WHAT DOES IT TAKE TO BE ACTIVE? TEACHER PARTICIPATION IN ONLINE COMMUNITIES

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ABSTRACT

Web-based communities of practice are seen as a critical component in the development of a knowledge society. This is particularly so in Education: the vision of e-learning, empowering learners, supporting creative and innovative teaching, is dependent on teachers being able to access professional forums in which they can construct praxis appropriate to new ways of teaching and learning. This paper examines a number of such online communities of practice and examines the factors that contribute to teacher participation. The extent to which knowledge is constructed in these forums is also examined.

KEYWORDS

Teachers Continuous Professional Development Communities of Practice Construction of Knowledge Participation Web-based communities

1. INTRODUCTION

The Department for Education and Skills in England and Wales (DfES) has invested resources since 1997 in ICT training for teachers and school librarians, the construction of a broadband network to connect all schools to the internet, and the development of the National Grid for Learning (NGfL) both as a portal for curriculum materials and a forum for curriculum development.

The current DfES consultation document, 'Towards a Unified e-Learning Strategy' (DfES/0424/2003) sees e-learning as '*contributing to practitioner knowledge in all its forms*' (p.5). Innovation in teaching and learning will be developed by '*online communities of practice*' (p.49). Indeed, the National College for School Leadership has 28,000 school leaders registered for the Talking Heads online community.

Towards definitions of an online community of practice

Initial definitions of a learning community emerged in the USA from 1990 onwards (Gabelnick, MacGregor, Matthews, & Smith, 1990; Smith, 1991, 1993). They were seen as communities consisting of a large number of students and a small number of teachers, with the community supporting and developing the students' learning. In this context the learning community was a part of the wider community of a college or

university in which the learning was situated. (Dana Press, 1990) In this context creativity and learning become synonymous: for those engaged in teaching, the experience of being a learner once more is a valuable corrective to what have often become 'professional reflexes'. The opportunity for creative collaboration within a learning space was seen in sharp contrast to the working environment of curriculum delivery, administration and meetings. This view of a learning community, as a social structure, "purposefully restructures the curriculum to link together courses or course work so that students find greater coherence in what they are learning as well as increased intellectual interaction with faculty and fellow students" (Gabelnick 1990 p. 5). It usually involves some combination of collaborative and active learning, team teaching, and interdisciplinary themes or approaches. Essentially, a learning community is "any one of a variety of curricular structures that link together existing courses--or restructure the curricular material entirely--so that students have opportunities for deeper understanding and integration of the material they are learning, and more interaction with one another and their teachers as fellow participants in the learning enterprise" (Gabelnick, 1990 p.19).

This provides students and faculty with an opportunity to experience courses clustered with others connected by time, space, and intellectual interests. Learning communities provide students with an opportunity to meet others who share common classes, which in turn "allows students to feel comfortable in those classes and enables them to build a network with peers that then functions as both an academic and social support system by providing study partners, sources of class notes, and help with homework, and class assignments" (Tinto et al, 1993, p. 18). Clustering students to form learning communities was seen as allowing faculty to teach students 'college-survival and text processing skills' and to enable accelerated progress in courses. Supplementary materials would enable students to work collaboratively to facilitate their progress through the course. In other words, the learning community was envisaged as something that supported the institution in its aims. Learning communities are seen as especially appropriate for lower division general education courses and for freshman. In essence, they "fundamentally restructure the curriculum and the time and space of students" (Smith 1993, pp. 32-33).

The expectations in the early 1990's, then, were essentially administrative and pedagogical: part of the academy, rather than a community of equals. Nevertheless, it was clear that the existence of the community predicated a range of learning outcomes that were dependent on the community.

Broadening expectations

At the same time as learning communities were identified as transformational in the relationships between learners, online communities were emerging that themselves facilitated learning. Network communities are a form of technology- mediated environment that foster a sense of community among users. One of the design dimensions of network communities is developing a sense of persistent, shared space - an environment that frames the presence of multiple actors and provides mutual awareness. The shared space of a network community offers the potential for verbal and non-verbal communication at all times, but the space does not exist only when explicit communication is taking place. There is a "there" there, even when participants are quiet or absent.

In 1993, Rheingold identified the opportunities for the development of on-line communities, which he saw as social aggregations emerging from the Net. They were dependent on enough people to carry on a discussion that was public, and the length of the conversations and the depths of feeling enabled a web of virtual personal relationships to be established in Cyberspace.

