Chapter 5 – Taking political action: What I did

Introduction

I have described how my thinking in relation to my teaching and other aspects of my practice was leading me away from traditional approaches, which were often authoritarian and controlling in nature, toward practices that recognise that people are able to think for themselves and are able to offer explanations for their lives, provided constraints are removed. I have described the development of my thinking that leads me away from a fragmentary approach to understanding my world to one that actively seeks holistic approaches. Such approaches avoid technicist views and seek creative and innovative ways of doing things. These approaches will be apparent in the chapter as I describe and explain the work I have undertaken as part of my programme of research. In doing this I will draw on a range of projects undertaken within school and NCVA.

This chapter has five main sections. These sections focus on projects that are the vehicles that drive the action of my research. At the same time the projects show the development of my thinking. In the first section I give an account of my first faltering attempts to provide a learner-focussed approach to teaching ICT through the development of self-instructional notes. Second, I address a significant leap in my thinking around young people taking control of their learning through the North/South schools link. This work gave rise to the Setanta Project which forms a superstructure around the projects that followed, in that many of the key ideas underlying my living theory of practice were developed through the Setanta Project and its offshoots. In the fourth section I move my focus from my school-work to that undertaken in NCVA. NCVA provides a rather different environment to school but involves similar approaches based on recognising that people are valuable and have a contribution to make to their own and others' wellbeing. Introducing the NCVA work at this point is important because it is central to my ideas around holism. Although it is a different organisation, carrying out different work, it forms part of my web of connection that ties me into communities of practice that influence my work and my ideas wherever I am and whatever I am doing. In the fifth section I return to ongoing work in school. This final project which involves supporting a student-teacher from the nearby university forms another part of the web of connection. This offers a particularly complex web in that it involves supporting her in working with students who

are involved in what many would consider an alternative programme. The complexity of that web involves the interactions between student-teacher and teacher, between university and school, between pre-service training and in-service learning, between mainstream traditional school and innovative programmes.

The use of the five projects supports the idea of a 'web of connection' between various activities. While describing these projects I will draw on the ideas presented in the previous chapter in relation to reconceptualising ICT as political action. The focus of these projects is on moving away from didactic classroom practice and deterministic ideas of ICT, whether of the technicist or sceptical variety, and drawing on social constructionists' views of learning and ICT (Feenberg 1999; 2000; 2002; 2003; 2004; 2005) to move toward developing ICT as a social practice (Brown and Duguid 2000; 2002; Bromley 1998), by developing the ideas of communicative action (Habermas 1979; 1984) and political action (Arendt 1958) within ICT.

I will show how ICT can support a model of learning that departs from the traditional didactic model (Dewey 1997) toward a model that is collaborative in nature and life-affirming for those involved. Inherent in this reconceptualisation is movement from the dualism of teacher/student to a unifying view of collaborative learners. The research needs to be seen not at the level of individual participants but at the level of their joint collective interactions (Brown and Duguid 2002: 432). The model draws on Arendt's (1958) concept of plurality, recognising that while participants in the classroom or workplace may have different roles or responsibilities, each is a learner. My experience is that within the complex learning environment that is life, all learners are not learning the same things at the same time. One learner who is normatively referred to as 'the student' may be learning ICT skills while the learner who is normatively known as 'the teacher' may be learning how to support other learners in their learning of ICT skills. In the strange world that is the collaborative classroom it may be that the learner, known as the student, may be helping the learner, known as the teacher, how to learn ICT skills!

In addressing the use of ICT I will address issues of inequity in relation to ICT. These will be addressed not in a propositional way, but in a living process of attempting to provide access to ICT in an equitable way. In this analysis I will draw on the criteria suggested by Jones *et al*. (1995) for the equitable use of ICT and their indicators for engaged learning (Jones *et al.* 1994).

My thesis is informed by substantial research projects in two locations over a long time period. However, the research projects are not studied in isolation but in the context of a range of other projects and activities which form a web of connection. This broader examination is important in order to understand the 'patterns that connect' the various aspects of this work and indeed life in general (Bateson 2000). In school I have studied how I work with students and teachers and show how the use of ICT impacts on the quality of our educational experience. The Setanta Project, which I detail below, involved some eighteen teachers and close to one hundred students. The project proceeded by supporting the teachers and students in developing ICT skills. Teachers were supported to devise methodologies that allow them to use ICT in teaching their subjects. I gathered data from the participants through the form of interviews, conversations, journals and reports, from which I have generated evidence that they have benefited from using ICT to support their learning. A terminal report for the National Centre for Technology in Education provides evidence of the work of the group (O'Neill 2000b; 2002a). The evidence of the achievements of the project is of two main kinds. Some of the evidence is directly statistically measurable; for example, the reports show that the number of students using ICT has increased, the number of teachers using ICT has increased, and the range of subjects that ICT are used in has broadened. However there is also a qualitative change in the educational experience. Evidence of this has been gathered from the interviews, reports and comments of teachers and students. One group of students used an online programme which was devised to assist with personal reflection. In their reflections the students relate their achievements. In some cases these are directly attributed by the students to the use of ICT. However, in other cases the students used ICT to assist them in reflecting on other learning experiences, for example outdoor-pursuits activities or their mini-company trade fair. My thesis takes data from these students' reports and turns it into evidence of the achievements of the projects.

In NCVA I show how I initially aimed to improve the computerised systems for the return of examinations results, but this initiative rapidly developed into a self-study group of administrators who were keen to investigate how they might improve what they were doing. This became an in-house action research group. The group of ten people was a cross-section of the organisational personnel, including the chief executive, development officers and administrative staff. The group used an action research approach in attempting

to understand better the nature of the work that we do and in understanding how to retain our learning within the organisation. The achievements of the group were presented to all-staff training days on two occasions and to an action research practitioners' conference. Two members of the group submitted their action research projects in part fulfilment of the requirements of their masters' degrees (Cullen 1999; Deane 2000). Evidence of the quality of the learning of the participants will be drawn from these reports.

Throughout this work the emergent nature of my learning will become apparent. The development of my ideas about learning and my increasing realisation of the then authoritarianism and dominating nature of my thinking and activities will be explored as I explain how I strove to develop educative relationships and support activities that would enable participants to take part in political action through the medium of ICT.

Project 1: First faltering steps – Self-instructional notes and self-directed learning

The first project that I undertook in relation to the teaching of ICT has been described previously (O'Neill 1996). Giving an account of this work again might appear repetitive but examining the development of my thinking and my practice is a key element of this thesis. The following section shows my early dissatisfaction with my practice and my attempts to bring it into line with my values. I experienced disillusionment with trying to teach basic ICT skills to my students on a whole class basis. I set about trying to find a way of enabling greater autonomy for my students. The first stage in that work was developing a set of course materials for teaching basic skills. In my report of the work I wrote the following:

> At this point the content of computer courses taught included computer familiarisation, keyboard skills, programming, word processing, spreadsheets, databases, graphics, desktop publishing and CAD. An ongoing difficulty with teaching this material is the lack of a methodology, an approach to teaching the material. Frequently, in the typical computer class, there is a wide range of ability and an even wider range of experience. Some students have computers at home and are very capable, whereas some have never touched a computer and have no interest. In addition to this all students have their own individual difficulties. I found my classes were not progressing. As one student rushed ahead, another lagged behind. Trying to keep them together was impossible. The more computer literate students were getting bored and misbehaving. The others were getting frustrated. I was getting over

stretched and annoyed. I decided that a text book was the answer. But no available textbook was specific enough to our computer system, and this approach did not work either. There were still too many questions and loose ends. I decided it was time to produce my own materials.

(O'Neill 1996: 8)

Within this quotation the most telling sentence is 'Trying to keep them together was impossible.' At that point I was treating the students as a class rather than a group of individuals. In terms of pedagogy my approach was on 'herding a group' rather than meeting the needs of individuals. In terms of ICT my focus was rather technicist, focusing on ICT skills rather than education for freedom. Since writing my initial comments on this work I have encountered a metaphor gaining currency in management literature – the idea of 'herding cats' (Bennis 1998; Crocke *et al*. 1999; Dawson and Jones n.d.; George and Krajewski 2001; Lott 2006; Stuart 2006). The idea is rooted in an advertising video produced by software services company, EDS, for the 2000 Super Bowl. The advertisement suggested that trying to organize companies is like herding cats – one moment they are sitting still, next they have darted away; if you chase them one way, they run the other. While presented attractively and amusingly by EDS the underlying theme is of uncertainty and unpredictability within organisations. However, it seems to me that implementing the 'right' technologies and streamlining business processes are essential ingredients to produce organisational change; but it is not organisations that change, it is people. While the technical components of change are well understood, mechanised and standardised it is the human element that is critical to success and is least understood (Dawson and Jones n.d). Interestingly, the advertisement suggests that EDS believe that they have the solutions. EDS's advertisement reflects the dominant themes in management literature which are that management is about organising people.

