Can ICT build a solid bridge to a more "engaged" and collaborative practice in doctoral study? Paradoxes, constraints and opportunities

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Abstract

This is a study of online support for doctorate research students through an action research approach at Warwick Institute of Education (WIE). Themes include research students' use of ICT; their attitudes to online support and their experience of studying a doctorate in general. This study uses mixed methods including surveys, focus groups, interviews and an exploration of wider literature. This is work in progress and offers a valuable insight into the process of studying for a doctorate, highlighting opportunities and constraints in the use of ICT and possible paradoxes in students' attitudes to their own development. It highlights some critical issues for support of research students, in particular the role of research supervisors. It offers a view of innovation as an iterative process.

Keywords

Doctorate study, collaborative learning, apprenticeship, e-learning, e-resources provision

Introduction

This paper focuses on a Teaching Quality funded project, begun in June 2006, to develop the use of ICT to support doctorate study, in particular to address concerns that there was insufficient sharing of resources and general communication between doctoral students, and also between supervisors and doctoral students. In addition, there was felt to be a more specific problem in that part-time students, at least those at a distance from Warwick, had difficulties in physically accessing research methods courses. The project looked, further, at whether ICT developments could sustain a shift to a more "engaged" and collaborative practice.

Project methodology

This was an exploratory study, begun by gaining an understanding of the problem through knowing doctoral students and how they go about their work better. An advantage of the exploratory approach was that it was flexible and adaptable to change, while seeking to avoid an absence of direction (Saunders, Lewis & Thornhill, 2003). The methodology drew on action research and the project started with cycles of reconnaissance, design and implementation; and evaluation. These cycles are explained below. First, however, we would like to address some issues about this methodology and the rationale of this selection.

The term "action research" is used as "an umbrella term for a host of activities intended to foster change on the group, organizational, and even societal levels" (Dickens & Watkins, 1999:127). Additionally, action research is seen as an approach that has emerged from a broad range of fields (Brydon-Miller et al., 2003). For some, action research refers to a family of approaches to enquiry rather than an approach to research (Reason & Bradbury, 2001). It is argued, however, that the number and diversity of cases in which action research has been applied has meant that "the term has lost some of its original weight." (Reason & Bradbury, 2001:xxiv).

Action research can be generally recognised and does not belong exclusively to one tradition. Action

research has distinctive traits. First, there is a continuous questioning of "how we go about generating knowledge that is both valid and vital to the well-being of individuals, communities, and for the promotion of larger-scale democratic social change" (Brydon-Miller et al., 2003:11). Secondly, there is an element of problem-solving as researchers make discoveries and ensure these are applied in order to solve practical problems. Thirdly, it is interventional and some authors argue that its contribution is in the area of research on interventions. In addition, it has an iterative nature as the process goes through several iterations of problem identification and problem solving before the problem is identified and addressed (Dickens & Watkins, 1999).

In addition, it is likely to find distinctive elements such as "problem definition, investigations, feedback, and design activities" which do not come in an organised, but rather untidy manner as such elements "may all be occurring at approximately the same time" (Clark, 1972:94). Another view is that action research "takes its cues - its questions, puzzles, and problems - from the perceptions of practitioners within particular, local practice contexts. It bounds episodes of research according to the boundaries of the local context. It builds descriptions and theories within the practice context itself, and tests them there through intervention experiments- that is, through experiments that bear the double burden of testing hypothesis and effecting some (putatively) desirable change in the situation" (Argyris & Schön, 1991:86).

Action research works in cycles, rather than phases, so that it does not fall into following a blueprint in a prescriptive way. This cyclical nature of action research recognizes the need for action plans to be flexible and responsive to the environment (Dickens & Watkins, 1999). In this way there are some advantages such as adaptability and thus capability to change direction, which - according to Kemmis & McTaggart - are possible due to the overlapping of action and reflection which allows "changes in plans for action as people learn(ed) from their own experience" (1988:8).

The action research process has been conceived as "a cycling back and forth between ever deepening surveillance of the problem situation (within the persons, the organization, the system) and a series of research-informed action experiments" (Dickens & Watkins, 1999:128). It might be challenging to decide when it is the "right" or "best" time to stop the whole process. Clark argues that such iterative process is likely to have complications of synchronization, for example when the intervention includes a technological innovation, as the concept of the end product has to be continually re-examined in the light of new information (1972). Such patterns of work are usual for action researchers as they use any information to guide new behaviours (Dickens & Watkins, 1999).