Technology and transformations

Heppell (1998) saw the opportunities for learning communities and preserving diversity on the Net. "The ability to contribute is not only important in building effective communities, it is also the only protection for small cultures; without this two way bandwidth, powerful authoring tools and the resultant opportunity to originate material these small cultures (and Europe is rich in their diversity) will be engulfed in the same way that they have been by the economies of scale of television or cinema. Culturally, dissemination technology is imposing, communication technology is empowering."

Online communities, then, were communities because of the technology. Their existence was both dependent on and a result of the technology, with its use embedding itself in the interactions of their members and their praxis (Preston, 1999). The more the community members participated, the more the virtual community embodied itself: and the embodiment of the community was the listserv or website which was its 'home'.

Heppell's concept of technology as empowering, however, is more than the traditional concept of technology as a tool. The affordances generated by the actual tools of computers, keyboards, monitors and a

telecomm system are the base on which the superstructure of the virtual community and its virtual tools are constructed (cf. Wertsch, 1998). These generate a set of affordances, which develop, with each of the social interactions that take place within the community. As the interactions increase, the knowledge embedded within the community becomes available to all of its members. Each iteration becomes more powerful than its predecessor.

Stages in establishing a community of practice

Current models for e-learning and the construction of knowledge through online communities are predicated on stages that move from access and motivation, through information exchange and the construction of knowledge, to the development of links with other communities (the five stage model - Salmon, 2000; 2002). Preece (2000) similarly identifies five components of online community activities.

It would appear, therefore, that teachers would find these stages or components an integral part of community construction, and that the opportunity to develop online communities to build professional praxis could contribute to what the DfES identifies as critical to the knowledge society: '*the achievement of their potential for all learners; and an education workforce empowered to change*' (p.10).

2. COMMUNITY?

Learning and the online community

Learning to operate successfully within an online community involves stages that are remarkably similar to the stages of cognitive development. The first stage is dependent upon an understanding of email, listservs, websites and the ways in which the user can interact with these. Some users experience a long period of frustration before they are able to participate. These may be compared with the Piagetian sensorimotor/ preoperational stages (1953; 1972), or Bruner's enactive phase of learning (1974).

The second stage requires the participant to learn the norms, the routines and etiquette, and the management systems of the community. In many ways these mirror the concrete operational or iconic phases of learning theories.

When the user is able to operate independently, mirroring Piaget's stage of formal operations, or Bruner's symbolic phase, the interactions within the community become transparent. Not only that, the competences can be transferred to other online communities.

The learning curve for the individual, then, is supported by the cognition distributed within the community. This distribution may be within the structure of the community: help files; automated messaging; checks supported by the software on which the community is based. Cognition is also distributed among exchanges contained within the archive to which members have access. The greatest store of cognition, however, is distributed among the members of the community, to which the individual has access (cf. Wertsch, 1991).

It is to be expected that teachers would be able to map their own pedagogical skills, concepts and expectations into a online community of practice and build the skills required of twenty-first century educators.

Work with a range of online communities, however, suggests that a number of factors specific to teachers within England are likely to inhibit the early move towards communities of practice as the norm, and that the five-stage model identified by both Preece and Salmon may not necessarily be that most appropriate to teachers and their communities.

Active learners, Passive learners

A common observation is that one third of online community members are active, one third read postings and only occasionally contribute, and the final third are inactive. A term commonly mis-applied to those not termed 'active' is that of 'lurker'. It is possible for individuals to simply use an online community to off-load cognitive responsibilities: to throw in a question and then retrieve the answer when others have worked their way through it. The question about lurkers relates to this: if an individual is active, then shared cognitive labour takes place (Resnick, 1991). The question then arises as to whether the one third of members who are readers, or the one third who are not really engaged see themselves as not being part of the shared process. The participants in the working out of a problem are obviously engaged in shared cognitive labour (Salomon, 1993). The issue is how other members of the group perceive themselves.

Whilst those who are active participants are likely to benefit from what Salomon terms 'cognitive residues' – advances in their own competencies – those who have off-loaded responsibility (or who are simply passive observers) have the opportunity of following the discourse and develop their own higher-level cognition (cf Vygotsky, 1962).

It would be expected, therefore, that new members of a community are more likely to find themselves in the position of being a passive observer, or someone who off-loaded responsibility to the more long-established members. Where knowledge artefacts are made available to the whole of a community, newcomers assume that knowledge is either 'out there', or located among 'experts' (cf McShane, 1991). Gronn (2000) observes that mind and mindfulness are not simply restricted to the interior mental life of individuals, but are part of socially distributed cognition through collaborative activities and social relations.

Salomon's observation about the role of individuals in distributed cognition within a network has particular resonance here. The suggestion that those members of a community who read postings, but who rarely become engaged in active exchanges, have more opportunities to develop higher level cognition would appear to be substantiated by postings towards the end of the debate.