My classroom experience suggests that in practical terms attempts at herding cats are doomed to failure. From my practice I have come to see the futility of trying to organise people, and find that when people are removed from controlling influences they are capable of organising themselves. My insight is that, contrary to conventional wisdom, people resist change only when it makes them feel out of control. They will resist if change is foisted on them without their consent (Dawson and Jones n.d). But learning is a process of change. It is likely that the factors that influence sustainable change are some of the factors underlying learning. Dealing effectively with learning or change involves valuing the people involved,

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and, while many organisations claim that their most important assets are their people, few behave as if this were true. I am conscious of times in school when the principal told the staff as a group that we were the 'best staff in Ireland' but I would have thought that the 'best staff' might have had ideas that would be listened to, approaches that would be adopted and insights that were valuable. This did not appear to be the case. In hindsight I see this in terms of Arnstein's ladder of participation as the lowest rung on the ladder (Arnstein 1969: 216). Arnstein attempted to clarify issues around citizen participation in planning matters by developing an eight rung ladder of participation. From the first to the eighth, the levels represent ascending levels of participation. She further subdivides the eight rungs into three sets. The lowest two rungs represent non-participation; the middle rungs represent tokenism and the top three, varying levels of citizen power. The first rung represents manipulation. I see the 'best staff in Ireland' comment as manipulation. I realise that at times I have indulged in such manipulation with students when I have said 'Sure, you are great lads' and not meant a word of it!
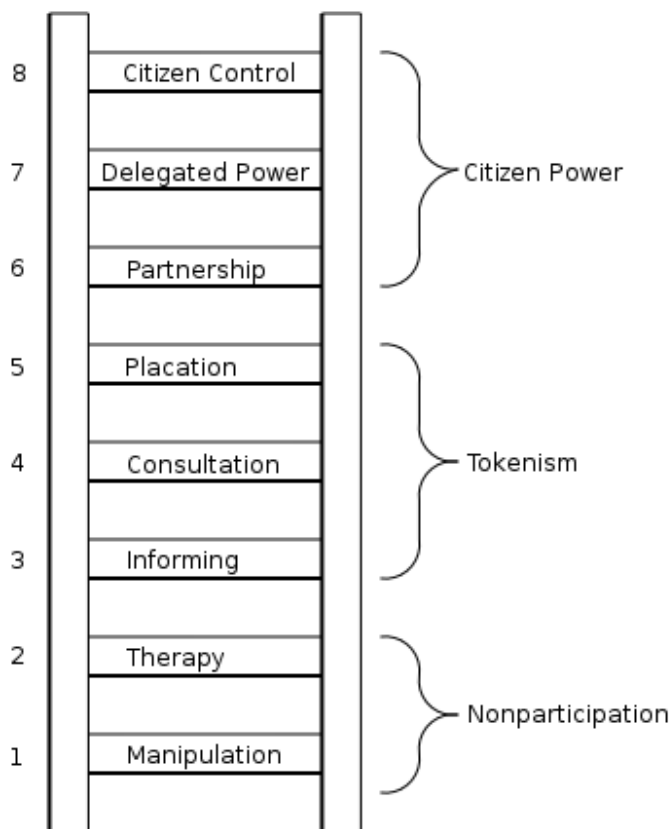

Fig 5.1 – Eight rungs on the ladder of citizen participation (Arnstein 1969: 220)

Despite not having reached these insights into my practice and into dominant practices at the time, the quotation above shows my early frustration with a teacher-centric approach and my first attempts to move toward a more learner-centred approach. While the self-instructional guides were prescriptive I see this as my first tentative steps toward moving away from an authoritarian approach in my classroom and allowing my students to exercise some autonomy over their learning. In my reflections on this work I indicated that I was having difficulties with the conflict between my values and my practice. I would like to take this thinking a step further at this time and by that means show how my learning has developed.

My frustration with trying to teach ICT didactically led me to produce my self-instructional notes. On the face of it you could say that the self-instructional notes are restrictive in that they lead students though pre-determined exercises where the 'successful' outcome for all students will be the same. But it is possible also to see them as enabling. If I were to use the same whole-class approach in teaching the computer class as I tended to follow in my science classes, I might require that all students do the same thing at the same time so we can all proceed together as a group. Using the self-instructional guides promoted a different approach because they allowed different students to proceed at different rates. This is an attempt at person-centred work. It is still prescriptive but it is allowing the learner to move along at his own pace. I am facilitating the students' learning by providing resources and materials that they can use as they wish. This is moving away from a classroom situation where one half is bored and irritated because the class is moving too slowly for them and the other half of the class is frustrated because things are moving too quickly for them. Providing the self-instructional guides is helping me to overcome inequity by allowing all students to work at their own pace and leaves the teacher free to support whichever students needs support. In this way students are not being treated equally but equitably. I appreciate that allowing students to work at their own pace can allow the advantaged to become more advantaged. But this practice allows the teacher to support most those who need most support and this promotes equity rather than equality (Secada 1989: 68-88). In Arendtian terms I think that the self-instructional guides could be called 'work'. Their development and use indicates that I have begun to develop my practice by moving away from labour but I have not managed to support activity that might be termed action.

Throughout the development of resource materials there is a process of moving me, as teacher, from looking after mundane activities, what Arendt (1958) might call labour, and focussing instead on more life-affirming processes which could be considered action. The development of a body of materials is part of an ongoing process of refining my ability to resource students' learning and to remove the constraints that are obstacles to students' learning. This is a step toward the web of enablement where wide ranging influences act in concert to remove obstacles to learning.

In Chapter 3 I referred to strategies within the Junior Technology class where a student became equipment manager and fellow students organised their tools, rather than having their teacher controlling access to them. This freed me up from activities like counting out screwdrivers and pliers and allowed me to focus on supporting students. At the same time students received the added responsibility of looking after equipment. It allowed them to exercise ownership. At that point it is their technology room; it is their pliers, their screwdrivers. In the ICT class and the Technology class, although the content of the class is prescriptive, students are exercising greater autonomy than previously. The activities represent my first attempts to support students' autonomy. The activities could be seen in Arnstein's terms as 'delegated power' which is close to the top of the ladder of participation (Arnstein 1969). As I engaged in changing the role of students and my role as teacher I was reconceptualising teaching within a co-operative model. At the same time I was reconceptualising my identity not as an authoritarian figure but as a co-worker with my students and colleagues. Interestingly the shift from authoritarianism did not reduce my authority within the classroom but in many respects enhanced it. In the case of the equipment manager, instead of coming to me for punishments, he was coming to me for advice and with ideas on how better to organise equipment.

Project 2: North/South schools link

The account of producing self-instructional materials is an example of my process of seeking opportunities to provide an experience of education that was life-affirming for students and teachers on an ongoing basis within my work. As I continued to develop this work an opportunity arose to take this idea further. The opportunity opened up the possibility of using video-conferencing as a means of supporting learning within the school and with others far beyond the confines of the school. Before accounting for the

North/South schools link I need to divert your attention to a brief history lesson which provided the context to this work!

On 31 August 1994 the Provisional IRA announced 'a complete cessation of military operations'. The statement was greeted by widespread celebrations in nationalist areas of Northern Ireland. But unionists and the UK government pointed out that there was no explicit promise that the truce was permanent. The ceasefire lasted 17 months. But with no developments on the political front on 9 February 1996 the IRA planted a huge bomb in London's Docklands. It killed two and injured more than 100. Following the election of the new Labour government under Tony Blair, a new ceasefire came into place on 20 July, 1997. Following this in April 1998 the Good Friday agreement was made. It was supported by Ulster Unionists, Sinn Fein, the SDLP and the governments of the United Kingdom and the Republic of Ireland. Just four months later in August a bomb was detonated in the town of Omagh, County Tyrone by dissident republicans. Twenty-eight people were killed, a twenty-ninth person died subsequently. The bombing in Omagh indicated that the Northern Ireland Peace Process was fragile and required a series of confidence measures to bolster support (Dixon 2002: 725-727). It could be argued that the North/South Schools Link was one small element in a plan to increase communications across Ireland's traditional divisions and create a sense of normal life carrying on.

Into this context in November 1998 the Department of the Taoiseach (Irish Prime Minister's Office) invited my school, St Aidan's, to host a video conference involving Prime Minister Tony Blair, Taoiseach Bertie Ahern and students from three other schools, Loreto Grammar School, Omagh; Limavady Grammar School, Co Derry and Carrigaline Community School, Co Cork. The schools represent the various traditions within Irish education: unionist, nationalist, catholic, protestant, north, south, girls and boys. The focus of the occasion was on the prime ministers and students in all four schools engaging in a questions and answers session using video-conferencing technology.

Shortly before this in January 1998 St Aidan's teachers and students undertook a European Union sponsored 'Socrates-Comenius' project fostering dialogue and communications between young people across Europe. I initiated and supported the use of ICT within this project. As a result teachers and students from three countries, Slovakia, Spain and Ireland, were enabled to engage in dialogic processes through the medium of ICT. The project was entitled 'Our Lives: A comparison of School Life and Leisure Activities: The Ideal

European School and Lifestyle' (St Aidan's Comenius Report 1999). The North/South Schools Link came into an environment which was already focussing on students taking control of their lives though dialogue and communication through the medium of ICT (www.ictaspoliticalaction.com/comenius).

In the weeks prior to the video conference I engaged students in a project where they composed questions they might ask various 'important people' if they were to meet them. Included among the people they might meet were Mr Blair and Mr Ahern. Over a period of time, along with their teachers, they asked and answered a wide range of questions. The questions were polished and honed in a dialogical process where students composed questions and discussed them with each other, sometimes in small groups and sometimes as a class. The process produced questions which reflected the interests of the students: some were political, not surprisingly in the heady days of the peace process and only months after the Omagh bombings; other questions reflected the day to day – 'are you well informed on computers or do you leave that to other people?'

