Another look back and forward

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Abstract

Some fifteen years ago, Celia Hoyles and myself wrote a paper with the title "Logo and the learning of Mathematics: Looking back and looking forward". A somewhat foolhardy title – looking back may be relatively unproblematic, but looking forward is notoriously difficult, especially when technology is involved. Still, rereading the paper for Eurologo has catalysed some thoughts about what has actually happened in the intervening fifteen years, and what might happen next.

In fact, much has happened to the evolution of technology in learning, and it is not uniformly bad! At least on the software front, Logo itself, in its new manifestations (NetLogo, Imagine, Scratch etc.) have appeared and are in the process of becoming embedded in at least some school and college curricula, and – already in the short life of Scratch – outside.

Nevertheless, I do not intend to focus much on the evolution of the technology. Instead, I will structure my remarks around three interesting themes that centre around the cultural embedding of the technology over the last fifteen years, and see how this analysis might point to the future, using – but not exclusively - my own research as it has evolved and is now evolving.

The first theme is the question of knowledge. How is the knowledge associated with Logo and logo-like systems changing as a result of their use, and reciprocally, how is the evolving vision of what counts as knowledge in the twenty-first century shaping the ways that the technologies are socially constructed?

The second theme is the emergent construction of a technical 'literature': things to 'read' and interpret rather the only things to build – a broadening of the notion of constructionism that I think is probably overdue. And finally, I want to consider the implications of connectivity – it is striking how, in1992 when the web had not yet been born, we conceived of students' activities as essentially solitary, even though we made tremendous efforts (for the time) to exploit the potential of discussion and collaboration.

There is an old joke about mathematicians: there are 3 kinds – those who can count, and those who can't. So forgive me for adding one final theme to the list – computational intelligence. Throughout the last fifteen years I have steadfastly maintained a strong prejudice against attempting to incorporate computational intelligence into the culture and technology of learning, on a variety of grounds that I won't elaborate in this abstract. Now, perhaps, is the time to reconsider this prejudice, and I will share our plans for a new project at the London Knowledge Lab that is about to start. It may be that we are premature, and that the time for computational intelligence is still to come. But for sure, if we look forward far enough, it will come – and perhaps it is better to enlarge the constructionist vision to incorporate and shape it, rather than letting it overwhelm us.