Traditionally, the mastering of cultural tools was mediated by an older generation (teachers) to the younger (students). There is no direct correlation between this process and the computer as cultural tool. Learning how and why to use a computer is a continuous process: there is no fixed point of mastery that can be transmitted from teacher to pupil (Cuthell, 1999b; 1999c; 2000). The understanding that learning is a continuous process, and that the computer is not only a cultural tool but a tool for learning, should therefore effect a shift in the praxis of teachers.

It is, perhaps, this last factor that provides the key to our understanding of the ways in which cognition can be distributed in an online learning community. Using the environment stimulates further learning, and this in turn shapes the way in which the environment is used. The debates about lurking provided the key for this: that active learning is about participation, and engagement with the online learning environment counts as participation. The act of signing up to an online community and reading the postings provides access to the cognition distributed within that organisation.

3. OF PRACTICE?

Those who are active within a community, in that they contribute to postings, initiate debate and synthesise the submissions of others, are increasing the sum of the cognition distributed within the artefact/environment. This artefact/environment, consisting of hardware, software and what Lovink (1995) refers to as 'wetware', exists on a server, on people's hard drives as an archive but, most importantly, within the collective consciousness of the people – the 'wetware'. The cognition may be centrally stored by hardware, but it is distributed between the users' hardware and the users' consciousness.

In the 'real world' there is constant interplay between artefacts, users and the cognition that is distributed through society and its members. In an open society this dynamic shapes the ways in which we work and think.

Interactions within five very different types of communities of practice may provide some indicators as to those factors that determine their effectiveness: MirandaNet; the GTC Discussion Forum; the GTC e-facilitator forums; History Teaching and school professional development forums.

MirandaNet

MirandaNet (2002) was established in 1992 as "an international Fellowship of educators, … who have been using Information and Communications Technology (ICT) to change their teaching and learning practice and to develop innovative models for continuing professional development." (Preston, 2000) The mission statement was developed by its on line community: "MirandaNet strives to enrich the lifelong learning of professionals involved in education. Using advanced technologies the Fellowship spans social, vocational, cultural and political divides to create lifelong learning solutions for the education market place." What MirandaNet does is to provide an innovative and inclusive forum for the agents of change. This is achieved through peer mentoring and action research strategies (Cuthell, 2001). Underpinning the research and evaluation is on-going discussion. This supports good practice and the sharing of enabling strategies.

The central research interest of MirandaNet is in the use of action research methodology as a means of empowering teachers using ICT in the classroom. Dissemination and publication are central to the Fellowship process. In addition to organising conferences MirandaNet publishes on its website (www.mirandanet.ac.uk). Mirandalink is its closed conference system.

A community discussion on 'lurking' produced a range of responses from members, with much discussion focusing on the role 'lurkers' play in defining a community. Simply 'knowing that they are there', was thought to play a large part in the sense of community. The identity of any community - physical or virtual – encompassed a range of members, not all of whom could be expected to be active. The facility of many communities to see a list of members was important in 'getting to know' a community (socialization, in Salmon's model).

Further, many communities contain a number of background conversations, where people communicate directly, rather than through the public forum. Even though they appear to be 'lurking' they are, in fact, 'active'. People who are members of online communities of practice are often members of several, with varying degrees of activity. The transfer of ideas, information, hot topics, requests for help and so on between communities is often undertaken through private, rather than public, online exchanges.

The concept of information transfer from one community to another, facilitated by individuals who may be active in one community whilst lurking in others, provides an illustration of the concept of off-loading cognitive responsibilities in order to benefit from higher-level cognition. At the same time, it introduces the possibilities of shared cognitive activities which, although facilitated through Mirandalink, take place away from the main MirandaNet arena. It is likely that these activities will be the ones which are likely to yield 'cognitive residues'.

The range of interests shared by members of the MirandaNet community is such that, as a community of practice, it contains sufficient diversity of voices to prevent the forums being dominated by a few. The MirandaLink forum is democratic, requires relatively light moderation and is self-regulatory. It runs though I listserv and is distributed via email. This is, perhaps, the central difference between this community and the others.

The General Teaching Council

When the General Teaching Council for England was established an online presence was seen as an integral part of its services to members: policies could be published and updates, news communicated and online discussion forums would enable members to contribute to debates on GTC policy and educational issues. The discussions would be supported by e-facilitators, and archives would be available as discussions closed. From the GTC's inception, then the concept of an online community of practice was central to its operation.

