

Read Review Respond – Alan Perkins

Hennesy, Ruthven and Brindley – Teacher Perspectives on integrating ICT into subject teaching: Commitment, constraints, caution and change.

The author is looking at how secondary school Maths, English and Science teachers have adopted ICT into their regular teaching to both help with familiar activities and so maybe changing those activities due to the nature of ICT and specifically in terms of cross curricular activities. They will then look at how different influences affect this adoption: *commitment, constraints, caution* and ease of *change* in pedagogy.

Summary

- The authors say that the unrealistic early papers on ICT radically changing teaching have not been fulfilled, and instead *'evidence of a reshuffling the pack of cards'* has been found where teachers continue to do what they have always done but using new technology. One reason for this could be due to *'centralised curriculums'* like in UK.
- In USA where this is less so, there were changes where technologies acted as a 'fulcrum' for change of pedagogical practice. Little thought has been given though to new approaches specifically to *'information literacy'*
- Even though at a countrywide level a lot of money has been spent, this often has not filtered down to subject specific areas, and often is *'a thin coating of technological glitter'* - not only due to lack of resources, hardware and support but also because teachers did not want to throw away their existing teaching and learning styles – without proof of their worthiness. Training never focused on ICT pedagogy but rather on skills training.
- Subject *'communities of practice'* are discussed with it being the basic social unit within a school especially after NC introduced - and so ICT adoption would depend upon how *'congruent'* the departments practices were with ICT. Often in subjects like English *'the subject sub-culture co-opts and colonises the computer, which becomes 'just another tool''*
- It is important that the *cultural aspect* of technology as a learning tool and its effect is highly visible BUT that its *mediating role* is invisible so a teacher only sees how the subject has been helped.
- Old chestnuts are aired including that adoption takes time, and effort and often ICT is unreliable. It is important that the whole school community from SMT down is supportive and that teachers are motivated and given time.
- The authors lay out that they used *'focus groups'* to gather their data including teachers and students. It is noted that schools in this sample were *'relatively socially advantaged and academically successful.'* Use of ICT in these schools in all subjects was not *'particularly innovative'* involving most basic tasks like word-processing – generally comments with ICT use were good with Maths, variable with English and less good with Science.
- Issues related to reliability, resources etc are generally ignored in this paper as covered elsewhere.
- Interesting comments that Maths and Science departments generally made comments in interviews that showed a collaborative *'we'* nature with ICT use in subject, whereas in the English departments a much more individualistic use of ICT was seen.
- **Commitment** – main differences were seen school wide rather than department wide. SoW only a few departments had integrated ICT and then teachers were either disappointed with the effect it had or found that the difficulty of teaching with ICT had led to very detailed lesson planning and SoW.
- Partly this was due to teacher confidence – **and interesting how it was suggested that teachers did not want to be seen to get things wrong with ICT or** have a *'perceived lack of control over learning processes.'*
- External influences were looked at with teachers *'eroded autonomy'* and the problems with fulfilling a curriculum in limited time so that if ICT is used in fact teachers feel they

