

Chapter XXIII

Internet Technologies and Language Teacher Education

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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. The second part of the chapter focuses on blended and distance learning, Computer Mediated Communication, and the applicability of Web 2.0 applications to teacher development. It is hoped that the chapter will provide a useful summary for teacher trainers and classroom practitioners who are hoping to use technology for developmental purposes. At the same time, it may assist those who are working with technology but are less familiar with the context of how teachers learn.

INTRODUCTION

English Language teachers are a disparate and diverse professional group. There are teachers working in tertiary, secondary and primary education, as well as private institutions, across the globe. Teachers may work with students on a one-to-one basis, or teach hundreds at a time. Certain approaches or methodologies are practiced rigidly by some, while others take a more eclectic approach. It is also very important to remember

that the vast majority of English teachers are not native speakers of the language.

Teachers from different contexts also learn to teach in different ways. Non-native speakers of English, especially those working in state sponsored institutions, usually require nationally recognized qualifications to enter the profession, with formally established developmental pathways. On the other hand, many native speakers come to English Language Teaching with little or no specific teacher training. This chapter will

deal with the idea that, whether teachers are “educated” in directed programmes or they “develop” through experience and reflection, all teachers are to some degree responsible for their own growth. The assertion is that all teachers operate in their own “spaces,” both metaphorically and literally, and the issue of how they develop themselves professionally is a pertinent one. As the Internet evolves, the options for both teachers and teacher educators are changing; flexibility across time and space is improving and new paradigms of interaction are beginning to gain credibility.

Changes in the role and influence of ICT in teacher development occur very quickly. Technology cannot yet meet the goals of some practitioners, who are glimpsing the possibilities of this new world. As they race ahead, there are far more who are in danger of being left behind. The digitally poor, who do not have the equipment, the knowledge or the confidence to enter the online world fully, may be missing out on developmental opportunities. Normalization, as defined by Bax (2003), is not a uniform process. However, even those who are not familiar with the term “Web 2.0” may well be familiar with some of the applications to which it refers. What Web 2.0 is exactly is not so easy to define. O’Reilly’s (2005) comparative list of Web 1.0 and 2.0 applications has been much re-presented, and remains one of the pithiest distillations of the concept. Kelly (2005) was almost evangelical over the development of Web 2.0 as a religious “Beginning,” which concerned Carr (2005) greatly. His criticism of those who sought to assign ethical values to technology is not directly relevant here, although it is worth remembering that computers are merely tools and will never be a panacea for all social or educational problems. Tim Berners-Lee, one of the Internet’s founding fathers, is somewhat cautious about the term, and has complained that it “lacked coherent meaning,” having become a marketing buzzword (quoted in Anderson, 2006). Brown’s insights (2007) into the links between constructivist theories of learning, CMS (Content Management Systems) and Web

2.0 in education seem especially apposite to this study. He drew parallels between the characteristics of Web 2.0 and the learning paradigm (active, multilateral, engaged), as opposed to Web 1.0’s traditional teacher centred style, and cautiously suggested layering higher education CMS’s with appropriate Web 2.0 applications.

Despite some misgivings about the term itself, what is undeniable is that millions of people have access to broadband, and that interactive Web applications and platforms are now increasingly part of the mainstream. This chapter approaches the Internet from the perspective of teacher education and defines Web 2.0 as a platform through which tools can be accessed, a shared space for collaboration, and as a repository of knowledge which can be added to, manipulated and re-presented.

There are three central questions in this chapter, or perhaps one question in three parts. One of these is whether online teacher trainers and trainees are fully utilizing the potential of current technologies. Leading on from that question, we need to look at whether it is possible to successfully deliver teacher training through Web 2.0 technologies, and if it this is not possible now, consider if it might be possible in the future. Finally, it is vitally important to consider the construction of wholly new paradigms, based on the ways in which people interact and learn online. The first two questions deal largely with teacher training, and in particular pre-service training or the education of “novice” teachers. The final question is also relevant, perhaps more so, in the area of teacher development. These terms will be defined in greater depth in the first section, in order to locate the chapter in the greater body of thinking about teacher learning to date.

It is the third question, too, which really gets to the heart of the “transformation of learning” that this book engages with. Modern technologies have undoubtedly “changed” the way teachers teach, and learn to teach, on a surface level. The interactivity, the potential for collaborative research and shared data, the new ways of receiving,

organizing and manipulating information offered by Web 2.0; these are what might *transform* the way teachers develop. Access across continents and time zones to information and social networks will allow motivated teachers to free themselves from a reliance on institutional development. Educational policy, with its many stakeholders to satisfy, is by its nature conservative in its attitude towards the new. Cuban (1986) addresses this in his historical overview of technology throughout the twentieth century, and concludes that a lack of planning or real understanding has led to a slow and erratic adoption of new machines. In describing the early years of microcomputers in the classroom, he really does sound like a voice from another age. Yet in the broader context of the technology that came before, and what we have seen since, Web 2.0 could be considered the latest fad in the cycle of hyperbole, or something truly unique and new; a transformation.

There are claims that the way humans think is already being inexorably transformed. Prensky (2001) coined the terms “digital immigrant” and “digital native” to describe the generations raised before and after the advent of personal computers. He posits that, through different kinds of input, digital natives have a different brain structure geared towards multi-tasking, networking and “twitch” response times. Prensky argues, and this is very significant for this study, that the time for debating changes to pedagogy is over and educators must learn to connect with the new actuality.