A disadvantage, Lewin amongst others, identified was that without proper theoretical help the process might follow the costly, inefficient, and limited method of "trial and error" (Lewin 1951). Such an approach might encourage a simplistic view reducing action research approach to finding a problem or problems to address and solve. When action research is only considered in this way it has been criticised as weak (Dickens & Watkins, 1999) and in the literature, there are examples of more descriptive, less critical and more problem-orientated approaches. However, the idea of action research is more comprehensive than this and considers the nature of problems - and opportunities - in depth.

The use of technological developments in educational settings constitutes a new field for the application of action research and one undertaken in this study for four reasons. Firstly, as we are research the use of new tools there is not a strong body of past research to work from. Secondly, there appears an almost natural affinity between the kind of iterative approach undertaken in Web design and the cyclical nature of action research. Thirdly, action research suits the orientation of the research team and our preferred way of working. Finally, the project is about introducing change within a department and this is best undertaken in a more iterative, 'bottom up' approach which explores carefully the nature of stakeholders' opinions and concerns. Within our approach we are aware that we have attempted to focus on pragmatic issues and have looked to unveil opportunities rather than 'problems'.

Now we have proceeded through continuing cycles of reconnaissance, design and implementation; and evaluation; from which we report developments which took place from June 2006 through to June 2007. We find it very useful to use these cycles to organise, carry out and report our theoretical and empirical work. The way we report these "cycles" may give the impression that we follow "phases" in an organised and linear way. The real process, however, has been messier and chaotic, for example, there have been "cycles" within cycles throughout.

Reconnaissance

Firstly, we looked at the range of ICT tools such as websites, online forums, web-logs, pod casts, video clips at the University of Warwick, together with the help provided to departments and individuals to develop support materials for courses. Interestingly, Warwick has approached technological developments is an unusual way in that it has created, and continuously supports, its own tools, for example its own in house blogs, forums, and web authoring tools. This is instead of buying a Virtual Learning Environment (VLE) from a provider. This has strengths in terms of the level of just in time support offered and in the depth of understanding of Warwick staff. A disadvantage lies for the user in some difficulties in the integration of tools.

Secondly, we conducted focus groups amongst lecturers and doctoral students. We also carried out a survey and conducted interviews within doctoral students. This was based on two themes: doctoral students' experiences of study and use of ICT. We found:

- Experiences are wide-ranging but there was a sense that students were conducting research for intellectual and career development. Students valued supervision and research training. Difficulties were cited, for example, a sense of isolation, uneven experiences of supervision and language difficulties. Sometimes these were linked to quite pragmatic but important considerations such as pressure on study rooms and informal areas to meet.
- Interaction with the supervisor and independent study were central to the experience of students. Research training, seminars and conferences were important. Students valued peer support, but some highlighted that it was possible to do a PhD through independent study. There were conflicting ideas about collaboration as doctoral students regarded collaboration very highly and recognised it both as useful to their doctorate work and as a desirable value. However, although they were aware of these opportunities many did not take advantage of them..
- There was widespread use of ICT to access material but much less use of ICT to communicate with peers. Email use was centred on exchanges with the supervisor. Doctoral students used ICT purposefully but not as so called 'digital natives'. They did not own the language of technology or see it as central to their lives.

These findings were put into a wider context within a literature review, only some of which is reported here for reasons of space. Doctoral students have traditionally been seen to undertake an apprenticeship in research training (Finlay, 2007). Historically, a doctorate degree has been a way into teaching in a university but this has not been an exclusive reason to pursue doctorate studies (Phillips & Pugh, 2005; Harland & Plangger, 2004) and motivation for study is becoming more diverse.

Doctoral education has undergone major changes. The European tradition has emphasised the contribution to knowledge rather than personal development and research training. However, this view has been challenged and the role of the Economic and Social Research Council (ESRC) has been significant. It argues that doctoral students ought to be "trained researchers" having a wider knowledge of research methods (Deem & Brehony, 2000; Chiang, 2003).