Issues surrounding the use of GTC teacher registration data to verify online participant details meant that individuals could register pseudonymously. This, combined with resentment amongst some teachers at the government imposition of the GTC on teachers, resulted in a number of debates being hijacked by individuals who had a vested interest in the Council being less than successful. Strategies were developed in other online forums by individuals who acted as trolls, who disrupted debate and in general provided disincentives for other members to participate in debates or, even, visit the site. Some debates were successful: 'Research of the Month' always managed to attract sufficient contributors to ameliorate the efforts of those who would otherwise have dominated the discourse. On other forums, however, the role of the e-facilitator was reduced to that of firefighting, like a teacher attempting to control a willfully ill-disciplined class.

The critical factor was that many of the teachers who successfully contributed to the debates only did so after school hours: in many case, quite late in the evening. The asynchronous nature of these posting meant that there was often little sense of dialogue, but rather a series of position statements.

The GTC e-facilitators

In an effort to support the voice of the ordinary teacher in these debates the GTC invested in the recruitment and training of a cohort of e-facilitators. The training was developed by MirandaNet in conjunction with the Institute of Education, University of London, and led to a post-graduate diploma for those completing the course. An Action Research project into online learning or communities formed part of this.

After the first five months of the project an analysis was carried out of the use of the online forums by those teachers undergoing training as e-facilitators. Table 1 indicates the number of posts to the closed e-facilitator forums. Thirty-three e-facilitators formed the cohort.

Table 1. Number of posts to the e-facilitator forums

0	1 - 9	10 - 19	20 – 29	30+
5	5	3	12	8

Thirty percent of those training to be e-facilitators made fewer than ten contributions to the online forums. In these the expectation would be that they would at least have reached level three – Information Exchange - and four – Knowledge Construction – of Salmon's Five Stage Model. The anomaly is even more marked when we examine interactions in the public GTC Discussion Forums. Table 2 indicates the spread: whilst following the course for e-facilitators, only eleven members of the group contributed to the open GTC discussion forums, and of those only five participants contributed on six or more occasions. Clearly, then, the nature of participation must include more than a count of the number of times an individual posts to a forum. The 3:3:3 ratio does not apply to this cohort.

Table 2. Number of posts to public forums

0	1	2	3	6+
22	1	3	2	5

There would appear to be a number of factors that either inhibit, or limit, participation in the GTC Online Community by e-facilitators. The first is that of access. Most teachers do not have their own computer, with online access, on their desk during work. Those lucky enough to have a computer will be using it for curriculum work. Participation will therefore be restricted by having to share computers with other colleagues, or using a computer from home – usually at the end of the day, after schoolwork has been completed.

A significant factor that limited contributions to the general GTC forums was that they were dominated by a small group of disruptive and aggressive people (teachers?) who allowed no space for views other than their own. Newcomers were often driven away. The perception of many of the e-facilitators was that they had no wish to become embroiled with anti-social discourse. Debate in the forums was often at the level of personal opinion backed by anecdotal experience, with little sense of achievement when the forum closed.

The software used for the forums often led users to expect that there would be new messages when, in fact, message threads had moved to the right, leaving postings tagged as 'New' when, in fact, they were simply the final post in that thread. This created the expectation that there would be new contributions to a forum: these were often not met.

History Teachers Forum

The History Teachers forum is a moderated online forum with almost 700 members. Any member can establish a new discussion forum or a new thread within an existing forum. Most postings, however, are made between eight and ten in the evening, and the member profile would suggest that the majority of those active in the forums are in the 22 – 30 age group. Although the site has almost 700 members registered, fewer than 50 make regular contributions to forums, with a handful of members initiating new forums. In a number of cases the initial post to a forum is designed to be provocative and draw a response from others. This troll-like activity often has to be moderated both on- and off-list. Given the commonality of interest – most of the members are History teachers in secondary schools – one would expect that these forums would become a significant community of practice. This expectation has yet to be met.

An in-school community

The final group constitutes a much smaller community with a much narrower focus of practice. Its members form the Teaching and Learning group in an 11 – 16 comprehensive school in the North East of England. The group meets regularly, holds staff development events for the whole staff and support one another in their curriculum development work. An online community of practice seemed to be a natural extension of the work of the group: asynchronous discussions and contributions would support their work, and a body of expertise and material could build online to become an engine of distributed cognition for all

teachers in the school. The teachers therefore decided to build an online discussion space: the Teachers Talking Online project.