This chapter intends to explore some of the ways in which teachers are now more able to manage their own learning through the use of technology. It will also consider how teacher training is developing online, how teacher education programs and classroom practitioners are beginning to discover new Web applications, and suggest some potential future interactions between language teacher education and emerging technologies.

The first section will look at concepts of teacher development and training in English language

teaching in order to set the context for where we sit now. The next section will attempt to link practice and theory regarding existing beliefs about teacher education and network technologies. Finally, we will look to the future, speculating on possible directions for both research and practice in the field.

TEACHER EDUCATION, TEACHER TRAINING, TEACHER DEVELOPMENT

Teacher training, teacher education and teacher development are three concepts which need to be defined and clarified for the purposes of this study. Some theorists have used the terms interchangeably, while others have suggested overlapping definitions and still more have drawn clear distinctions. Mann (2005, p. 104) points out differing European and American perspectives, with Europeans separating development from training and education with regard to agency; teachers are trained or educated, but they develop themselves.

Mann (2005) summarizes teacher development as a bottom-up, continuous process in which teachers seek to understand the interactions between their inner and outer worlds. Although professional development, or continuing professional development, may appear quite similar, CPD is often driven by institutions and tends to emphasize career requirements over personal values.

Teacher training, imposed or top-down, is a process in which skills are imparted and honed (Roberts, 1998). It can be in a process in which teachers *are developed*, rather than one in which they are given the opportunity to develop. However, a significant number of contemporary thinkers in teacher education believe that teachers should be assisted in building life-long learning skills through such skills as reflective practice. It could also be argued that training can be a part of teacher development, but development is not

necessarily achieved through training. Head and Taylor define development simply as “change and growth” (1997, p. 1) and describe how training and development are “complementary components of fully rounded teacher education” (1997, p. 9). For clarity in this chapter, “Teacher Education” is designated as an umbrella term to cover both self-initiated / self-directed practices, and more formalized training programmes and systems — that is, any activity in which teachers participate in order to learn to teach or improve their teaching is Teacher Education.

Davis (adapted in Woodward, 1991, p. 147) offers us a model with which to distinguish between “Teacher Training” and “Teacher Development.” This model also provides us with a framework with which to analyse and evaluate teacher edu-

cation theories, and how they may be operating in the new reality.

Learner autonomy, empowerment and other similar concepts of self-determined lifelong learning are generally seen as “good things” in contemporary western education. Thus “teacher training,” defined here as top-down, compulsory and product / competency oriented, is treated by some as suspicious in its motivations and as a less desirable mode of education than the more democratic “teacher development.” The current orthodoxy seems to be that autonomous learning skills should be fostered in trainee teachers, but that pre-service and early teachers can benefit from competency based training programs. Studies in career-long levels of expertise in teaching generally show that teachers’ foci shift over time, and

Table 1. Development vs. Training (Woodward 1991, p. 147)

Training	Development
competency based	holistic
short-term	long-term
one-off	temporary
external agenda	internal agenda
skill / technique and knowledge based	awareness based, towards personal growth and the development of attitudes / insights
compulsory for entry to the profession	non- compulsory
Top-down	bottom-up
product / certificate weighted	process weighted
means you can get a job	means you can stay interested in your job
done with experts	done with peers
Compulsory	voluntary
competency based	holistic
short-term	long-term
one-off	temporary
external agenda	internal agenda
skill / technique and knowledge based	awareness based, towards personal growth and the development of attitudes / insights
compulsory for entry to the profession	non- compulsory
Top-down	bottom-up
product / certificate weighted	process weighted
means you can get a job	means you can stay interested in your job
done with experts	done with peers

teachers and teacher educators need to recognize that teacher education techniques should be appropriate to the particular developmental stage.

DEVELOPMENTAL STAGE MODELS: FROM NOVICE TO EXPERT?

In her “concerns based” model, Fuller (1969, 1974) sought to address the motivations of pre-service undergraduate teachers and inexperienced teachers in comparison with experienced teachers. The professional concerns that preoccupied them were characterized as “early” and “late” respectively. Through her own research and analysis of similar contemporary studies she discovered that “early” teacher concerns are with the “self”: “Young, inexperienced teachers usually are not concerned about teaching at all. Our research indicates that they don’t know enough about teaching to be concerned about its realities” (Fuller, 1974, p. 113).

The Dreyfus and Dreyfus model (1986) describes a transition through five key developmental stages in the whole career of a teacher; Novice, Advanced Beginner, Competent, Proficient and Expert. Rather than “concerns,” this model is related to *intuition* in teaching, with a progression from dependence on rules to an ability to work in the classroom intuitively. Huberman (1992) based his research on the concept of life-cycles and created a more complex model which allowed for different outcomes in teachers’ careers. Whereas progression in the previous models was linear and followed a single strand, Huberman includes such aspects as monotony and self-doubt which may lead to a mid-career crisis. The direction of “trajectory” (1992, p. 126) will decide whether the teacher ends their career in serene or bitter disengagement.

These theories are relevant to this enquiry for three reasons. Firstly, it appears that novice teachers are concerned with survival in the classroom and this usually means building basic competencies such as language knowledge, classroom

management techniques and materials selection and design. These early teaching concerns have traditionally been developed through intensive training programmes (such as the PGCE or CELTA), which involve a great deal of real time trainer / trainee contact, observed classroom teaching practice and face-to-face feedback. The question is whether such programs can be delivered or administered successfully (in part or wholly) through emerging Internet technologies.

