

The Role of ICT in Teacher Research Mentoring

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Teacher research is coming of age. From a teacher's point of view ICT is making self-study action enquiry a valid and valuable aspect of classroom activity. 'Research' has traditionally been undertaken by academics in Faculty but a new role, enabled by ICT is emerging for these professional researchers. Instead of doing social science research 'on' teachers they are working alongside teachers, helping them to undertake their own research on their own practice. This kind of self-study action research has been well documented by pioneers (McNiff, 2002, Whitehead, 1989). In the 1990s some school based enquiry groups flourished, but they were isolated and because they lacked the infrastructure to network them, tended to remain at nascent level or simply foundered. The spread of high-speed Internet access coupled with a steady increase in availability and accessibility of hardware in schools means that an interrogatable database for teacher research is a viable possibility. This paper examines issues in extending the role of ICT in teacher research through exemplification in case study form. It recommends creating a database to improve teachers' access to research on teaching and learning.

Context

Research mentoring comes in a wide variety of guises but is still often associated only with support for undergraduate students, which is provided by Faculty, or student peers. There are notable exceptions and a Google Internet search reveals exciting developments. In Australia, Academic mentoring and is already acclaimed as an enabling intervention:

Sustained work with groups of key staff and an academic mentor is being embraced overwhelmingly as the key to developing a sense of professional learning community in schools. Hunter, J. and Beveridge, S. (2002)

Faculty perspectives: A case study

My definition (Fletcher, 2003) of research mentoring is distinct from others currently in operation in the UK and in other countries because it focuses on self-study through co-enquiry. Both mentor and mentee are seeking to improve their work-based practice. In giving my account of the activity that I call research mentoring I am drawing on my own experience as a research mentor over the past three years. My experience and definition of mentoring (2000) has developed through my practice and in considering definitions and models developed by others, including, those of Tomlinson (1995) and Furlong and Maynard (1995). I feel particularly influenced by Mullen and Lick's (1999) definition and exemplifications of mentoring as a two way synergistic learning process, rather than a kind of one-way apprenticeship, which can be enriched through the use of multi-media and in particular digital video recording (Fletcher, 2002). This has formed the basis of developing my practice as a research mentor, where I am working alongside teacher researchers who have been awarded Best Practice Research Scholarship (BPRS) funding.

I have been assisting teachers in explicating a practice-based discipline of educational enquiry. We (Fletcher and Meacher, 2001) have begun to validate our own and one another's theorising using web-based technology to examine explanatory principles we offer for our practice. In doing so, we respond to an invitation by Hiebert (2002) to create a sustainable resource and demonstrate how systematic enquiry assists learning.

Visualising desirable outcomes:

Decisions about curriculum and instruction are often made without reference to real problems of classroom life. Teachers are 'developed' by outside 'experts' rather than participating in their own development. Unrelated to classroom contexts and teaching practice, bureaucracies tend to produce 'one size fits all' solutions that often fail to make distinctions among different kinds of school and classroom contexts or between the needs of novice or experienced teachers. Leiberman, A (2000)

Vestiges of a territorial, almost tribal, division between university and school staff are slowly disappearing. This was less a deliberate power wielding so much as an undeveloped awareness of what real collaboration could bring to the teaching profession as a whole. My vision is that teachers will co-enquire with colleagues in Faculty to further their own and one another's professional development and thereby help all students in our care live more productive lives... Not only is it important for academics to assist teachers in explicating their knowledge – there is a reverse duty of care here too ... school based teachers as researchers should ask the kinds of questions about academics' research that can move their thinking on. Educational journals like the one collated and edited by Wiltshire Local Education Authority (accessible at www.TeacherResearch.net) provide an excellent opportunity to celebrate and disseminate teachers' research but how many other LEAs or School Boards globally offer such a facility? There are wonderful exceptions like the collected enquiries edited by Jackie De Long and Cheryl Black in Grand Eyrie Canada (which are accessible at <http://www.actionresearch.net>) but I envision a global network of such publications. Teacher Research enabled by ICT is of such quality that it can and should be available to colleagues to extend, re- and define

the pool of professional understanding, skills and values throughout the teaching that McGettrick et al. (2000) advocate for the initial phase.

We need high quality research accounts like Catherine's to be represented in an on-line database where researchers can access specific research by typing in selected key words. The database could usefully be cross referenced thematically and by age range so that a researcher wishing to contact a colleague studying PowerPoint use (like Catherine) might access the information by keying in action enquiry/ICT/secondary/ modern languages. With the surge in interest in practitioner research the raw material for creating a database already exists. I am currently working with Dr Mike Harris at Becta (British Educational Communications and Technology Agency) to bring together examples of teacher research focusing on ICT. We are hopeful that the database will develop beyond UK-based research but we are planning to start by networking enquiry accounts already being undertaken in the UK. Catherine's account is already available globally and we both hope it will not be long before she can make contact with other teachers researching similar foci internationally.