This project was predicated on the assumption that staff who were engaged in collaborative work to develop teaching and learning across the curriculum would extend their work to include an online community of practice. This built on a simple initiative that saw staff working on a Word document on the school network and which built into a collaborative document that consolidated ideas and techniques to be incorporated into teaching. A series of problems with the school network brought this to a premature end. The allocation of laptops to those staff without a machine at home was seen as a way of resolving those issues and moving towards an online community of practice. It was assumed that teachers would seize the opportunity to take charge of their own learning and work autonomously. All of the laptops provided to staff was equipped with a modem. It was further assumed that school ICT support, together with expertise across the school, could advise on the choice and installation of a suitable ISP using dial-up facilities.

What happened was that instrumental factors precluded an easy take-up of online communities on the part of teachers. There were, however, other factors. An online community presupposes an acceptance of the notion that knowledge is constructed, both socially and communally. Many teachers, however, conceive as knowledge as being 'out there'; something that has to be sought, or transmitted. In the context of an online community the assumption is that the community is something that contains distributed cognition, rather than a creative space in which all participate.

ICT access during working hours

Access to ICT during the working day is a problem for all teachers. School resources are usually fully utilised: staff facilities often under-resourced. When teachers use school facilities outside teaching hours the use is usually tied to administrative tasks and the preparation of teaching resources. The use of online communities, the engagement in dialogue and the integration of these into individual professional development are activities that take place after working hours at home – if at all. Few teachers have their own school email address: most use web-based email systems at school. Furthermore, the imposition of area-wide security systems by network administrators inhibits a wide range of uses and restricts the integration of web-based computer use in both classroom learning environments and professional practice: the 'permissible technology practice in schools' (Tashner et al., 2004) becomes restrictive.

Observations

None of the barriers identified in this school survey are insuperable. Individually they would be irritants: cumulatively they are often enough to prevent the take-up of the elements of elearning that are critical to it becoming embedded in individual praxis and institutional policy. The use of web-based communities of practice; regular access to DfES, QCA and NGfL resources; the constant updating that is a feature of other professionals' lives; regular participation in the General Teaching Council forums and use of the Professional Development Framework: all of these are predicated on the use of ICT and online services as an integral part of professional practice. Institution-based online communities remain problematic: the physical environment of the school obscures the need for a virtual space for dialogue and collaboration. It is almost as if daily face-to-face contact with colleagues removes any perceived need for online contact. Furthermore, such barriers as are encountered with ICT become reasons for most teachers not engaging with a new environment.

4. CONCLUSION

In many ways the integration of online communities of practice within the working praxis of teachers is based on the assumption that, because teachers all work in the same occupational area they share similar interests. Since an online community is dependent on access and motivation, builds on socialization, generates real worth through information exchange and knowledge construction and becomes a repository of distributed cognition when it reaches its final stage there is rarely a time when any of the teacher communities can be said to have stabilized. The very nature of communities of practice, their fluidity and flux means that they can manifest all the stages seen in the models of Preece and Salmon. Furthermore, the disruptive individuals who have been observed in a number of the forums preclude the online socialization that is an important factor of communities.

The infrastructure of schools significantly limits online access: most of those who contribute to online communities do so from home, in the evening, or at weekends. There are obvious gender implications in this,

and it is perhaps significant that those who were classed as 'trolls' by moderators were male, posting in the late evening.

The most successful educational communities of practice of those examined, however, are contained within MirandaNet. There are a number of factors that contribute to this. The first is that its members, although predominantly UK-based, include a number of international colleagues. Its members are drawn from education, teacher education, research, the media and industry. The second is that, because it is based on a listserv, items appear in people's email in-boxes: they don't have to log in, enter passwords and scroll through old messages before they find relevant contributions. The third is that MirandaNet is supported by regular face-to-face socialization.

The final and perhaps most significant point is that identified by Stuckey (2004) – that successful communities are led. It can't be assumed that a Community of Practice can happen spontaneously: it must be established, nourished, facilitated and led, all of which involves a considerable amount of work. Leading and managing an online community requires time; participating in an online community requires time. Given all of the demands made of educators participation in online communities should not be seen as another imposition, another task to be completed at the end of an overstretched day. Communities of Practice should provide the reflective space that has for so long been missing from the lives of teachers.

Communities of Practice for teachers are in their early stages in the United Kingdom, and their use and uptake is fragmented: indeed, the range of forum topics on some sites is a patchwork, with insufficient contributors to make a significant impact on information exchange and knowledge construction. In these early days the danger is that dogmatic or hostile voices will claim the territory as their own; the more hesitant will be reluctant to contribute to debate, and the silent audience will find nothing to claim their interest.

Only the understanding that online communities of practice form a commonwealth, rather than areas of vested interest, will help to embed them in teacher praxis and build a new pedagogy for this century.

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