The answer to this question is also of significance to employers; certain qualifications have international currency and credibility, and act as gatekeepers to areas of the teaching profession (for example, CELTA and DELTA have the cachet of the Cambridge University brand, and standards are painstakingly applied). In the broader community, the online degree is gaining acceptance but is still seen as a poor relation to the traditional degree by many employers (Carnevale, 2007). This is complicated by regional and institutional variances in expectations, as many native speakers embark on their careers in TESOL with no training whatsoever, especially in Asia. However, with the proliferation of certification bodies through the Internet, both employers and employees will have to check carefully that the pieces of paper they receive are of professional consequence.

Finally, it seems pertinent that, as Huberman suggests, “expertise” is not a foregone conclusion and teachers can just as easily follow a path to monotony or disillusionment. One of Woodward’s defining qualities for development is that it means you can stay interested in your job. The opportunities offered by emerging technologies for collaboration and reflection, enabling teachers to maintain interest throughout their careers, should not be underestimated.

TEACHER TRAINING

Pre-service training, particularly in the Tertiary, Secondary and Primary sectors (TESEP),

is the first step of the development process for the majority of teachers. These run the gamut from intensive certification courses for entry-level teachers (eg. CELTA) to undergraduate or postgraduate qualifications necessary to teach in state education. The goals of such programs differ greatly, and in turn are distinct from the aims of in-service programs. Formalized training for in-service teachers also takes many forms, from the institutionally designed workshop led by a senior teacher, to advanced qualification programmes such as the Cambridge DELTA. Somewhat dichotomous to the growth in interest in personal construct theories in teacher development is the fact that, in real terms, competency based teacher evaluation has become more popular in recent times (Richards, 1998, p. 5).

Johnstone (2006, p. 652-3) has produced a framework for the provision of Language Teacher Education with eleven key variables, including stage, sector, mode, type recipient and provider. Into a complex permutation of external, contextual factors, teacher trainers face further difficulties in the fragmentary nature of the content that is to be transmitted to trainees. English Language Teaching requires an interdisciplinary understanding, with elements from Education, Linguistics, Psychology, Anthropology and Second Language Acquisition (Johnstone, 2006, p. 659). With this in mind, selecting which competencies teachers need becomes even more challenging. Richards (1998) outlines six domains of focus for training, which draw on sources from Linguistics and Education; theories of teaching, teaching skills, communication skills and language proficiency, contextual knowledge, subject matter knowledge, and pedagogical reasoning skills and decision making. Although acquisition of some of these competencies (theories of teaching, for example) may be achieved through traditional knowledge-transmission instruction, it has been suggested that teacher beliefs and personal theories are the main force which drives classroom practice. If

that is the case, then trainers need to work on a deeper level to help teachers develop and change and straightforward lectures are likely to be insufficient. Woodward's "Loop Input" (1991), for example, is an interesting attempt to recreate the language learning experience in the language teaching learning experience. One important question is whether we need to build an entirely new paradigm for online teacher training, based on differences between the ways people interact and thus learn online. This is further complicated when we consider online training courses for online teachers. We will return to this idea later in the chapter, when we look at what trainers are doing in practice, in both the "real" and "virtual" worlds.

TEACHER DEVELOPMENT

The prescriptive, "top-down" (Mann, 2005) model of teacher development, in which teachers *are developed*, has become insufficient in recent years. Many researchers, teacher educators, and indeed classroom practitioners themselves, have turned to theories of lifelong learning, psychology and personal growth to look for ways in which teachers can develop themselves (Head and Taylor, 1997; Christison & Palmer, 2007). This development is directed by the teacher his or herself, and focuses on levels of expertise pieced together through experiential "honing of the teaching craft."

The English Language Teaching professional is quite likely to follow a circuitous course in his or her career. Changes in role, institution and even country tend to be fairly frequent for many in the field. This is a somewhat neglected area of study; "mainstream" education, in which most of the research is situated, generally structures developmental pathways more rigidly. Many TESEP teachers are involved in the management of their own development, either individually or through peer networks. They are also party to institutional

change (sometimes at a national level) and innovation. These processes take place against a background of standardization that enables the operation of large-scale training programmes. (Examples of this can be seen in Guskey, 2002; Woolfolk Hoy & Burke Spero, 2005; Schulz and Manzuk, 2005).

For many ESL/EFL teachers, especially those outside state education contexts, there are few structures in place for professional development. Teachers of English may need to be more capable of managing their own development than others. Franke et al. (1998, p. 67) refer to this as “Self-Sustaining Generative Change,” in which teachers “engage in practices which serve as a basis for their continued learning.” This works on a deeper level than merely noticing that classroom practice seems effective, but entails an understanding of why something has worked in order to generate further effective practice.

How these activities are being facilitated and transformed online will be addressed later in the chapter, along with some speculation regarding future possibilities. To foreground this discussion, we must first consider two of the central theories which dominate the field of teacher education and teacher learning.

SOCIAL CONSTRUCTIVISM

The work of Piaget and Vygotsky has been central to the social constructivist theory of learning and development. In simple terms, each of us

constructs a personal knowledge base through interaction with the environment around us. The tools we use to do this actively shape the knowledge as we reframe (Lavin & Claro, 2006, p. 10). Vygotsky stressed the role of mediation in learning, and hypothesized the Zone of Proximal Development; a psychological space in which ideas too challenging to be understood by the learner alone can be understood collaboratively (Vygotsky, 1978). Roberts (1998, p. 43) argues that the theory is especially relevant to the teaching profession as teachers “only have partial agency in their own development”; public requirements do not allow self-determination for teachers. In addition, the theory helps us to understand differences in personal beliefs and behaviours between teachers in that all teachers are a product of their prior experience, or their own social construction.