Fig 5.2 – Students and teachers engaging in a dialogical process of preparing questions to ask the two prime ministers.

The method I devised for arriving at questions to put to the two prime ministers was through the medium of group discussion and dialogue. The development of the questions from students' handwritten questions to those finally asked is documented as part of the accompanying multimedia thesis which is available at http://www.ictaspoliticalaction.com /pdf/northsouth/AhernBlair_questions.pdf. Devising questions and practising them with others were aspects of small group discussion and dialogue which are fundamental to

education. It is, of course, possible to learn without discussion, but the need to support deep learning through peer-group discussion is important. In our increasingly market-driven model of education it is small group work and particularly discussion that is being squeezed out of the education process (Coventry 1998). This is precisely the type of work required to develop good citizens. Civic education and multicultural education can be supported and extended by developing schools' capacity to deepen social and political democracy (Parker 2006: 11). The emphasis here is, after Allen (2004), not on civic 'oneness' but 'wholeness', with an emphasis on talking, listening and political trust among strangers. In the video conference, young people who had been participating in a democratic process with their peers in several countries took part in a democratic process on the world stage with world leaders. Young people were demonstrating their citizenship, not in terms of legal status, but in terms of participation in a self-determining political community (Parker 2006: 11).

As part of the participatory process, a few days before the video-conference, I told the students that the two Prime Ministers would be involved and they were given the opportunity to take part or not as they wished. Some chose to take part and others not. Although a demonstration of their political participation, the work of the students was carried out through the medium of ICT. In the course of the project the students had been supported to develop considerable ICT skills but not ICT skills alone; they improved their communications skills and interpersonal skills as they engaged with students whom they had been divided from by centuries of tradition.

Questions posed by the young people to the leaders ranged from difficult questions about the political situation: 'Mr Ahern, how can Ulster Unionists trust you when you make a statement hoping for a United Ireland in your lifetime?' to crucial football questions about the transfer of Duncan Ferguson to the Prime Minister's favourite club Newcastle United. Media coverage of the event suggested that 'dialogue and communication were literally and metaphorically urged by the two leaders to change the old ways of the past and encourage understanding and toleration for different points of view' (Danaher 1998).

If this event had been a single day event it would have passed as an historic event but unlikely to have an impact on the day-to-day work of the school. However the democratic underpinning of the North/South schools link was to provide the direction for a range of school projects over the following years. These included the Dissolving Boundaries

project, European Schools Project, Comenius, and Setanta project, which significantly influenced mainstream school programmes through the Transition Year Programme and Leaving Certificate Applied programme.

The event could be dismissed easily as political theatre supporting an attempt by political elites to communicate appropriate messages to various audiences in an attempt to bring them into an accommodation (Dixon 2002). Whatever the motives of the high profile players the students on the ground had a political agenda and that agenda was one of engagement with leaders in our society.

Project 3: The Setanta Project

So far I have discussed the development of self instructional guides and the North South Schools Link I have addressed above. I now address the third major project, the Setanta Project. The Setanta Project forms a backbone to other projects within this research as it was the source of many of the ideas, activities and the infrastructure that underlie the projects. The Setanta Project forms an important part of the development of my understanding about learning and teaching, and provides the structure for a web of enablement that supports learning and teaching. In this section I provide the background and account for the activities of the Setanta Project and how it influenced the development of my thinking and how my thinking influenced the development of the project in a reciprocal way. This is a good example of theory and practice working indivisibly.

In November 1997 the Department of Education and Science (DES) launched the programme 'Schools IT2000'. This was as a result of an undertaking by the Government of Ireland in its 'Action Plan for the New Millennium' to achieve computer literacy throughout the school system. Schools IT 2000 was intended to provide 'a comprehensive and innovative programme to achieve this objective' (Government of Ireland 1997). As announced, the programme 'Schools IT2000' was composed of three major strands. These were the Teaching Skills Initiative (TSI), Technology Integration Initiative (TTI) and the Schools Integration Project (SIP).

Following the government initiative in cooperation with colleagues I undertook to form a Policy Group in our school to respond to the government initiative. The initial response was to formulate an IT plan for the school (O'Neill 1998c). This plan formed the basis for St Aidan's ICT policy (O'Neill 1998d) and underpinned St Aidan's application to the

National Centre for Technology in Education (NCTE) for support for ICT initiatives. To the extent that I was a key player in the development of the policy this document shows a transitional stage in my thinking about ICT. The list of rationales for ICT given in this document was as follows:

> To meet the requirements of various subjects e.g. Business Studies, Technical Graphics.
>
> To integrate information technology into the various subjects.
>
> To prepare students for the world of work.
>
> To enable the use of ICT as a teaching tool.
>
> To support extra-curricular projects like the Comenius Project and other project-work like the First Year Science Project.
>
> (O'Neill 1998d: 1)

Some of these rationales are traditional including the vocational rationale (Hawkridge 1990) – 'to prepare students for the world of work' and 'to meet the requirements of various subjects'. However there were indications of the development of different ideas around ICT. 'To enable the use of ICT as a teaching tool' held out the possibility of uses of ICT that were more liberating.

While identifying the uses that ICT might be put to, the development of my own and of colleagues' thinking was more obvious:

> To what use will ICT be put?
>
> - To teach computer skills.
>
> - To assist teachers in the preparation of class materials.
>
> - As a demonstration aid in class.
>
> - To encourage independent learning on the part of students.
>
> - To enable students to research.
>
> - To enable students to present their work better.
>
> - As a communications tool in the form of email and Internet.
>
> (O'Neill 1998d: 1)

Within this list the fundamental idea of teaching ICT skills was at the top; despite this, the list included other uses which focused more on enabling students and teachers to develop independent learning and autonomy.

The thinking which can be seen in the ICT policy document led me to make a proposal to the NCTE that would involve a significant commitment to ICT and its transformational potential in St Aidan's. The project which became known as the Setanta Project was developed as St Aidan's response to the government initiative 'Schools IT2000' (O'Neill 1998a).

The proposal to NCTE was for 'The Development of a School Subject-Based Intranet'. In terms of support from NCTE the proposal sought the provision of two data projectors, a digital video camera and a laptop computer. These were seen as requisites to support the development of content on the Intranet. But the scale of the proposal to NCTE shows that my vision of the project at this point was limited. However, at this point there was an implicit understanding of the importance of collaborative work. This can be seen in the steps taken to seek the support of the School of Computer Applications at Dublin City University (DCU) and from the Education Trust in DCU (O'Neill *et al.* 1998). Two faculty members of the School of Computer Applications, Margaret Farren and Ray Walshe, joined the team immediately and others followed. Research elsewhere indicates that a key characteristic of innovation is its tendency to cluster (Brown and Duguid 2002: 430). It is argued that innovation clusters because innovative people tend to cluster, staying close to those who share their vision, understand their insights and advance their ideas. The innovative collaboration between school and university was part of a process of supporting innovation by surrounding oneself by innovative people. Within the Setanta project support for innovative practice was found locally, with innovative colleagues in school, in the university and in NCTE.

The Setanta Project was developed with the belief that the provision of hardware and software was a necessary but not sufficient condition for the integration of information and communications technologies into the life of the school. The project set out to examine the question, 'How can we provide equitable and effective access to information and communications technologies within our school?' Project planning identified clear issues in relation to using ICT in schools:

> To date computers have been used in schools to teach computers. However, the primary occupation of schools is teaching subjects and ICT is not one of these subjects. It appears that ICT are peripheral to most teachers.
>
> Commercially available software (courseware) is generally not adapted to the Irish market and as a result is not particularly useful.

<div align="right">(O'Neill 1998e: 2)</div>

The project proposal indicated the potential suggested by the Internet but identified that it had its limitations:

> Appropriate content is often difficult to find, so we are dependent on what others make available on the Internet.
>
> Access speed is a problem, and this will continue to be the case until broadband technologies are rolled out.

<div align="right">(O'Neill 1998e: 3)</div>

When I identified my concerns in the report I expressed them in terms of my belief that a knowledge of ICT is important for all students and that many teachers were missing out on the advantages that ICT can offer (O'Neill 2000b: 7). At this point I was not showing the deeper insight of the emancipatory potential of ICT although I think that these ideas were implicit in my work.

Although I was not aware of the work of Jones *et al.* (1994; 1995) at the time their framework for engaged learning and indicators that denote effective and equitable access to technology can be seen in the project. In the next section I will indicate where I see these indicators within the work of the Setanta Project and how these form the basis of enabling equity within the provision and use of ICT.