There have been investigations into ways of supporting doctoral students (Kiley & Mullins, 2005). However, any attempt to rethink the doctoral experience must consider the changing landscape of education. If we continue to see the doctorate process as an isolated enterprise, doctoral students will miss opportunities for learning through participation in communities of practice (Lave & Wenger, 1991; Wenger, 1998).

The mixing of education and technology is still viewed with scepticism; technology may be seen by some as boring and antisocial (Stahl, Koshmann & Suthers, 2006), even if technology has the opportunity of allowing connectivity (Sloman, 2001; Jones & Steeples 2003). Combining online support and collaborative ways to enhance learning offers new possibilities of connecting learners and linking them with society (Bruckman, 2006). However, research in networked learning has not been well-connected to the needs of practitioners (Jones & Steeples 2003) and students. These are challenging areas that need further exploration.

Implementation

This reconnaissance led us to see specific opportunities and constraints. ICT will not impact on some of the difficulties within the programme (for example, more study rooms, more social events). However ICT can address other difficulties such as access through material made available on the Web. This might address the dimensions of connectivity (referring to the global reach of ICT); flexibility, for example any time - any place access to material; motivation, for example in the use of multimedia; and provide extended opportunities for learning.

Pragmatic choices were made. A re-vamped website looked likely to be well-received; setting up discussion groups, without a great deal of structured support, would not. Thus we went down the route of developing a website and including online material at www.go.warwick.ac.uk/wiedoc; and providing a quick and easy means of accessing information and support forums.

Some of the advantages of the site are that it address practical difficulties, such as access for colleagues who are unable to attend support sessions and orientation for those, often with English as an additional language, who find taught sessions difficult to follow. Doctoral students and staff members (lecturers and technical support) were involved in the production of online resources. The development of the website went through a series of stages. There is no place to explain fully the developments that have been introduced but briefly, these are some examples:

- Research training material was put online to help part-time, overseas and distance students in terms of accessibility (distance, time and language).
- Research seminars resources were developed. Interviews were conducted with guest speakers by members of staff at Warwick.
- Upgrade support (mock upgrade, interviews and report samples) was developed and put on the web to help doctoral students prepare.
- The graduate association website was developed, hosting information to support two initiatives: seminars and working papers. The working papers was a booklet produced by research students to show case their work. Commentaries were provided on each of the papers.
- Study skills sections were developed with a specific focus on reading and writing within Education.

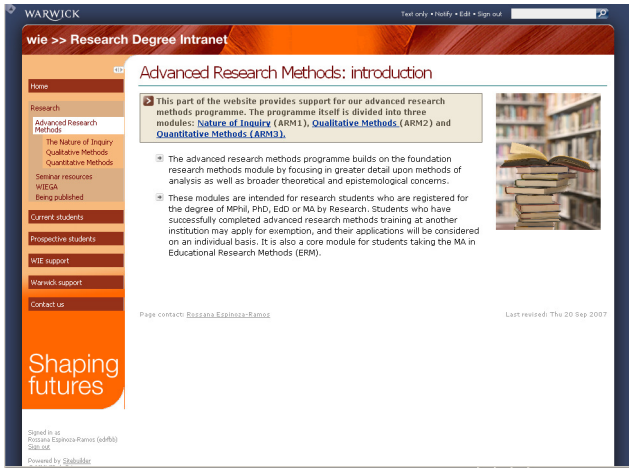

Fig.1 Introductory page of the Advanced Research Methods section at the Research Degree Intranet

Fig.2 Multimedia resource in the Research Seminars section at the Research Degree Intranet Website

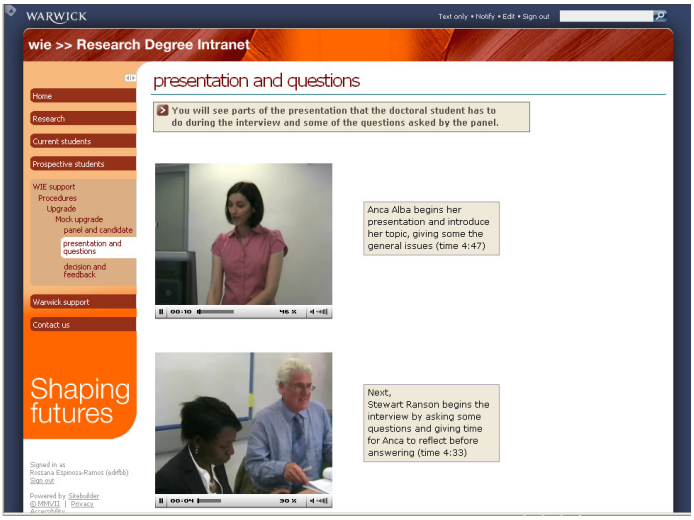

Fig.3 Multimedia resource in the Upgrade procedure section at the Research Degree Intranet Website