- are teaching ICT skills rather than their subject – and so ICT is just crammed in. Their seems to be little collaboration across subject departments who operate independently and so do not share knowledge across subjects or allow students to do so either.
- External regulations and specifically the basic traditional exam requirements are looked at - and how exams often do not fit into how technology can be used to teach subjects e.g. graphical calculators being banned from exams... *'when you do your driving test they don't test you in a horse and cart'*. Exams are be all and end all, and only if examinations take into account and bring new assessment systems which link to the new skills ICT bring then maybe ICT adoption will increase.
 - **Beliefs of how ICT can effect education were assimilated from meetings:-**
 - i.* increasing speed and productivity, and students pride in work
 - ii.* improving immediate feedback, encouraging self correction and experimentation and 'have a go' attitude
 - iii.* increasing motivation by reducing copying out etc...
 - iv.* autonomy and independent learning
 - v.* overcoming issues related to 'pen to paper' motivational problems
 - vi.* broadening sources and research
 - vii.* increasing use of interactive modelling and simulations
 - Teachers considered it important that ICT was not just an add-on but enhance activities – and beyond this the concern that ICT if used too much would lead to basic skills becoming worse: - handwriting, numeracy and reading...this was especially true within English departments and shows the greater difference with its subject culture.
 - Ways to make sure ICT enhances activities are discussed including structuring questions, and providing open ended experimentation problems – but again the author brings up teachers worry that the word processing for example will take over the writing and become more important.
 - The author explains that ICT must have an invisible mediating role and so make subject matter easily visible.
 - All departments except Maths discussed the issue of *'critical literacy'* and that the NC and SoW hardly touch on this at the moment....
 - Some evidence was found by the authors into ICT leading to new forms and styles of learning: - revisioning/ redrafting of text for audience, looking at new modes of communication e.g. email against letter writing. BUT it was mostly used as a tool to support traditional methods of learning. However simulations and graphing applications were discussed as opening up many new possibilities – although there was some worry that eventually this would lead to the ending of *'wet'* sciences and actual practicals (although I like the note about actually in University it would all be on computer anyway!).
 - English teachers *'feared the erosion of the print culture and many had unresolved mixed feelings.'*
 - In the conclusion the authors briefly mention the students saying that it fitted well with teacher's observations of how ICT enhanced teaching and learning.
 - The authors return in the conclusion to the fact that with existing structures and the NC the *'underlying ethos is at odds with the construction of ICT as a cross-curricular 'tool' and a vocational 'key skill'*". The authors finish on a positive conclusion saying that in the future they still believe ICT to play a 'major role in reshaping education'

Personal Thoughts

- Blimey it was long.....
- Why was the student focus groups ONLY GIVEN one paragraph in a 40 page paper?
- It was good for an article to focus less on the reoccurring topics of reliability, and hardware use – even though this is still the main problem at schools that I have been at...
- The ideas that the NC separates and strengthens departments is very interesting as trying to work and collaborate across departments within schools becomes increasingly difficult and only when departments like Business, ICT and Art collaborate for a

- competition do technologies actually become part of an enhanced learning experience with multimedia, video, presentation techniques, search and information fluency etc. This led nicely into discussions in this weeks chat seminar about the primary curriculum going back to themes /topics and to the introduction and popularity of the International Baccalaureate which stresses cross curricular projects and links - which the UK government is to give licenses for in every town in England (note this was speculation)?
- No thoughts or discussion, and it seems in many of the papers around this subject, to the fact that basic ICT skills are important as other basic skills in the curriculum, and that discrete lessons still have their place within a cross curricular model of delivering and using ICT – whether these discrete lessons become less formal and ICT departments in schools are much more drop in centres running different courses to support students learning across the school? Surely the reason that a Maths teacher is astounded by the levels of differentiation needed with a spreadsheet application is due to the skills not being taught early enough and in a way to support the Maths lesson later?

Strengths of article/ Do the arguments resonate with my experiences?

Discuss the issues of Commitment, Constraints, Caution, and Change in relation to your experience of ICT integration in your own curriculum area.

- A lot of the discussion was very interesting and the links to different departments also linked with areas at some of the schools I have been at. Specifically English departments and their worries about the decline of the 'print' culture and focusing on basics seems pretty universal. Only with new younger English teachers will they even see the value on trying to publish work on a weblog and have peer review – and then experiment.
- The issue of support from a whole school community is true to allow ICT to develop teaching and learning, and without agreement a few committed individuals will not make much headway.
- Caution is always very understandable, but it seems sad that wanting to try other things and experiment and fail is not supported in schools as this is what we are trying to teach students ...?
- This article due to its length and breadth I am still digesting so hopefully more ideas and thoughts will leak to the surface in time....