If technology is truly transforming learning, then theories of learning need to be transformed too. Siemens (2004) rejects social constructivism (along with behaviourism and cognitivism) as outdated, and proposes a new model of “connectivism.” Whereas constructivists believe that we each learn through our own experiences, Siemens argues that, with the sum of information growing at a frightening speed, we must store our knowledge in our neighbours. Learning is not about internal processes but rather the access to knowledge based on network communities. Certainly, the amount and speed of information we process now has increased dramatically since the original development of social constructivist theories. Vygotsky and social constructivism are

Table 2. Activities for teacher development (Richards & Farrell, 2005, p. 14)

Individual	One-To-One	Group-Based	Institutional
<ul style="list-style-type: none"> • self monitoring • journal writing • critical incidents • teaching portfolios • action research 	<ul style="list-style-type: none"> • peer coaching • peer observation • critical friendships • team teaching 	<ul style="list-style-type: none"> • case studies • action research • journal writing • teacher support groups 	<ul style="list-style-type: none"> • workshops • action research • teacher support groups

still commonly cited in research into Web 2.0 and learning theory (e.g. Dysthe, 2002); perhaps connectivism is not quite the radical departure that Siemens claims but it deserves consideration.

REFLECTION AND REFLECTIVE PRACTICE

If social constructivism states that we are a product of our interactions, then reflective practice theorizes the ways in which educators can most effectively and positively process those interactions to enhance development. The two theories are in many ways complimentary. Dewey (1938) was a pioneer in the field, advancing his idea of “forked road” situations, in which the practitioner solves a dilemma and incorporates the new theory into their personal schema (Roberts, 1998, p. 48). Schon (1983) built on Dewey’s work to formulate the twin hypotheses of “reflection-in-action” and “reflection-on-action.” While those working on specialized tasks often perform intuitively (knowing-in-action), stimulus can prompt thought (reflection-in-action). This operates on an unconscious or semi-conscious level, often in a split second for the experienced classroom practitioner. Reflection-on-action, however, is the more considered questioning of teaching beliefs and practices (Korthagen & Lagerwerf, 1998). The importance of “reflection on action” is especially relevant to this chapter in that it expects educators to critically examine their own practice in order to grow as a teacher.

To reflect both objectively and productively is not an easy task, and teachers often need training. An environment which encourages positive reflection is also significant. If teachers are to develop to the best of their abilities, the opportunity for supportive collaboration is also a necessity. The next section will look at the ways in which online teacher education utilises these theories in more detail.

THE INTERNET, WEB 2.0 AND CURRENT PRACTICE

Distance and Blended Learning in Teacher Training Online

About twenty percent of students in higher education in the USA take at least one class online (Abramson, 2007). It is the growth area in education, and even traditional face-to-face courses often incorporate some element of online interaction. This is known as blended learning — a form of learning which balances face-to-face contact between trainer and trainee with Internet-based input delivery and interaction (Elliott, 2007). In distance learning, on the other hand, content is delivered almost entirely via the Internet, and interaction takes place almost exclusively online (although some postgraduate courses, for example, have a short residential requirement). Distance learning is not new, with the first external courses being offered in the nineteenth century, and institutions such as the Open University in the UK operating since the early 1970s. Initially, materials were delivered, read and responded to through the public mail system. Later, video and audio cassettes, or television were also used to present content. This section will explore two main questions: whether teacher training programs are utilizing the full potential of emerging technologies and whether the particular needs of those learning to teach can be met through online interaction alone.

A representative example of current distance / blended teacher education is the Cert. TESOL course at St. Andrews University in Scotland. During the first four weeks, readings and tasks are conveyed through the Internet, and participants receive weekly feedback from their tutor. Trainees are also expected to take part in online, asynchronous discussions. The final five weeks of the course are full-time and face-to-face, and incorporate a teaching practicum (University of St. Andrews, 2006). It would be unfair to criticize such a course for failing to exploit the available

technology to its fullest potential. The basic rationale behind the set up is to save time (Trealor, 2006), and by having the trainees read and respond to content in advance of the residential portion of the course, the aim was achieved. Besides the limited asynchronous Computer Mediated Communication, there is nothing in this course that could not have been done fifty years ago through the post. In very practical terms, information delivery through the Internet is quicker and cheaper than by post; this was the key concern. The most important part of the course as a whole, however, was the teaching practice, and it remains so for the vast majority of trainee teachers, teacher trainers, and (importantly) employers looking at freshly minted certificates and considering their credibility.

Both trainers and trainees were reported to be very satisfied with the outcomes of the course, yet this is the kind of set up that Downes (2006) critiqued in his description of traditional transactional models adapted slightly for use with computers: "Content is organized according to this traditional model and delivered either completely online or in conjunction with more traditional seminars, to cohorts of students, led by an instructor, following a specified curriculum to be completed at a predetermined pace." Much of what Downes then goes on to describe, the new world of cyberspace, is not being harnessed by teacher trainers as yet. Learning may be being transformed, but teaching is changing at its own pace.