Setanta and effective and equitable access to technology

The underlying theme of equality of access was present in the design of this project. In the event equity became not a goal to be achieved but a problematic practice of coming to know through struggle (McNiff 2002: 3). Jones *et al.*'s (1995) criteria for equity can be seen in the complex range of activities undertaken within the project. What other writers refer to as collaborative work Jones *et al.* (1995) refer to as interconnectivity. The collaborative nature of the project can be seen in the desire to be inclusive. Rather than taking a closed view of the work that was to be done, the early plans for the project took an

open ended view. As part of the design of the project I moved outside of the initiating school and sought collaboration between institutions, St Aidan's and the School of Computer Applications. However this was not a project connected at a single level but the interconnectivity spread throughout the institutions. Members of management, staff and students were active at all levels of the project from planning to implementation. I accomplished this by obtaining the support of faculty and students from the university along with teachers and students from the school. Two faculty members of the School of Computer Applications joined the steering committee for the project and joined in the day-to-day running of the project, working with their students and with school staff and students. They placed an Intranet based project, which had the potential to support Setanta, on the list of third year projects for Computer Applications students. Two students selected this project and undertook to work with their university supervisors and with teachers and students from St Aidan's in producing a Virtual Art Gallery (VAM) for the school Intranet (Farren 2001). Deirdre Pentony and Marie Mooney worked on the implementation of the Virtual Art Gallery (VAM) throughout the school year 1999-2000. They worked in co-operation with Sonya Kinch, art teacher in St Aidan's, myself, Ray O'Neill, ICT teacher; and St Aidan's students. By joining in common activities and by 'what they have learned through their mutual engagement in these activities' (Wenger 1998: 45), this group became a community of practice. They were involved in joint enterprises which were continually renegotiated by members. They functioned by mutual engagement, which bound members into a social entity and it developed a shared repertoire of communal resources which included routines, sensibilities, artefacts and styles. These are defining characteristics of a community of practice (Wenger 1999: 73-84). A community of practice involves much more than the technical knowledge or skill associated with undertaking some task. Members are involved in a set of relationships over time (Lave and Wenger 1991: 98) and communities develop around things that matter to people (Wenger 1998). The fact that they are organizing around some particular area of knowledge and activity gives members a sense of joint enterprise and identity.

Fig 5.3 – Sonya Kinch (Art teacher, St Aidan's), Deirdre Pentony and Marie Mooney (Computer Applications students, Dublin City University) collaborating on the development of VAM (Virtual Art Museum)

At the same time in St Aidan's, a group of students undertook to develop their version of the art gallery. This work was undertaken in co-operation with their art teacher and me, their ICT teacher. As part of this project the students identified their lack of web development skills. A training course in web design skills was set up to meet their identified needs. While the focus of this course was teaching ICT skills, interconnectivity was a key theme. The course was taught by a member of the School of Computer faculty. The class group was made up of fourteen students and four teachers, including the principal, learning within a classroom as equals on a collaborative venture.

The project sought collaboration between students and teachers in St Aidan's and teachers and students were supported to develop content for the Intranet. It sought collaboration between faculty and students in the School of Computer Applications. This was accomplished through the work of faculty and students in the development of the Virtual Art Gallery (VAM). A key element of the collaborative nature of the project was the recognition that no one knew where the project would lead but all participants played their part in taking the project forward. The uncertainty of the future was not a barrier to progress but in many respects uncertainty was embraced (Clampitt and DeKoch 2001; Clampitt, DeKoch and Williams 2001; Jeffers, 2003).

The initial project proposal to NCTE set modest ambitions in relation to access to equipment; within a short time this brief widened into establishing a school wide infrastructure to provide ubiquity of technology (Jones *et al.* 1995). The improvements involved redeveloping the computer room infrastructure, developing a second computer

room, providing computers in a wide range of classrooms, the Careers Room, the staffroom, and the library. The objective was to make technology available wherever it was required. The infrastructure of the network, both physical and configuration, had to be addressed to provide a satisfactory level of access for all users. However, true ubiquity cannot be achieved by restricting access to technology to a small number of locations. The challenge of ubiquity was addressed by the provision of laptops and data projectors which allowed the technology to be brought into every classroom. The inclusion of the digital camera extended that ubiquity to the football field, work experience and field trips. The role played by the digital camera can be seen at many locations throughout this thesis. However providing isolated computers does not meet Jones *et al.*'s (1995) requirement for connectivity. Connectivity was addressed by providing a school wide network that involved my cabling every room in the school and making Internet access available across that network. The speed of the Internet connection was a problem initially as the early stages of the project predated broadband access. The specific question of equal access to more disadvantaged groups was addressed by providing access to computer facilities across the school population but specific steps were taken to provide access to groups of students who were often marginalised within the school.

The schedule of work completed within the first six months of activity shows that the idea of connectedness was implicit in the work of the project. The idea of connectedness can be seen in the range of activities undertaken and the range of sponsors funding the work. The diversity of activities shows the not yet explicit thinking that change has to be addressed on a wide range of fronts simultaneously. Change is like a wave which affects everything in its path. The activities undertaken affected the work of the Careers department by providing computer access to the careers teacher and students. At the same time teachers were supported by the provision of computers in the staff room. The far reaching effects of providing computers were enhanced by the provision of email and internet access. However, the users' experience with these would be short-lived if the underlying network was not robust enough to support their use.

While the account above addresses indicators for equitable access it also shows systems thinking (Senge 1994: 87-189) in that the approach is multifaceted, recognising that within complex systems addressing one element of the system is not enough to effect change. The approach shows a focus on the interrelationships between various aspects of the school

community, both physical and human. Figure 5.4 below looks like a traditional table of static information. It is common practice in traditional theses to include items like the table in an appendix. I would like to take an oppositional view (Apple 2003: 14) of the table and speak of it in multifaceted and relational terms.

Infrastructure Development – Phase 1			Cost	Sponsor
Re-cable existing network	Oct 1999	Complete	£13000	St Aidan's
Upgrade network server	Oct1999	Complete		
Reconfigure network to provide robust, secure access	Oct 1999	Complete		
Provide email/internet access to computer room, staff room and main office	Oct 1999	Complete		
Two computers for the staff room	Sep 1999	Complete	£3200	Eircom and St Aidan's
Data projectors (2)	Jan 2000	Complete	£6400	SIP
Laptop (to use with data projectors)	Jan 2000	Complete	£1803	SIP
Digital video camera	Jan 2000	Complete	£1600	SIP
Digital still camera	Sept1999	Complete	£1100	LCA grant
Computer for Careers office	Sep 1999	Complete	£1400	TESCO
Computer for careers room	Mar 2000	complete	£1500	NCTE-Careers

Fig 5.4 – First stage of infrastructural development

The left-most column lists the activities and items purchased as part of the first stage of the Setanta project. The range of activities reflects the multifaceted nature of the project. The sponsors are wide ranging, including the school's resources but also drawing on bodies such as the National Centre for Technology in Education (NCTE) and at the same time availing of the support of commercial bodies like the telecommunications company, Eircom, and supermarket chain, Tesco. The table does not represent an object – it represents a process (Capra 1999). The process is part of envisioning a desirable future and

inventing ways of bringing it about (Schön 1991: 16). To see this table in isolation is to miss the point; it is only relational when viewed in the context of what follows.

The thrust of the Setanta project was not primarily about technology. The technology played a part because of its transformational quality which supported individual human agency. An element in the process of supporting the capacity for human agency was providing the tools to support agency. I sought training in the use of technology as a central part of this. The web of connection is central here. Training did not take place in isolation. Training took place at the same time as the infrastructure was put in place. Training was provided to both staff and students and was provided in those areas that supported human agency. The training courses in the use of technology were not provided for their own sake but in those areas which would enable teachers and students to express their individuality and achieve their aims.

Figure 5.5 below shows the training schedule over the years 1999-2000. As before I do not see this as a table of static information but as an aspect of the web of enablement. This table refers to training that could be seen as being concerned with skills, primarily, but the focus of the training was on learners choosing the context of their learning and on aspects that could help them with their learning or teaching.

Course	Date	Participants
Basic computer skills	May 1999	12 teachers
Presentations - PowerPoint	January 2000	5 teachers
Setup and using data projector and laptop	January 2000	10 teachers
Computer Applications	February 2000	21 teachers
Web design using FrontPage	April 2000	14 students, 4 teachers
Setup and using data projector and laptop	October 2000	7 teachers
PowerPoint and FrontPage	Nov 2000 to Jan 2001	16 teachers
Web design using FrontPage	November 2000	48 students

Fig 5.5 – Schedule of training

The account above could be construed as operating out of a technicist perspective by focussing on technology and training. However the focus on technology and training was

contemporaneous with the principal focus of the Setanta project – the development of a school-based Intranet. The choice of content for this Intranet was important. The decision was taken to avoid technicist approaches and start the work by developing an Art History intranet.

While developing the Art History website students worked closely with their Art teacher and their computer teacher. The nature of the working relationship was collaborative. Each member made their contribution to the group. Sonya, the Art teacher, offered her knowledge of art history, Ray his knowledge of web development. The students, Niall, David, Stephen, John and Aiser brought their personal creativity and enthusiasm to the work.

Weekly meetings took place between the members of the group. Within these meetings the key decisions were made on the design and content of the web site. In traditional schools teachers tend to work alone (Lortie 1975). In learning enriched schools (Rosenholtz 1989) teachers work more together and by having colleagues who show support and communicate more, teachers gain confidence around what they are trying to achieve. 'Joint work' – which includes activities like team-teaching, planning and action research – creates stronger interdependence, shared responsibility, collective commitment and improvement (Little 1990: 22). The shared learning gives students an opportunity to engage in discussion, take responsibility for their learning, and thus become critical thinkers (Totten, Sills, Digby, and Russ 1991). There is persuasive evidence that cooperative teams achieve at higher levels of thought and retain information longer than learners who work quietly as individuals (Johnson and Johnson 1986: 31-2). The collaborative nature of the work appears to promote meaningful engaged learning (Jones *et al.* 1994).

