

## HOW CAN WEB 2.0 HELP TEACHERS DEVELOP?

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### ABSTRACT

This chapter looks at the ways in which teacher training and teacher development are taking place online. It seeks to address the ways in which teachers learn to teach and considers how “Web 2.0” applications and other collaborative, interactive technologies may transform teacher education. In an overview of teacher development theories including social constructivism and critical reflection, the chapter attempts to situate current practices in relation to research in teacher learning.

### INTRODUCTION

When I first became a teacher, I used to go to an internet café once a week to check my email and the football results. The internet had no effect on my teaching whatsoever. Now, I can download lesson plans, worksheets and video and audio materials, set up areas to share information or media with students, receive homework assignments in many forms at any time, have students publish and interact in any number of ways - the possibilities have expanded and are continuing to do so. The speakers at this and the previous Wireless Ready conference have presented to us many fascinating case studies of how they are helping their students to learn languages in the age of mobile media.

But what of the possibilities for *teacher* learning? In preparing this presentation I thought back to the pivotal junctures in my career so far, and how I had found solutions or made progress alone or with the help of others. Informal staffroom collaboration, observation, journaling and other reflective, self-initiated developmental practices had been a big help.

As the internet expands, so do the opportunities it provides – this was the focus for my presentation.

We must first, as always, define our terms, before we address our questions. There are numerous readings of the terms “Teacher Education”, “Teacher Training” and “Teacher Development”. For the purposes of this discussion I have defined Teacher Education as any activity which is intended to help a teacher grow professionally. It includes Teacher Training (top down and formalized with anticipated outcomes) and Teacher Development (self-initiated, process weighted and holistic). For a useful dual taxonomy which compares development and training, see Woodward (1991).

Web 2.0, is a term I am sure you are familiar with if you are reading this paper. However, attempts to pin it down to a clear set of ideas or rules have proven challenging due to the rapidly shifting nature of the net itself. I look at it as a repository for storage, manipulation, re-presentation of data, a shared space for collaboration and a set of portable tools and applications to be utilized (Elliott, 2008).

Bax's (2003) concept of normalisation in education claims that each technology reaches a stage of familiarity at which point it is so ingrained in the life of the teacher and learner it is no longer discussed as a separate issue – like a pen, or a CD player. Clearly, we have not *all* reached that stage – but Prensky (2001) claims that *some* of us have. The terms digital native and digital immigrant are probably familiar to you – the man who coined the terms believes that those who are growing up with information and communication technologies are actually wired differently. They operate at twitch speed; they access ideas randomly and process them in parallel. There is some scientific evidence to support this idea, although it is rather simplistic to offer that one's date of birth is the only, or indeed the most significant factor in familiarity with technology. Siemens (2004) believes that we need a whole new learning theory, which he calls connectivism. He claims that the rapidly growing sum of information requires that we now store our knowledge in others, rather than socially construct our own learning. Learning is no longer internal but is about the ability to access networks.

How, then, do teachers actually learn? I selected three areas which I feel are key to this question; levels of expertise amongst teachers, social constructivism and reflection.

There are a number of theories and models which describe levels of expertise in the course of a teacher's career (e.g. Fuller, 1969, 1974; Dreyfus & Dreyfus, 1986; Huberman, 1992). What each reminds us is that teachers have different needs, goals and beliefs at different stages of their development. I argue that, unfashionable though it may be, top-down, competency-based and product driven training programmes are not only what novice teachers *need*, but also what they *want*. The difficulty for teacher trainers is how to provide such hands-on

and intensive *training* on-line. Lesson observation and modelling is a particular issue for the pre-service teacher. For experienced teachers, however, web 2.0 can provide a wonderful way to stay focused and avoid what Huberman describes as "bitter disengagement" (1992, p.126).