In Western universities, the Virtual Learning Environment (VLE) or Learning Management System (LMS) has become a core part of the delivery and management of information, at both undergraduate and postgraduate level. These networks allow registered users access to a variety of media, interaction between students and staff, and trainers to track trainee progress. The UK authorities have a strong commitment to such technologies, including Moodle and Blackboard. However, despite this commitment, reactions

on the ground have ranged from the passionate embrace to the disinterested shrug. Eayrs wrote about his experience at the University of Salford, with a "the core of power users" and a majority who were "initially reticent to adopt Blackboard at all" (2006, p. 19). Confidence and familiarity are very important if a large scale system such as this is to be a success, but all too often those who are excited by the possibilities will exploit the technology to its fullest potential while those who are intimidated merely post copies of class handouts. Part of the problem here is the "digital divide." Prensky (2001) raises a very important issue regarding the marked division between generations (he describes it as a "discontinuity"); with a cohort of students from the same age group and similar backgrounds, there is a clear case for pedagogical change. However, it is self-evident that peer study groups are rarely uniform. Mature and international students make up a large percentage of the student body in western tertiary education. In the United Kingdom, 65% of full-time taught postgraduates were from outside Britain in 2005/6 according to the UK Council for International Student Affairs, and Higher Education and Research Opportunities UK records that 52% of students enrolling on a first year undergraduate course were categorized as "mature" (over 23 years of age) in 2003/4 (Higher Education Research and Opportunities UK, n.d.). Teacher trainers are faced with a dilemma in catering for the broadest range of trainees when designing pedagogical technology. "Digital immigrants," for whom technology is inaccessible due to fear, lack of confidence, or limited resources need to be brought into the fold, if we are to use technology in mainstream teacher education. Prensky, not illogically, seems to assume that educators are likely to be less technoliterate than their students, but this is not necessarily the case. And if "digital natives," for whom technology is becoming "normalized" – that is, "used every day ... like a pen or a book" (Bax, 2003, pp. 23-24), are steering implementation of new systems,

there is a serious danger that significant numbers will be left behind and ultimately this will lead to failure.

Stanford (2006) offers us a glimpse of what can be achieved with Moodle, which is both open-source and free. His pilot scheme, for a CELTA programme at the City of Bristol College, incorporated text, video and audio, RSS feeds from relevant sources, searchable content, Wikis, blogs, forums and instant messaging. He points out how the format is based on social constructivist theories rather than a “methodologically regressive ... top-down approach” (2006, p. 26). In evaluation, a proportion of the trainees accessed the site daily and, perhaps more importantly from a teacher development perspective, continued to use the facility as a resource after completing the course.

Brandl (2006, p. 20) believes that Moodle’s particular strength is in its design, which is based on social constructivist principles. Trainees are encouraged to share ideas freely, either guided by a trainer or as a group. For teachers already in practice, this collaboration can be based practical issues as they arise in the trainees’ own contexts. This immediacy and relevancy is a great benefit, enabling trainees to assimilate new ideas and incorporate them into their “cognitive constructs.” As trainees test new ideas, reflect on them and share their thoughts and feelings online, they can develop both personally and professionally. It could be argued though that pre-service teachers require a knowledge base and the achievement of basic competencies before they feel equipped to experiment and reflect in the classroom. Moodle may help trainee teachers take responsibility for their own learning about teaching from the outset of their career, but it could be argued that pure distance learning is still a challenging model for training novice teachers. This position is borne out by the findings of Kupetz and Ziegenmeyer (2006) in their online pilot program, which showed that significant numbers of the trainees were unable to

make links between theory input and classroom video recordings. The incorporation of video into entry level online courses is now commonplace, thanks to modern applications, and on a purely practical basis it is cheaper, faster and more efficient than sending video or audio cassettes by mail. However, it appears that novice teachers may require training towards autonomy.

This conundrum is particularly apparent when we come to consider teaching practice — still a cornerstone of most worthwhile pre-service training courses. Postgraduate degrees, targeting mid-career teachers or those wishing to pursue more academic goals, tend to centre on research and theory. Online training can replicate or even enhance the learning process in these areas. Inexperienced trainees, however, perceive a need for close supervision and timely feedback. In addition, the observed demonstration of a certain level of teaching ability is an important evaluation tool. Internationally recognized awards such as the Cambridge ESOL qualifications require the trainee to observe and teach a number of “real” lessons.

One possible solution to this dilemma is what has been termed the “proxy tutor” (Elliott, 2007, p. 14). The Distance DELTA trainees are part of a distance learning course utilizing a typical VLE. The difference is the appointment of a local mentor, who will observe classes and give feedback face-to-face (Cambridge ESOL et al., 2006). International House are taking advantage of their global network by offering online development programmes administered in local centres (Cattlin, 2006). Once again, although this may provide an elegant and workable model for teachers with some experience, a blended or face-to-face learning program for novice teachers is still recommended, to provide a greater level of support and guidance during a crucial developmental stage.

COMPUTER-MEDIATED COMMUNICATION (CMC)

Any communication event that takes place via networked computers can be referred to as computer-mediated. CMC can either be synchronous (in “real time” — e.g. instant messaging, video conferencing), or asynchronous (email, Internet forums). As we have discussed, one of the central tenets for teacher learning is the facility for collaboration and communication. Trainee teachers need to communicate with their peers and with their tutor comfortably and freely. At this point in time, the question is not so much whether CMC is possible, as for many of us it is becoming “normalized.” We need to establish if and how the new styles of communication are different from what has gone before.

Teacher trainers need to be skilled facilitators, yet without the verbal and non-verbal cues available to participants in face-to-face communication, the tutor may need to develop new techniques. Despite improvements in technological capabilities for video and audio conferencing (via free applications such as Skype and Google talk, for example), ensuring that a whole cohort of trainees has access to equipment of sufficient power and capacity is still challenging. At the time of writing, most synchronous group discussion is still conducted via “chat” or similar facility.