Conversely engaged learning involves being collaborative – that is, valuing and having the skills to work with others. Successful, engaged learners are responsible for their own learning – they select the content and skills that they wish to learn. Such learners tend to be self-organising and self-regulated and are able to define their learning goals and evaluate their achievement. Within the Setanta project, the University students selected the development of the Virtual Art Museum (VAM) from a list of projects. The choice of project was their own and they selected the underlying technologies they wished to learn and use for the project. The university students undertook to develop the virtual art museum using Java (JDK 1.2) and Virtual Reality Modelling Language (VRML) (Farren 2001).

They worked collaboratively with the Art teacher to choose the Art History content for their VAM.

This is an example of teacher and students working together to envision their desirable future (Schön 1991: 16) and they found ways of bringing it about. They chose tasks which were challenging, authentic, and multidisciplinary. These are the types of task that support engaged learning (Jones *et al.* 1994). Such tasks are typically complex and involve sustained efforts by learners over large amounts of time. Rather than being the artificial tasks frequently set in school they are authentic in that they are similar to tasks that the learner might undertake at home or in workplaces. Computer Applications students could expect to face such tasks in the near future in the workplace. The same is true for St Aidan's students. Within the project the participants built knowledge of technical matters, of curricular matters and interpersonal matters. As engaged and collaborative learners they were constructing a knowledge-building learning community which developed shared understandings collaboratively.

Within the Setanta project the learners produced an Intranet to support the teaching and learning of Art History. But the outcome of the project was not the Intranet. The Intranet was an artefact that was produced. The outcome was the collaborative learning that took place through the educative relationships of the participants. In many respects this was education *through* relationship. The relationships were a fundamental source of learning. The quality of the relationships influenced the hopefulness required to remain curious and open to new experiences, and the capacity to see connections and discover meanings (Salzberger-Wittenberg *et al.* 1983: ix). Within this project relationships were not just things people had but things people did (Duck 1999: 21). These relationships were relationships of trust, dialogue and change. The perspectives of students were authorised (Cook-Sather 2002: 3) by the openness to all participants having the ability to take their place in the discourse that was essential to action and having the right to have their part matter (Heilbrun 1988: 18). An element of 'having one's part matter' is ensuring that there are legitimate and valued spaces within which students can speak and be heard (Cook-Sather 2002: 4). For spaces to be 'legitimate' and 'valued' they must go beyond the confines of a student's classroom into the public arena. Learners should be supported to make their learning public.

Having deployed their Art gallery to the school Intranet. two students undertook teaching a topic in Art history to an Art class. To do this they set up the technology – computer, data projector, intranet access – in the Art room. They prepared a class on the subject of Renaissance Art and taught it to a senior Art class. They supported other students in their learning by providing them with information on how to access the web site that they had created. This was a step in making their work public. The students were seen by their peers in a position of authority not usually seen within school. The teachers involved were using their power in an attempt to help others exercise power (Ellsworth 1992: 107). Students and teachers were in the 'being' mode of relatedness to the world. Instead of being passive receptacles of words and ideas, they listen, they hear, and most importantly they respond in an active and productive way (Fromm 1979: 38). The public presentation by the school and university students of their learning was taken a step further when they presented the artefacts to the school and the wider community.

Fig 5.6 – David Hesnan (Setanta Art intranet developer) teaches Art History to a senior class in collaboration with Sonya Kinch (Art teacher), May 2000.

In May 2000 the work of the Setanta project was presented to the school community, the university community, the local community and a range of dignitaries including the Taoiseach (Prime Minister), officials from the Department of Education and Science, representatives of the National Centre for Technology in Education (NCTE), and many others. At the event, students demonstrated and explained the work that they had achieved and the learning that they had undertaken. The event gave learners – students and teachers – an opportunity to celebrate their achievements and to gain public recognition for their learning. Within this event the voices of children, which have been missing from the discussion (Kozol 1991), were found and celebrated. The students had been active with

their teachers in educational reform. The teachers in this project had sought to make a difference for good with, not for, students (Corbett and Wilson 1995).

At the Setanta launch the Principal expressed the hope that the project would continue. His wish can be seen in the infrastructural development that took place over the following year. The pattern of continuing the development can be seen in the first column of the table. The activities undertaken are wide-ranging and diverse. The final column, listing sponsors of the developments, shows that the development was based on gaining the support of a wide range of parties. The table does not show the range of activities undertaken by staff and students to secure the sponsorship and to implement their plans.

Infrastructure Development – Phase II				
Install courseware, videoconferencing software and hardware for use across internet	Feb 2000	Complete	£2500	St Aidan's
Cable every classroom in the school to provide access to the school network, Intranet, Internet and email	April 2000	Complete	£8500	St Aidan's
Computer for Music room	Sept 2000	Complete	£1200	Tesco
Computers to two science rooms	October 2000	Complete	£2700	DES science grant
Provide second computer room	December 2000	Complete	£14000	St Aidan's
Computer in third science room	May 2001	Complete	£ 1200	St Aidan's
Computers in three additional classrooms	May 2001	Complete		Anonymous sponsor

Fig 5.7 – Second phase of infrastructure development

The web of connection can be seen in the development of the ICT infrastructure, in the provision of training and the co-operation between a school and a university. I have a concern that these activities may be seen as technical exercises. The development of an infrastructure is often seen in technical terms. The personal emancipatory aspects of the web of connection were evident in the development of web sites to support the teaching of a range of subjects. The first two major projects were devised to support the teaching of art in St Aidan's. However over the following year content was added to the Setanta Intranet to support the teaching of Science, Geography, Religious Studies and History. In all cases

this development took place in a collaborative way with students and teachers working together to develop and publish the Intranet content.

Setanta Intranet		
Development of Virtual Art Museum	2 university students	complete
Development of Art web site by school students	Art teacher and 25 students	complete
Science site	1 teacher, 3 students	First phase complete
Geography site	1 teacher, 3 students	First phase complete
Religion site	1 teacher, 12 students	First phase complete
History site	2 teachers, 24 students	First phase complete
School of Computer Applications, DCU		
Development of virtual art gallery	2 faculty, 2 students	Complete

Fig 5.8 – Development of intranet

The Setanta Project was a project of discovery. It started with a picture of a number of issues in relation to using ICT in learning but did not have a clear picture of an outcome. The use of ICT in this case can be justified on the basis that the students were interested in learning when it involved ICT. Introducing ICT into the classroom provided a different classroom environment from the traditional environment of the school. The student-centric nature of ICT work frees the teachers to work with individuals or groups of students. The use of ICT gave the students the opportunity to show that they were 'knowers' in their own right. This was particularly noticeable when the students were showing the teachers how to achieve particular effects with the computer.   They were exhibiting their practical knowledge of working with the computer. This was knowledge gained through experience (Reason 1988: 229).

Through the North/South schools link and the Setanta project I provided opportunities for learners – students and teachers – to take control of their lives and build a new way of learning together that was life-affirming and allowed us to move from the traditional didactic classroom toward a model of learning that did not necessarily require the staples of traditional school – classrooms, timetables, rules, routines, teachers, students. Learners were supported to free themselves from 'bolt down seats and lock–step curricula' and

teachers escaped from the role of skilled engineer (Cook-Sather 2002: 3) and became instead collaborative teachers working with colleagues and students on a more equal basis, forming a community of practice. While reflecting on the achievements of the North/South schools link and the Setanta project it seemed to me that while steps had been taken in the direction of building a dialogical community there was room to go further. In my journal of 2 February 1999 I noted that:

> Although the work undertaken as part of North/South schools link and Setanta have provided some opportunities for dialogue and moves some of the way toward a model of ICT as political action I think this needs to go further. Apart from the evidence from the work undertaken as part of the projects and the video and audio clips of some of the events I have not really challenged the participants to be reflective or to comment on their own learning. I think I should try this through some of the projects. The LCA group could provide opportunities….

The recognition that some progress had been made, but that there were opportunities available that would provide the basis for attempting to move toward a more dialogical situation, particularly in formal classes, was a new step in the process of attempting to address my experience of myself as a 'living contradiction' (Whitehead 1993). The following section provides an account and the rationale underlying this work. This was also the point when I developed a greater awareness of systems thinking. In the account of the Setanta project I have referred to the need for networking, the fact that trying to make one single change is difficult. Change can be understood as successful when undertaken on a wide range of fronts at the same time (Senge 1994: 87-189). The reality is that schools, in common with many other organisations, increasingly work in a world of separations and clear boundaries: boxes describe jobs, lines chart relationships and accountabilities, roles and policies describe the limits of what each individual does and who we wanted them to be. We are skilled at describing the world with strange unnatural separations (Wheatley 1999). But the world is a natural entity. All life organizes into networks, not neat boxes or hierarchies. Wherever you look in the natural world you find networks which are always incredibly messy, dense, tangled, and extraordinarily effective at creating greater sustainability for all who participate in them. The organisation chart is often seen as the structure of an organisation or in some cases people have moved beyond the chart to see the structure of an organisation as workflow and processes. An alternative systems view of organisation is that it is the pattern of relationships within the key elements of the

organisation (Senge 1994: 90). One of the insights of systems thinking is that 'you won't be able to divide your elephant in half' (*ibid*). Understanding the elephant, which is your system, cannot be achieved by the well worn 'scientific approach' of fragmentation (Bohm 1995: 2). Achieving results in complex systems requires bringing in as many perspectives as possible. Interdependency and collaboration are touchstones. By examining my research outside of school, in my administrative work with NCVA and further work in school I will show some of the independencies and how different aspects of my work systems were brought together in life-affirming practice in pursuit of political action.