Social constructivists believe that we each construct a knowledge base through interaction with the environment around us. The tools we use to do this actively shape the knowledge as we reframe it. This helps us to understand differences in teacher beliefs, as each teacher is a product of his own social construction. Ideas which are too challenging to be understood alone can be understood collaboratively; in Vygotsky's Zone of Proximal Development, for example. This highlights the need for collaboration in teacher development.

If social constructivism states that we are a product of our interactions, then reflective practice theorises the ways in which we can most effectively process those interactions to enhance development. The two concepts are in many ways complimentary. Fundamentally, objective and productive reflection on action, or upon beliefs, is a major part of teacher development. Teachers need a positive and supportive environment in which to reflect. Whether this environment is real or virtual needn't be important.

These are established ideas in research into teacher learning, but what new ideas are emerging with new technologies? There are a few areas where real differences and fresh ideas are emerging, in both teacher training and teacher development.

### **VIRTUAL LEARNING ENVIRONMENTS**

VLE's, LMS's like Blackboard or Moodle have attained a degree of normalisation in teacher education programmes, certainly in the UK. As Downes (2006) mentions, they are not always being

used to their fullest potential. There are increasing numbers of trainers incorporating RSS, video, searchable content, wiki's blogs, forums and instant messaging in to these platforms, but at this stage, despite any institutional or governmental drives, the trainer his or her trainees are the ones who determine this. Prensky believes that the time to debate the changing nature of pedagogy is over and that we need to connect with the new actuality. But in mainstream teacher education we need to balance this to ensure we don't leave the less techno literate behind.

One interesting departure point for Moodle in particular is that it is based on social constructivist principles – collaboration and sharing of ideas is facilitated by the applications. With trainees in contexts worldwide, problems can be put to the group, discussed, tested, reflected upon and assimilated into the cognitive construct with great immediacy and relevance. This is something that traditional face to face education cannot really match.

### **GAMING AND VIRTUAL WORLDS**

Virtual worlds are a very hot topic in education at the moment, and rightly so.

There is a great future for this kind of virtual world in education of all kinds. As far as teacher development goes, we can take part in conferences all over the world now through a combination of this and other kinds of technology, as we have seen today. Already, MUVE's (3D Multi User Environments) are being used to do things which it would be impractical to do in reality, through distance in time or space (visiting historical sites) or risk (medical or military procedures). This may help, in part, to solve the dilemma of the teaching practicum. Looking further into the future, as more and more students learn languages online in places like second life, it is clear

that their teachers should be trained there. We now need online trainer trainers.

On a theoretical level, there are elements of social constructivism well served in Second Life; particularly the experiential and social aspects. Oblinger (2004) even brings Vygotsky into it – suggesting that learners can create a zone of proximal development (ZPD) to collaborate on tasks. I wonder however, if is this something that couldn't be done just as well via simpler technologies? It does preclude those of us with old laptops and cheap broadband deals.

### **BLOGS AND PODCASTS**

Judging by the speed of change in the world of the web, blogs could be seen as old news, largely superseded by social networking sites and software. However, we mustn't be tricked into assessing applications for their newness or novelty. In the case of blogs (and their audio cousins, podcasts), these simple applications have a great deal to offer the teacher seeking professional development. Reflective journals are an established method in teacher education. Blogs improve upon the analogue version in this case, offering versatility in media options, choices of receiving and giving feedback collaborating, and accessibility.

### **CONCLUSIONS**

When researching technology and its applications, the temptation is always to check the new and discard the old. If we do so, however, we can lose sight of our main focus (which, for educators, should not be the technology itself) and we are also ignoring a lot of wise people whose words may gain even more relevance with hindsight.

One of these people is Larry Cuban, whose book *Teachers and Machines* (1986), describes the commotion caused by cassette recorders, televisions

and other incredible high-tech innovations. At the time, many of these seemed just as revolutionary as internet applications do now. We don't yet know whether the way we learn has been fundamentally changed by web 2.0. But I think it is safe to say that teachers now have a wider range of choices when plotting the trajectory of their own learning.

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