people’s ideas do you think you would pick up on?

P1: I’d probably use quite a lot of those.

P2: Yes. It would be kind of a mix because I put barely any people in mine originally . . . And like the water and everything, it is totally different to what I put.

T: I would now think more about a side-on view of a trench. . . Probably as a teacher there are 2 or 3 pictures that I use from a textbook. . . but I’d probably think more now about that because it’s made quite an impression on me.