Project 4: Action Learning and interconnecting branching networks

In NCVA I work with administrative staff in handling data, designing computer programmes to process data and designing forms and other documentation. My first enquiries in relation to certification focused on understanding the nature of the programmes being certified, understanding the special administrative difficulties posed by these programmes and devising means of certifying the programmes speedily without compromising their integrity (O'Neill 1997).

Reflecting on this work and its improvements, it seemed to me that a focus on problem solving was not enough. The approach which I had been using involved single loop learning (Argyris 1982: xii, 159). In engineering cultures, where single loop learning is common, change is treated as an aberration, a discrete event that temporarily disturbs an organization in a generally stable business environment. But it is evident in today's competitive environment that change is the norm, while steady-state is often an illusion (Dawson and Jones n.d.).

At this time NCVA was on the brink of considerable change. Under the terms of the Qualifications Act (Government of Ireland 1999) the existing Council would cease to hold office and be replaced by a new Council, the Further Education and Training Awards Council. Staff of NCVA had no guarantee of jobs with the new body. The new council would have new functions, new relationships with course providers and an emphasis on quality assurance. All these factors implied that NCVA was not in a steady state but in a state of considerable uncertainty and unpredictability. The model we had been using was not able to accommodate the rate of change we were experiencing and the problems we faced were not individuals' problems but problems for the entire organisation. It was in

this context that it became apparent that a process to support organisational learning and organisational change was required. It seemed to me that establishing a process of organisational learning within NCVA required the same sort of philosophy of learning that informed the work in school. I was aware of the management literature that indicated that about 75% of all organizational change programmes fail (Dawson and Jones n.d.). For the most part change programmes do not fail for technical reasons but because people feel left out of the process and end up lacking the motivation, skills and knowledge to adapt to new systems and procedures. Organizations don't adapt to change; their people do. Any attempt that was to be made to improve how we work must be focussed on people. This insight is an important crossover from my school work. While there was a strong focus in school on technology in building relationships, in NCVA the focus was on building relationships to change processes and build a learning organisation.

My proposal for the formation of an action learning group suggested that the model for the group would be innovative but would draw on work on reflective practice, particularly critical reflective practice, and of learning organisations as developed by Argyris (1982), Schein (1996); Schön (1987; 1991; 1995) and Senge (1990; 1997), and on the action research of Lomax (1994; 1996; 1998), McNiff (1988; 1992; 1993; 1994; 1995) and Whitehead (1989; 1993; 1998; 2003a; 2004). My proposal described the group that would be formed as self-directed and participatory with the members of the group deciding on their areas of learning or research and on the content of their study. While certification of the work of the group would be desirable, the group itself would decide whether it was required and what form it would take. I proposed that the purpose of the group would be focussed on professional development in the context of building a learning organisation.

> The primary purpose of the group is to enable the group to develop its own model of professional development that is suitable for the members of the group. It is anticipated that through this process the work of the members of the group will contribute to the work of the organisation. While individuals will be working, in most cases, on individual projects the nature of their study will contribute to the development of a learning organisation.
>
> (O'Neill 1998b: 1)

The main goal was identified as the formation of a group of people who were interested in critically examining their work with a view to improving practice. At this early point I raised the possibility of the participants receiving formal certification for their learning

(O'Neill 1998b: 1). My thinking was that a body centrally concerned with certification and making awards should support its staff in achieving awards. This in itself was an attempt to bring practice into line with values (Whitehead 1989; 1993).

The proposal was welcomed enthusiastically by the Chief Executive. She sent an email to all staff outlining the idea and suggesting an opportunity to meet to discuss setting up the group. At the initial meeting a plan was drawn up to enable the group to meet once a fortnight for about 2.5 hours between October and April. Twelve members of staff undertook to take part and carry out their Action Learning projects. My action research project focussed on supporting the group. The materials used can be viewed at http://www.ictaspoliticalaction.com/pages/actionlearning.htm.

One of the first activities I undertook was devising a schedule for the fortnightly meeting of the group and organising the meetings in a structured fashion. Each session had a theme intended to support the development of spirals of research as described by McNiff (1988; 1996). Within the first meeting each member of the group identified a concern within their practice. With the support of the group they developed plans of action to address the concern. They undertook action according to the plan. They then evaluated the quality of the action and made adjustments as necessary.

The fortnightly meeting was divided into three main components. Each session started with an input from an experienced action researcher. These inputs addressed specific aspects of carrying out action research e.g. principles and practice of action research, action and observation, evaluating the outcomes of action. The second component involved a workshop applying aspects of the input to the individual's research project and finally, the third component was concerned with planning the next stage by critically reflecting on their action.

The concerns selected by members of the group included:

> How can I improve the quality of data returned by new centres?
> Improving the approval process for locally devised assessment.
> How can I support an Action Learning Group in their activities?
> Learning to change: the Chief Executive of a small state agency uses learning to prepare the organisation for change.
> Supporting certification for work based learning centres.
> Improving the process for ordering stock.

At the end of the programme six members of the group presented their work at an action research conference. Two members presented publicly for the first time. This was an important achievement. The work of the group was presented to a staff training day. In an evaluation of the project carried out at the staff day it was decided that the next step in the action was to develop an action learning module to enable certification of the work of the learners and to continue the work of the group into the following year.

Action Research Module

Within the NCVA framework, a module is a statement of the standards to be achieved by a learner for the award of a credit. Module credits can be accumulated towards a certificate. NCVA publishes module descriptors detailing the standards to be achieved by learners for the award of a credit. These descriptors are used by learners and tutors in planning learning programmes. The elements of a module descriptor include statements of the purpose and general aims of the module, details of the specific learning outcomes to be achieved and the assessment techniques and criteria to be applied. On completion of a module, candidates are assessed to establish whether they have achieved the required standard.

Module development took over a year to complete. The consultative group was drawn from all five NCVA boards of studies, and people were nominated to the group by the boards because of interest or experience in the area of work-based learning. The consultative group members included a wide range of professional practitioners: occupational psychologist, teachers, guidance counsellor, trade union officials, human resources specialist, rehabilitation expert, training consultant, owner/manager of a small or medium enterprise (SME), community/adult education organiser, chief executive (Deane 2000). It was originally intended that the module would be called Action Learning as that was the name of the programme followed in NCVA. It was felt by the consultative group that 'Action Learning' described a general learning approach in organisations and did not reflect a set of learning outcomes. Later drafts of the module were entitled 'Learning through Practice', 'Evaluating Workplace Practice' and 'Learning in Action'. The final draft adopted by the consultative group and approved by the Board of Studies is called Action Research.

The focus in the module is on planning, implementing and evaluating a research project in a context which has relevance for the learner. This will typically be the workplace, but the

module is written in such a way that it could also apply to other settings, such as a community or educational environment. In this way, the module is accessible to a greater range of learners (Deane 2000).

The learning outcomes described within the module emphasise the collaborative and dialogical nature of the learning that could take place.

- be able to investigate and evaluate practice in specific settings
- recognise the importance of reflective enquiry
- work collaboratively with others
- appreciate the importance of ethical issues in relation to self and others
- understand the contribution made to personal and public knowledge
- appreciate the importance of research methodologies.

(NCVA 2000)

As described in the module descriptor the learner's achievements are assessed using two techniques: a learner record and a project. It was agreed that the two techniques should receive equal weighting in this module, chiefly because of the high level of importance attached to the learning process in it (Deane 2000). The NCVA Action Research module was made available to learners in autumn 2000. The opportunity for recognition of learning through action research is available publicly and was last used by learners in 2007. This group of learners was unconnected with the original NCVA action learning project.

As a result of the work of the Action Leaning group changes were made to a range of processes underlying certification in NCVA. These supported NCVA to accommodate the range of changes it was encountering as an organisation. However the administrative changes were not the most important achievement of the group. One member of the group wrote:

> The level of personal learning that took place as part of the study was very high. On reflection I feel that the 'action' taken was less significant than the process of collaboration involved in the 'research'.
>
> (Cullen 1999)

The participants' knowledge has been acknowledged insofar as they have resulted in changes to various processes. The changes have been made because of a dialogical

process. The process was dialogical because of the willingness to listen to other points of view and incorporate those points of view into the decision making process.

> However, the process of collaboration led not only to an Approval Form which will be readily acceptable to the other Development Officers because of their involvement, but an identification of a range of wider issues relevant to the future role of NCVA in quality assurance and an insight into team approach across the roles of Development Officer, Support Officer and External Assessor.
>
> (Cullen 1999)

Senge (1990: 10), drawing on the work of Bohm (1992: 203-210), makes an important distinction between dialogue and discussion. 'Dialogue differs from the more common 'discussion,' which has its roots with percussion and concussion, literally a heaving back and forth in a winner takes all competition.' Dialogue can only occur when a group of people see each other as colleagues in mutual quest for deeper insight and clarity (Senge 1990: 245). As Cullen (1999) has described, the process did not result in 'heaving back and forth' but collaboration and 'buy-in' from the participants and those around them. Cullen shows an approach that is in contrast to 'herding cats' (Bennis 1998; Crocke *et al*. 1999; Dawson and Jones n.d.; George and Krajewski 2001; Lott 2006; Stuart 2006). The work of the organisation became a more educational process as the claims to knowledge of each of the partners – teachers, curriculum developers, administrators and students – were recognised and a collaborative system of certification was developed.