In order to do this Nunan (1999) attempted to replicate spoken discourse markers with a set of protocols. The MA TESOL (based at Newport Asia-Pacific University) was fully online.

Japes (personal communication, August 7, 2006) encountered a similar situation administering an online Diploma course; he found that his initial attempts to facilitate synchronous discussion groups was an impossible task, eventually settling on five trainees at one time with arranged turn-taking cues. Nunan claims that “some of the transcripts (from synchronous discussions) could easily have been from a classroom” (Nunan, 1999, p. 58), yet it seems fair to say that the synchronous, textual CMC needs to be deftly directed, and often more teacher-centred than its face-to-face equivalent. This leads to a more teacher centred style than might be found in face-to-face interaction. Both Nunan and Japes stressed, however, that the community building aspect of the online seminar sessions were a very positive part of the overall experience, for both learners and tutors.

Despite the clear value of synchronous CMC, most online teacher training still takes place asynchronously, through discussion boards, forums, email and similar applications. Some practical issues include procrastination or non-participation from trainees, and the difference between the student’s expectations and the tutor’s workload regarding feedback response times. Most online teacher trainers report increased workloads in comparison to face-to-face courses. The “anywhere, anytime” benefits of the Internet can just as easily become a millstone; ask any harassed businessman with a Blackberry. However, in the main, online courses are gaining in popularity due to their flexibility, portability, and the lack

Table 3. (Nunan, 1999, p. 55)

?	I want to ask a question
+	I would like to add something on this point
A	I agree with this point
D	I disagree with this point
//	I’ve finished my turn
Go X	It’s your turn

of physical or chronological constraints holding back participants.

Beyond these obvious benefits, there is a growing body of research investigating deeper cognitive and pedagogical benefits of Computer Mediated Communication in teacher education. Garrison et al. (2001) built a “model of practical inquiry” expressing ways in which teacher trainees can use asynchronous discussion groups to address “problems” collectively. *Trigger* events begin discussion, leading to the *exploration* phase, in which learners reflect individually and explore ideas as a group. This takes learners to the *integration* stage, when solutions begin to emerge. Finally, the ideas are tested in the *resolution* phase (Garrison et al., 2001, p.11). This kind of collaboration promotes reflective practice in trainees, and with less time pressure than in the conventional classroom setting, learners are not only able to reflect more deeply, but actively encouraged to do so (Arnold & Ducate, 2006, p. 43).

When a training cohort is comprised of both native (NS) and non-native speakers (NNS) of English, CMC may hold several advantages over traditional classroom-based communication. Perceived weaknesses in language ability and cultural inhibitions sometimes combine to leave NNS teacher trainees feeling out of their depth in lively seminar groups. CMC allows participants time in a less intimidating atmosphere. Hirvela (2006, p. 239) observes how shy trainees in a programme he administered became much more confident online, and how a larger number of students were able to reflect and participate, building self-esteem and a sense of community. On the other hand, challenging as face-to-face seminars can be they are also a powerful learning experience for NNS who wish to test and improve their speaking skills in a live discourse setting (Carrier, 2003).

As an aside, Japes (2006) claims that the permanence of text compared to speech led to some initial reservations amongst trainees. In general, though, the fact that communication is not *direct* but *mediated* allows participants to be

more direct than they might otherwise be. This can be negative too; on anonymous Internet forums, it is generally understood that interaction can easily descend into aggressive personal attacks known as flaming. However, the literature reviewed in this study typically focused on the positive outcomes of CMC amongst members of a training group.

Boon’s (2007) research into instant messaging and cooperative development is an interesting example of how in-service teachers can utilize free software for professional development. Cooperative development was formulated by Edge (2002) as a reflective tool involving a “speaker” and an “understander.” By reframing the speakers’ utterances without advice, judgement or evaluation, the “understander” helps the speaker to become more self-aware, or find the solution to a particular problem. Boon reported success in the technique through instant messaging, with the main advantage being that teachers could take part across distance. It would be intriguing to know if the written yet instantaneous format had any effect on the reflective process.

Discussing the training of online language teachers and online trainer training feels like walking into a hall of mirrors, but it is clear that online teacher trainers do need to develop a different skill set. Of course, many “non-virtual” teacher trainers attain that status without formal preparation yet still succeed. However, trainees on accredited courses are likely to expect professionally recognized trainers. Online teacher / trainer accreditation is growing, with courses from well established providers such as the consultants-e and International House. This is certainly an area with great relevance to this chapter which requires further research.

APPLICATIONS FOR TEACHER DEVELOPMENT

Beyond formalized training programmes, the potential for self-directed and collaborative de-

velopment online is immense. Teachers who were previously professionally isolated are making new connections and collaborating across the Internet. New applications enable an unprecedented level of interaction between teachers working in contexts worldwide and the ability to create as well as share content is a vital tool in promoting self-directed learning. This section will look at some specific applications and the ways they are being used, with reference to social constructivist and reflective practice theories.

WIKIS

Wikis are Websites that are “collaboratively and incrementally updateable” (Lavin & Claro, 2006, p. 10), the most famous being Wikipedia (<http://www.wikipedia.org/>). The ability to constantly edit and readjust the content appears to be the social constructivist brain made digital. Lavin and Claro (2006) link key factors from constructivist theory to the wiki and conclude that it can become an effective tool for learning and development. It is an undeniably “learner” centred and learner relevant tool, and allows participants to consider issues from multiple perspectives by editing existing material from other contributors.