Evaluation

Two evaluation sessions took place amongst doctoral students and academic supervisors during the summers of 2006 and 2007. Overall, the development of the website was well-received, and attracted attention and raised expectations. On the technical side, there was a learning curve in becoming confident with using different Warwick technologies and having a network of central university ICT support to rely on was quite useful. Two themes came up from the evaluation: networking and communication, and sharing information and good practice.

Networking and communication

Supervisors highlighted that the website has potential to facilitate networking; however doctoral students felt that their profiles on the website needed to be improved (updated and even completed). Interestingly, a doctoral student suggested using e-Portfolios and a supervisor highlighted the need for them to be involved in this.

Sharing information and good practice

Supervisors suggested having research papers as models for good practice. Doctoral students would like

access to resources on how to gather; analyse and report data. Both groups highlighted sharing information about the conferences that doctoral students attend. Doctoral students suggested sharing information on projects that are taking place at the Institute and books published by academic staff.

Conclusions

On one level the study has met success criteria. Students and lecturers have fed back positively and the resources meet a need. However a key concern during the study has been to address a prevailing culture that often leads to habits of independent study, rather than community. Here we are only too aware that nearly all students made a positive association with interaction and discussion but many do not take advantage of opportunities offered. Culture -"the way things are done here"- affects how people behave and it is not realistic to impose change dramatically and directly without first understanding the problem thoroughly. An incremental approach to change is the more appropriate course to take.

Implementing online support through a "best fit" to doctoral students' needs and patterns of work is more important than following a "top down" imposition of all the ICT developments going on at Warwick. Understanding how doctoral students go about their work at WIE and providing online support that doctoral students will find useful constitutes a good platform from which to start. As an approach it is deliberately low on connectivity, but high on information, as this fits students' patterns of study better.

This approach is not going to provide meaningful communities of practice and may miss opportunities to support doctorate study through a collaborative model. However, this must be seen in the light of other developments such as the Graduate Association (www.go.warwick.ac.uk/wiega) in which students do meet and interact with each other face-to-face and electronically. A change in "the way things are done here" cannot be ICT-led; it is not realistic to promote and use ICT for the sake of it; worse still to push for change without fully understanding the problem. Cultural changes are more likely come from 'bottom-up' interventions.

Continuing the cycle

This has been a report on a first round of action research. The opportunities are still there for developing communication tools such as blogs and forums to enhance collaboration and exchange of ideas, together with E-portfolios to facilitate presentation, communication and networking. The next round of developments will focus on networking and sharing knowledge. We plan to introduce e-Portfolios as a departmental initiative, and hope this will help foster networking amongst doctoral students and engagement towards the use of ICT. Another initiative is about developing online resources based on research training sessions. Other initiatives include revamping forums.

This experience confirms that "the farther you aim, the more an initial error matters" (Wenger, 1998, p.9). This study has been fruitful in terms of knowing what the constraints and opportunities are. In practical terms it has been very important to produce something that doctoral students see as useful and fits with their patterns of study, rather than something ambitious that 'does not work' and is not used.. As Wenger notes "we must become reflective with regard to our own discourses of learning and to their effects on the ways we design for learning" (1998, p.9). There is a lot of work to be done and there are still many opportunities to develop this work further.

This study will remain an iterative process. Doctoral students and lecturers will participate through consultation and testing. ICT developments provide many opportunities to support interaction and connectivity among doctoral students. A new doctorate researcher has access to a great deal of information. However, there is more to knowing a subject or topic than storing information in our heads or in our computer. What matters is making sense of the information, our relationship with our new knowledge and how we use it. In this sense ICT developments can support learning, not by replacing traditional ways of doing things, but by engaging doctoral students in conversations with a wider audience, reflecting about the doctorate process and recording the know-how of their research.

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