Deane (2000) carried out a study into the impact of the NCVA Action Learning Group. She wrote that it is 'clear that the participants viewed the group as a positive learning experience' (Deane 2000: 132). She further indicated that much of the learning has occurred because of a willingness to see fellow workers as colleagues and collaborators in the process of devising better, more educational systems (*ibid:* 128). My colleagues can learn and are learning better ways of working. They must be given the conditions and the support necessary to do this. An essential element of the recognition of fellow workers as colleagues is a willingness to enter into dialogue (Senge 1990: 245). The participants voiced this in terms of 'sharing learning with others, and gaining insights into their concerns' (Deane 2000: 133).

One of the reasons for including the NCVA project in this work is that it shows the diversity of the research. My thesis is not about a single project – it is about a web of connection and of enablement. The thesis accounts for a web of interconnected, distributed

communities of practice. The interconnecting branching networks show how the interconnectedness of the networks of practice contributes to global learning networks. The significance of the research based in school and NCVA is that in some respects they are different but the underpinning assumptions are the same. The research shows the transferability of knowledge and more than that of the interconnected nature of human activity. The research has enquired into the inter-human condition, the ontological underpinning of communicative action (Habermas 1975).

Within NCVA I used my improved understanding of the certification processes to help others to see that they could improve their understanding and thereby devise means of carrying out the certification of programmes promptly and reliably. Superficially this may appear like problem-solving or improvements to practice but while there are problem solving elements and there were improvements to practice, the participants within the NCVA action learning projects went further than this and developed their living theories of practice (for example, Cullen 1999; Deane 2000).

In the Setanta project and the NCVA action learning project the groups of people formed communities of practice. They were involved in a learning process which was socialised and collaborative and situated in a particular context (Brown and Duguid 2000; 2002; Lave and Wenger 1991; Wenger 1998).

Project 5: Supporting teacher education through LCA and political action

My learning from the various projects that form my research indicated to me the centrality of including as many perspectives as possible when trying to change the way we work and the way we are. The account of the action learning group shows how the ideas I had been developing around collaborative work have applicability outside of school. At the same time the action learning group had developed aspects of participants' personal reflection and participants reporting on learning which I had not set out to develop in my school work. At this point I will return to my research in school but using my learning from the NCVA action learning project. The focus in this section is on my practice as a co-operating teacher with student-teachers at university during teaching practice in school. The student teacher is working with students who are undertaking a programme of learning which is not the dominant academic programme in the school. In this section I will show how ICT can

be used to support both the student-teacher and the students to reflect on their activities and take control of their lives.

Within the complex system that forms the school many things apart from teaching take place. I wish to focus on a few of them and on their interconnections and I am going to examine how their interconnections can work to form webs of relations that are spun into existence, as individuals realise that it is of greater benefit to them if they nurture relationships than stay locked in narrow boundaries of self-interest (Wheatley 1999). The particular interconnections that I will focus on are those formed when systems to support pre-service teacher education meet with a programme to retain within education students who have been failed by the traditional model of second level education. I will approach this section from different perspectives and later these perspectives will merge to from a living system (Wheatley 1999).

Let me tell you a story. A student teacher arrives in my school. She has spent three years in college. She is now facing a career as a teacher. What are the factors that will influence her practice as a teacher? Zeichner and Tabachnick (1981) tell us that the effects of university teacher education will be 'washed out' by school experiences. Research at Konstanz University in Germany 'showed that teachers passed through a distinct attitude shift during their first year of teaching, in general creating an adjustment to current practices in the schools, and not to scientific insights into learning and teaching' (cited in Korthagen and Kessels 1999). The two sets of research suggest that the first year of teaching has a larger effect on the attitudes and practice of young teachers than the several years in preservice training. This places a considerable responsibility on co-operating teachers in schools in their role of support. The types of practice that the novice student teacher experiences during her first year may be the dominant influence throughout her career.

Alice is a student of the new BSc course in Science Education at a nearby university. In the third year of her course Alice will take part in a school placement for fourteen weeks. During this time it is anticipated that she will gain experience of teaching within the school and will gain the opportunity of using what she has learned in college. While the principal focus of placement is in relation to teaching science, Milo, who acts as liaison teacher with the university, suggests to me that Alice might find it useful to teach IT classes. Milo thinks this is a good idea despite the fact that Alice's teaching practice is intended to be

mainly in the science area as that is what she is being trained for. Milo articulates his reasons. ICT experience is useful for any young teacher – 'one more string to your bow', he jokes. In addition Alice will gain experience of working within a different type of programme by working with LCA students. "It will all look good on your C.V.," says Milo.

Previously at a staff meeting in 1997 Richard Keane, the School Counsellor, had drawn attention to the fact that a significant minority of sixth year students do not achieve what is commonly regarded as a 'Pass' in the Leaving Certificate – a 'D' grade in each of five subjects. He suggests that these students might be served better by a less academic programme and there might be some advantage to the students in offering the option of the Leaving Certificate Applied programme in the school. From a complexity perspective, the lack of 'success' in formal examinations of a group of students produced the 'far-from-equilibrium' position that was enough to challenge the dominant traditional view within the school (Tsoukas 2002: 423). Consequently resistance to the new type of programme was limited and I was among a group of teachers, including Richard, Milo, Kevin Slattery and Anne O'Driscoll, who were able to break out of traditional roles and volunteered to form a team to investigate the possibilities within the Leaving Certificate Applied programme and report back to the staff.

The Leaving Certificate Applied (LCA) programme is a distinct, self-contained two-year programme aimed at preparing students for adult and working life. The programme puts an emphasis on forms of achievement and excellence, which the established Leaving Certificate has not recognised in the past. Its primary objective is to meet the needs of students who are not catered for by the two other Leaving Certificate programmes, the established Leaving Certificate and the Leaving Certificate Vocational Programme, and who might otherwise leave full-time education (Department of Education and Science 2000). While the view expressed in this official report is positive, researching the programmes in other schools indicated that the LCA is frequently seen as a 'lesser' programme. Undaunted by these perceptions, the group of teachers undertook to establish the LCA programme in the school. At an organisational level the approach taken to set up the LCA programme was unusual in that it was organised with the teachers involved taking a collegial approach, in contrast to the authoritarian approach common in the school. The LCA team assumed that learning was an essentially social phenomenon and that a

successful programme depended on the relationships within the team and with the students. The tacit view of the group was that learning is part of our lived experience of participation in the world (Wenger 1998: 3). The team took the view that learning is part of human nature, that we cannot not learn in processes of social evolution (Habermas 1975), and further that we are all good at it (Wenger 1998). I undertook teaching ICT and Technology to the LCA class.

This was the context within which Alice undertook to teach ICT to the LCA group. Alice entered the LCA computer class without any particular preconceptions of how this class would be, but she found working with the class difficult. Some of the students were not particularly interested in the work. While the assigned work on Excel was progressing slowly Alice noticed some students were downloading photographs of their classmates and teachers and modifying them. The Social Education teacher looked particularly well with the eastern headdress and beard that they added! Alice was surprised. She had no idea that photographs could be manipulated like this on a computer. It seemed while she was good on spreadsheets these students had a range of other IT skills that she had never even thought of.

After class student-teacher and teacher discussed how the class went and planned further classes. Alice spoke to Ray about her experiences in class. She explained that some students would do the prescribed work but then set off searching the Internet for ring tones for their mobile phones or manipulating pictures or playing pool online with someone in France. Here are excerpts from a conversation:

> Ray: Well, what are we supposed to be doing in these classes?
>
> Alice: Helping the students gain IT skills.
>
> Ray: Are they gaining IT skills?
>
> Alice: Well, yes, but not always the ones that they are supposed to be gaining.
>
> Ray: What ones are they supposed to be gaining?
>
> Alice: Well, we are doing spreadsheets at present.
>
> Ray: Are they gaining any spreadsheet skills?
>
> Alice: Yes, but a lot of their time is spent on other things.
>
> Ray: Another one of their modules is an Internet module. Are they gaining any Internet skills?
>
> Alice: Yes, but not necessarily the ones they should be gaining.

Ray: Do they learn anything about the Internet by playing pool with someone in France?

Alice: Well, I suppose so.

Ray: Like what?...think it through step by step …how do they get to the stage that they are playing pool with someone in France?

Alice: Well they have to log onto the computer. Start up Internet Explorer. They need to get an URL, the address of the website. Sometimes they do a search for the site; sometimes they get an address from their friends. I saw John recently… Paul was on a site with a weird long address…John asked him for it but he could not type it correctly…John says "Will you copy the address into a Word document and put it on 'common-write'? I can get it from there."

Ray: Hold on there, can we go through that much again … logged on…started Explorer…could not get to where he wanted to go… asked another student for help…gave his classmate explicit instructions on how to help...copies the address from the word doc on 'common-write'… pasted it into address bar on Explorer … accessed the web site he wanted to play the game. Do you think these guys have gained IT skills? Can they work collaboratively?

Alice: I had not thought of it like that. But they are not necessarily learning what I am teaching.