School perspectives: A case study

(A fuller study at <http://www.teachernet.gov.uk> accessed at BPRS, John Bentley)

My research as professional development activity:

One of our Language College targets is to improve MFL exam results through the use of ICT. As MFL ICT co-ordinator, I was asked to investigate the impact of ICT on language learning.

My main aims were to:

- Help stimulate and support learning in the classroom
- Improve my teaching and learning via ICT
- Contribute to the growth of my school as a learning organisation
- Increase my well-being as a teacher by enabling me to live out my values
- Integrate the practitioner and the more traditional forms of research
- Disseminate my findings via multimedia and web technology
- Establish how students feel about ICT and the impact that they feel that it has on their learning and plan accordingly
- Identify and spread good practice in teaching and learning (160 words)

At the beginning of the 2002-3 academic year, I was asked to improve the ICT competence of my MFL colleagues. At the same time, the school ICT co-ordinator asked all members of the school ICT management to consider which ICT skills could be integrated into our Scheme of Works. Having established that PowerPoint was not covered anywhere on the Key Stage 3 curriculum and as a direct result of my BPRS work, I had no hesitation but to suggest that the Languages Department introduced

PowerPoint to their Scheme of Work. I led PowerPoint INSET for MFL teachers and we agreed that all pupils would create a PowerPoint presentation before Christmas.

Deciding my research focus on ICT

I decided to focus my BPRS work on my Year 8 top set German as I knew that they would respond well to this project. I also wanted to have an impact on Key Stage 3 ICT results. I chose PowerPoint because it is not covered in the Key Stage 3 Strategy. It is also fun, colourful, and attractive and brings a large degree of sophistication to students' work. The most influential reason for choosing PowerPoint was, however, that it was a new skill for both my Year 8 pupils and myself. By developing my use of this programme alongside my pupils we could engage in a kind of co-enquiry that would bring about co-learning. It soon became evident to my pupils that PowerPoint though learnt in German is universally applicable to other subject areas. A highlight for me was to hear pupils say that they would be using PowerPoint more for different homework in other lessons.

The main points that have helped my practice as a teacher are:

- Working closely with a research mentor
- Learning alongside my pupils
- Reading pupil feedback and acting on it
- Sharing in the pupils' enthusiasm and enjoyment
- Impacting on the whole school curriculum
- Developing my own PowerPoint skills and taking part in a learning loop – the pupils learning from me and vice versa

Context:

My BPRS work was an integral part of my teaching during the early part of this year, alternating between my classroom and the computer suite.

I launched my BPRS work in January 2002 with my own 4-slide PowerPoint presentation to my year 8s. At the launch, I handed out booklets on how to use PowerPoint and designed a pro forma of questions that the class would fill out at different stages for homework. A colleague videoed the session, which meant that I was able to start collecting evidence and observe the pupils reactions later amongst other things. I planned that the pupils should compile a 4-slide PowerPoint presentation in groups by the end of April. This would enable them to demonstrate what they had learnt. The content was a revision topic. Letters were sent to parents to introduce and encourage their involvement in the project.

In February, pupils presented their choice of topic to the class in order to develop a sense of shared responsibility and accountability. Pupils were encouraged to keep a diary to map their progress. After Easter, pupils commented on how PowerPoint was improving

their language learning as well as designing questionnaires for their parents and fellow group members.

The highlight of the project was when the class showed off their presentations to other year 8 classes. This was a form of validation for the whole project – a way of showing off what they had learnt and testing our claims to have improved our learning together.

Funding has enabled me to

- attend a course called “Using ICT in Key Stage 3 and 4 to best effect”. I learnt more about the potential of PowerPoint in the classroom.
- learn how to disseminate my work via multimedia and web technology via my own website. This will contain my BPRS summary, photos, links to PowerPoint presentations, evaluation forms and an article that Sarah Fletcher and I wrote on mentoring in action research for the Wiltshire Journal of Education. My work will now reach a far wider audience!

Outcomes of the project include

- Improved students’ ICT skills
- Established the differences that ICT has on learning
- Established effective strategies for using ICT in the classroom
- Contributed to both departmental ICT and school ICT policies
- Made creative use of a variety of media for analysis and sharing of work in progress
- Shared my findings with the school and improved myself as well as teaching and learning in schools
- Shared my understandings with colleagues at the Becta Conference in June 2003

Working in partnership to promote teacher research

The mentoring process began in May 2001 when Sarah invited me to participate in BPRS action research. Sarah encouraged me by both providing examples of other action research conducted by teachers and reassuring me that an action research enquiry would form an integral part of my daily classroom practice. Sarah insisted that all teachers could carry out research. What separates action research from everyday teaching and learning is that work is shared, systematised and validated.

In the autumn, Sarah and I met to start working together and to explore what it is to engage in action research. We brainstormed possible strategies. Sarah encouraged me to reflect critically on my own practice, share any concerns that I had and assisted me to establish a focus for my research.