Wikigogy (<http://wikigogy.org/>) is an attempt to build a large-scale collaboration of knowledge in the field of language teaching, but many smaller, more focused projects are taking place worldwide. It would be an error to assume that participants must be working at a distance; the wiki provides a convenient tool for project management, whether participants share an office or are working on different continents. Google Docs (<http://docs.google.com/>) allows teachers to create and share spreadsheets, text documents or presentations and to store them online for portability and flexible access. Basecamp (<http://www.basecamp.com/>) and Goplan (<http://www.goplan.info/>) are two examples of how this technology has been adapted for practical use. In addition to shared

timetables and documents, projects can be synched to other applications such as email or RSS, and developers are encouraged to add new applications to the platform.

One potential use for teacher-researchers would be for action research projects. The wiki, and platforms incorporating it, can enable previously isolated teachers to share techniques and data, enabling researchers to meet virtually as well as face-to-face.

BLOGS

Journal writing has been popular in teacher education for some years, as a method for exercising or promoting reflection. As Russell and Bullock (1999) argued, “Keeping a written record of teaching is an exercise in metacognition” (p. 137). Training programmes also incorporate the practice to obtain feedback from trainees. Studying a group of MA TESL students in Hong Kong, Richards and Ho (1998) discovered that journal writing was beneficial in opening dialogue between trainee and tutor or peers, and also supplied the tutor with classroom data. However, without explicit training in how to keep a reflective journal, it appeared that students basically maintained their starting level of critical reflection throughout the course; if they were capable, they were that way from the from the outset but students with little capacity for critical reflection at the start of the course had not developed the skill by the end. Despite the inconclusive results, 71% of the participants claimed that the exercise had been worthwhile.

Even with training and guidance, some teachers will struggle to develop critical reflection through journaling alone. Richards and Farrell (2005, p. 75) outline the key factors in successful logging, stressing the importance of deciding the goals, audience, time frame and evaluation criteria in advance. With perseverance, a journal

can facilitate a variety of tasks for the developing teacher, as listed by Porter, et al. (1990, p. 228):

1. *React* to class discussions
2. *Describe* class discussions
3. *Ask* questions about readings/discussions
4. *Relate* readings/discussions to your own experiences
5. *React* to something that you read
6. *Describe* something that you read
7. *Argue* for or against something that you read
8. *Explore* pedagogical implications of readings/discussions
9. *Describe* new knowledge you have obtained
10. *Fit* new knowledge into what you already know
11. *Question* the applications, motivations, uses or significance of what you have learned
12. *React* to class demonstrations, observations, teaching/tutoring experiences, etc
13. *Make connections* between course content and previous experiences you have had as a teacher, tutor, language learner etc
14. *Argue* for/against a particular technique or procedure
15. *Describe* your progress or problems with the current assignment/exam
16. *React* to the tutors' evaluation of your last assignment/exam

While some teachers prefer to use a hardback journal and an ink pen for recording their stories, millions are now blogging on the Internet. It is not hard to find a teacher' blog which serves each of the purposes on Porter's list, but blogs can actually do a great deal more than the old fashioned journal.

The physical act of writing a journal in long-hand can be an irksome task, especially if it is obligatory. A major advantage of blogging is its versatility; that is, bloggers can embed video clips, pictures, sound files and links to other sites. Blog-

gers can also decide how much of their content they would like to share and with whom. Blogs can be set up as membership of a class group, with peer and trainee feedback encouraged, or entirely private. Commonly, blogs are open to anyone who might happen to discover them, and there are increasing numbers of teachers using blogs to "self-publish" by getting their ideas out into the world. Although podcasts are not technically blogs, they fill a similar space conceptually, as do social networking sites, and content sharing sites such as flickr and youtube.

The blog is a very good example of Web 2.0 offering something that would otherwise be impossible; the possibility to share anonymously with strangers (at least, in "real life"), and thus without agenda or fear. Blogging incorporates elements of reflective practice and social constructivism, but could also be said to fit Siemens' connectivist model.

VIRTUAL WORLDS AND GAMING

Blogs and wikis enable educators to work and collaborate in new and exciting ways, but they are still dealing with applications and platforms that share a visual and stylistic lineage with that which has gone before. MUVE's (3D Multi User Virtual Environments) like Second Life, on the other hand, do not at first glance look like a place for academic or professional development. Many millions have visited Second Life out of curiosity, and large numbers have stayed and created something independent and of potential value for educators. The site claims that approximately 900,000 residents logged in during January 2008 (http://secondlife.com/whatis/economy_stats.php). Corporations and educational institutions such as IBM and Harvard have a second life presence that lends further credibility. A typical example of the way in which teachers might use second life for their own development (rather than for language education) was the keynote

speech at the 2007 Wireless Ready International Symposium. The “real-time” address, in Nagoya, Japan, was also attended “virtually” by a number of interested parties from across the world who were able to interact through Voice over Internet Protocol (VoIP) and observe the same multimedia presentation. Conferences such as this, and the IATEFL 2007 conference, are enabling teachers who would never be able to travel to take part in activities on the other side of the world.

However, at this stage it appears that what Second Life can offer technically is slightly behind the imagination of the vanguard of educators championing it. Purely practical considerations such as processing power, bugs in the software and user compatibility mean that it is still a struggle to make such conferences work technically at the time of writing, but in the near future it is likely to become more and more commonplace.