In order to broaden the context of my enquiry and considering what I wanted my main focus to be, Sarah proposed that I think more about my research by asking myself the following questions:

- What is in it for me?
- What really matters to me most and why?
- What do I want the students to learn?
- What do I hope to learn?
- What could you/the students do with...?

followed by the broader implications for the whole school and community:

- How and who will that be shared with?
- How will your enquiry impact upon the whole school and wider community?
- How will you share your work with your colleagues/whole staff/community?

Sarah described how thinking more about I would lead me to have more ownership of my research. We looked at the concerns that I had highlighted and only one began with the word 'I'. Sarah encouraged me to assume that this was the concern that meant the most to me. The concern was framed like this:

I am not happy with use made of our state-of-the-art PC suite and software.

Sarah explained that having established my main concern, my particular reasons for this would be easier to identify.

Why am I choosing to work with PowerPoint and Year 8 and what might be implications for every subject in my school?

In my BPRS bid, I had already stated that I wanted to focus on Year 8 but Sarah led me to question this decision. She did so by asking the question:

What area of ICT/MFL do I most want to influence and why?

I responded 'with Key Stage 3 and the levels that we submit at the end of Year 9'.

I was then challenged to consider which particular year group would benefit most from this enquiry. I immediately eliminated Year 9, considering it too late to be effective here. I didn't consider Year 7 either as I am happy with our Year 7 language software provision. (The Vektor beginners' software 'Essentials' is aimed at this level.)

I came back to Year 8 who currently use the same software in MFL lessons as the Year 7s. With progression in mind, I considered it time that the Year 8s were challenged and introduced to a new ICT skill.

Sarah quizzed me as to which ICT skill I would be new for Year 8 and I mentioned PowerPoint and Spreadsheets. Having mentioned PowerPoint first, Sarah led me to assume that I was more interested in this skill and it's potential in the classroom.

When Sarah questioned me as to what I hoped to gain from working with PowerPoint, I admitted my lack of competence in this skill. I commented on how excited I was at the prospect of aiming to improve my ICT and in particular that of PowerPoint alongside that of my students.

Sarah asked me what the benefits of using PowerPoint could be for both the Year 8 students and me. I talked about PowerPoint being the way forward. In my opinion, it will replace both the white and blackboard and will be used in our classrooms for presentations and lessons by both teachers. It is also highly likely that students will be asked to do presentations via PowerPoint both at school and in the workplace

Sarah got me to consider what the final outcome of this project could be. She suggested one possible scenario. The students and I could give a presentation to staff. The aim of this would be to celebrate:

- where the students had 'come from'.
- what they had learnt.
- what they could now do.
- what I had learnt.

Throughout the entire session, Sarah put ideas to me but was careful not to give me definite solutions. She used vocabulary such as 'What if? How..? You might...What is sometimes really nice is ... What I can see you doing is ...and in fact even quizzed me as to whether I felt that she was giving me solutions or not!

We also considered my professional values and whether I was being the teacher I wanted to be. Am I denying myself my professional values and if so, why? This was a question that I would have to keep revisiting throughout my enquiry.

After having established a plan of action for my enquiry, Sarah suggested that we talk through what both the students and I would be doing at each stage. As she had on many occasions before, Sarah asked 'Shall we talk about?' and encouraged me to systematise the processes that all participants would be involved in.

Sarah enabled me to clarify in my mind the two processes that would be running parallel: that of my Year 8 research participants and myself. She made me feel confident both of the path that my research would follow and my ability to carry out action research.

It was particularly useful to be given examples of other action researchers and the challenges they faced, especially regarding the question of the fulfilment of professional values.

Issues raised by the Faculty and School case studies

- Co-enquiry can usefully be engaged in with research mentoring relationships
- ICT can usefully be the focus and vehicle for enhancing teaching and learning
- Funding and hence time are essential ingredients in enabling research
- Case studies like these need to be accessible for other teacher researchers

With the demise of the DfES scheme for Best Practice Research Scholarships and increasing competitiveness for limited funding, who will provide the resources for School and Faculty to build the knowledge base that these case studies represent?

Support at government level is essential to enable professional development for colleagues in School and Faculty to collaborate in ICT enabled research initiatives. Teacher research is not a bolt on extra but must become an integral part of practice.

Recommendations:

Nationally (and potentially internationally) the profession of teaching now needs:

- a network of school websites, each representing the research being undertaken by teachers and their students in a particular location
- regional, national and international conferences both virtual and actual that will support and sustain the growth of knowledge about best practice in education.
- facilitation of research mentoring schemes with professional development for school based mentors to support their colleagues in undertaking their research.
- A simple and accessible data base that teachers can use to share their work and find others undertaking similar projects so ICT enabled co-enquiry will be viable.
- More case studies at www.TeacherResearch.net in 'Teachers as Researchers'.
- More co-written papers like this in internationally renowned research journals.
- A simple accessible database for teachers and research mentors to access as they work together to improve teaching and learning for School and Faculty students.

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