The potential is what virtual worlds have to offer at this stage. It is certainly the case, demographically, that tomorrow’s trainee teachers will be digital natives, and teacher educators will need to engage them in ways they understand and are motivated by. However, as of May 2007 the largest age bracket in Second Life was in the 25–34 range, at 38.47% (Second Life, 2007), which suggests that patterns of technology use should not be generalized across demographic groups.

In addition to Second Life, online games, particularly role-playing games, have been cited as an area for future exploitation as an educational environment. Oblinger (2004) believes that games can be highly motivational for college age students, and that we need to look to the future as the digital generation reaches university age. She cites a number of existing projects that have used virtual technology for simulation and role-play, such as the University of Michigan’s virtual democracy, and an MBA strategy simulation at the University of Phoenix. Programmes typically allow learners to do things which they would not be able to do in real life, perhaps due to distance in time or space (visit historical or foreign sites)

or risk (medical procedures, military or financial simulations).

Beside these practical benefits, there are also pedagogical and learning advantages. Oblinger also lists some of the attributes of gaming which she links to sound learning theory, such as the activation of prior learning and the experiential and social aspects. Returning once more to the theme of constructivism, so prevalent in the analysis of Web 2.0 learning, Coffman and Klinger (2008) suggests that learners can create a Vygotskian zone of proximal development within a virtual world and collaborate to learn together, provided that the instructor is careful to establish realistic tasks to promote complex cognitive processing. Despite their clear enthusiasm, however, they do suggest that MUVE’s should not be the sole learning tool, but incorporated into a programme of personal communication and face to face collaboration. There is clear potential for teacher educators; indeed, there are already virtual language classrooms in Second Life and it would be a short stretch to enable trainees in one country to present model lessons for trainers in another. This might be one of the ways that distance teacher education can recreate the teaching practicum experience. Looking further ahead we face the possibility that language learners will study solely to communicate in virtual worlds, with teachers who have trained in Second Life.

CONCLUSION

At the outset of this chapter three key questions were highlighted:

1. Are online teacher trainers and trainees are fully utilising the potential of current technologies?
2. Is it possible to successfully deliver teacher training through Web 2.0 technologies, and if it isn’t now then might it be possible in the future?

3. Is the Internet transforming the way teachers learn to teach, or learn about teaching?

The answer to the first question is, so far, negative. Downes' (2006) snapshot of the reality and the potential in this area seems very accurate based on the literature surveyed for this chapter. Most higher education teacher training is grafting old transmission style training models on to VLE platforms; the transformation of both teaching and learning is minimal. Governments are unwieldy and take time to enact policy change, yet at the same time many of their decisions are taken with an eye on the ballot box and short term results. Many of the educators and policy makers in a position to make decisions that would transform the whole structure of learning to incorporate Web 2.0 technologies and the brand new styles of learning are not members of the "twitch speed" generation.

The second question cannot be answered so succinctly. It appears that certain elements of initial teacher training can be delivered very effectively with the aid of Web 2.0 tools. Indeed, multimedia platforms, social networking, MUVE's and so on all offer very exciting and motivating ways for new teachers to learn their craft. This is Web 2.0 as a tool, as a system that fits into existing paradigms. The notion of competency-based training, however, does not really sit comfortably with the new learning that Web 2.0 is a product of and a driving force behind. New teachers do need certain technical skills, but it is not yet clear whether they can be acquired using Web 2.0 in a deeper way.

Which brings us to our final question. There are those like Kelly (2005) who almost deify the Web, Seimens (2004) who believes we need a whole new learning theory, and Prensky (2001) who claims that the new generation are wired differently to the old. However, returning to those like Cuban (1986) and Jonscher (1999), the first writing as microcomputers began to join mainstream life, and the second as the Internet did the

same, puts these claims into perspective. Jonscher (1999, p. 248) makes two apposite points in this regard: "The first is to regard almost any prediction of the future power of the technology itself as understated. The second is to regard almost any prediction of what it will do to our everyday lives as overstated."

It is tempting to become excited by the rapid development of new technologies; changes in the way people receive their entertainment and news, the ways they work and make friends, seem self-apparent. However, it is not yet clear if these changes are surface alterations or indicative of more fundamental transformations. This is certainly an area which warrants further research.

Whether this proves to be the case or not, the possibilities for the future are extremely exciting for professional teachers who want to collaborate and develop. Ultimately, in considering the implementation of any new innovation, the question must be asked: is this better than what we have already? Teacher development is much better situated to take advantage of new technologies, as individuals and like-minded groups move quickly to set up projects or collaborations in their fields of interest. Loosely affiliated groups can be set up and dismantled easily and inexpensively thanks to the Internet, and for this reason alone the future looks bright.

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KEY TERMS

Metacognition: This term is used in cognitive theory to describe the awareness of one's own thinking or cognitive processes in order to improve self-development.

Novice / Expert: A teachers experience and confidence leads to expertise. Novice teachers may be skilful, but experience enables teachers to know "what to do." Expertise is neither a permanent state nor a foregone conclusion.

Reflection: The act of critical consideration on experience, in order to grow.

Social Constructivism: A learning theory. Each of us is shaped by our experiences and interactions. Each new experience or interaction is taken into our schemata and shapes our perspectives and behaviour.

Teacher Development: Self-initiated or directed activities which enable the teacher to learn more about teaching and / or themselves.

Teacher Training: A top-down process in which teachers are equipped to teach. Based on the evaluation of competencies.

Virtual Learning Environment: A platform which allows educators to deliver material, interact with learners and track progress.