Ray: Maybe… but maybe it is not necessarily about teaching…maybe it is more about learning… if they are learning… and in the midst of them learning things this way they can achieve the necessary grades then...

Alice: They know a lot of things about computers that I do not know. Jason showed me how to download photographs from the digital camera yesterday. Before taking this class I had not even used a digital camera. Sometimes I am not sure who is teaching who here!

(Reflective diary 15 March 2002)

Perhaps what is most interesting about the vignette is the range of learning that is taking place. The students were learning – with each other and with their student-teacher. Alice, the student teacher, was learning – with the students and with her teacher supporter. Ray, the student-teacher supporter was learning – with the student-teacher and with the students. But not only was each learning but the learning formed an intricate web that linked students to each other, that linked the student-teacher to the students and to her support teacher; that linked the support teacher and his student teacher and through her his students. In the midst of all this perhaps the least successful intervention was the overt teaching of Excel. Most of the learning taking place was apparently informal and due largely to an openness in the relationships between the various parties. Within Alice's classroom the content had been largely abandoned in a process where the students were supporting each other in deciding

on their learning. This makes it an essentially social process. By their engagement with their teacher and their work they were showing their competence. This competence in relation to valued enterprises is a feature of knowing (Wenger 1998: 4). Their learning was by experience rather than taught. Their knowing was not an abstraction but a matter of active engagement in the world. In my experience of ICT a key aspect of young people's success with ICT is their willingness to engage. This experience has been articulated by others:

> In our generation we reach for the manuals – if we don't know how to do something, we ask. We don't engage directly with the unknown and then do sense-making afterwards. Kids today engage and synthesize.

(Brown 2000)

Brown develops this idea indicating that many colleges are populated by 'analogue professors' attempting to teach 'digital students'. In many cases the students are digitally literate – he calls them 'digeratti'– while their teachers are effectively digitally illiterate being far more comfortable with older technologies, like print technology (Brown 2002).

The outcome of the students' engagement with ICT was a willingness to engage in other ways and to achieve meaningful learning. These students were preparing for the world of uncertainty (Claxton 1999). Alice was similarly preparing for her world of uncertainty. By entering into a dialogue on her teaching she, like her students, was learning by experience. But that dialogue was also supporting Ray in his understanding of the role of student-teacher supporter. Alice did not need to be told how to teach. Alice needed dialogue; conversation that sparked ideas that she could work with in order to improve her classroom practice.

While working with Alice and the LCA group I was conscious that our work was improving in the sense that the conflictual contact that I had had with the students was disappearing and they were making improvements in terms of ICT skills that were impressive. The World Wide Web was acting as a transformative technology honouring multiple forms of intelligence and the vernacular of today's student (Brown 2002). At the same time I was conscious of the fact that reflection on experience in the classroom seemed to be helpful for Alice and for me. Drawing on the dialogical nature of the action learning work in NCVA I was conscious of the lack of dialogue within my classroom. I wondered if I could find a way through ICT that would support reflection and perhaps lead to dialogue

in the classroom. The LCA programme includes a task called the Personal Reflection task, but this had not been carried out through the medium of ICT previously. At the same time I was conscious in my research that I had been making claims that other people were learning, I could not provide evidence from the learners that they were learning. Focussing on self evaluation and personal reflection might support both of these purposes.

At the time another colleague, Luana Macanany, was undertaking further studies and told me that she had an ICT assignment to carry out. In conversation the idea of developing a 'WebQuest' to support personal reflection was born and Luana set about developing the WebQuest. The personal reflection WebQuest can be found at http://www. ictaspoliticalaction.com/LCA/wq/default.html. Alice and I looked at how we would implement this in class. While the LCA team and students could be considered a community of practice (Lave and Wenger 1991; Wenger 1998) the community was widening as people with diverse aims saw possibilities of achieving those aims by collaborating. This was a community without a name and its activities were mainly informal.

Let me pause briefly at this point because I appreciate that the underlying web of activities might confuse the issue. The linking webs involve me as teacher supporting my students in a non-traditional although mainstream programme in a secondary school. With this group I am specifically trying to use ICT as a transformational medium to encourage students, who might otherwise be reluctant, to engage in learning. It is my belief that choosing the content and method of their learning can make a significant contribution to engagement. From my experience in other projects, particularly the NCVA Action Learning project, I believe that personal reflection could have a significant impact on learning. The second element in this web involves supporting a student teacher in her teaching practice. The third element involves supporting a friend from outside school as she undertakes her Masters studies. The fourth element involves the LCA team of teachers who do not confine themselves to their subjects but see themselves as a collaborative team.

Now let me describe what a WebQuest is and how it could contribute to personal reflection.

A WebQuest is an inquiry-oriented activity in which most or all of the information used by learners is online. By providing links to the Internet to the information necessary to complete the quest, the student is able to focus on the material rather than spend time

looking for it. WebQuests are usually organised into five parts: introduction, task, process, evaluation and conclusion. It is claimed that undertaking an assignment using these steps promotes critical thinking at the levels of analysis, synthesis and evaluation (Dodge 1995).

The Personal Reflection WebQuest consisted of three 'processes' to be carried out online which, it was hoped, would support students' reflection skills. The first task was

> Using the given headings (this is called a template) write a story reflecting on a recent learning activity. It can be about any subject area (IT for example) or any particular class lesson or activity. You then change the headings to make them more suited to what **YOU** wanted to write about ... but you must explain why you made the changes.

<div align="center">(www.ictaspoliticalaction.com\webs\wq\webquest\webreflectask.html)</div>

The task was supported by a document which provided headings to get the learners started. However, we were conscious that this approach was rather directed. To counteract this, learners were given the opportunity to change three of the questions to their choice of question. Students wrote about outdoor pursuits, ICT classes, First Aid class, Construction Studies and many others. In his reflection, one student, Mark commented, 'The best bit for me was the feeling that I was learning something that could help me to save the life of somebody close to me or to save the life of a stranger. This is a really satisfying feeling' (O'Byrne 2004: 3). In the section relating to changing the questions Mark wanted to change most of the questions. One of his changes was

> **What were you disappointed about?** I would have changed this to: What were you happy about? Because there was nothing I was disappointed about and I would have preferred to write about what I was happy about. I would have written: I was happy about doing C.P.R. because I know that I could one day use this new skill that I have learned to help somebody or maybe even save the life of somebody.

<div align="right">(O'Byrne 2004: 4)</div>

Within this account it is clear that Mark knows that he has learned CPR and learning has empowered him. He can see the potential within his learning and interestingly Mark does not see his learning selfishly but rather sees that his learning can be put at the service of others. This is an example of the collaborative nature of the work being interlinked with collaborative outcomes. I suggest that this implies that how you come to know affects what you come to know and how you put your knowledge to use. Beyond being collaborative these are outcomes of care for others and Mark gains satisfaction from this reflection.

Mark clearly meets the criteria for an engaged learner in that he is responsible for his learning; he is self-regulated and able to evaluate his own achievement (Jones *et al.* 1994).

The second WebQuest 'process' involves writing a reflective letter to yourself using a recent learning activity. Personal reflection was supported using an online checklist of 'reflective statements' which the students could use interactively. The second part of the process asked students to organise themselves into groups and discuss whether each person's letter contained 'good or not so good' reflective statements (www.ictaspoliticalaction.com \webs\wq\webquest\webreflectask.html)

Through this assignment learners produced evidence that they had gained competence and that they could find their place in the outside world. For example: 'During the two years in LCA I have found it to be a wonderful experience because part of the course contains work experience… working in different warehouses I have found that I am able to deal with the different freight and understand the different hazard labels so I know where to put them' (Kearns 2004: 8).

The third reflection process involved visiting one of seven websites and reading an article there. The learner had to summarise the article and write out the three things he considered most important. The learners then had to form groups and see if the group could agree on the three most important things. One of the seven articles was an account of the 'Saipan incident'. For readers who are not Irish the Saipan incident requires some explanation:

It has been argued that the population of Ireland can be divided into two roughly equal parts: those who support Roy Keane and those who support Mick McCarthy regarding the Saipan incident. The Saipan incident refers to a situation that developed during Ireland's preparations for the 2002 World Cup. Following a dispute between team captain Roy Keane and manager Mick McCarthy about conditions at the Pacific island training camp in Saipan, Keane left the team in Saipan and returned home. This caused controversy at home where the merits of both sides were argued strenuously (O'Callaghan 2004).

Such was the impact of the Saipan incident that two years later it was the favourite of the seven articles for this assignment. In his account one student wrote:

> We went over the three points as a group and agreed that **the damage has been done** is a good point because he can't change what has already happened. The most he can do is say sorry for what he has done.

> I learned that we can work as a group and agree on three points without any arguments among the group. You can use this in the workplace if you are working with a group to make the job a lot easier for us. It can also be used in school for setting up an event in a group.

(Gibney 2004: 2)

In contrast to Keane and McCarthy, Christopher and his fellow learners were able to enter into discussion within a small group and discuss different points of view and come to a conclusion. This is a dialogic community participating in a system of intersubjective learning (Arnett 1986, 1992; Freire 1972; Gadamer 1979). Dialogic learning involves the engagement of learners and teachers, it takes as its subject matter content which is relevant to the learning, and produces learning which is relevant to the learner. In Christopher's case we can see these elements. While the prompt for the formation of the discussion group came from the teacher, through the WebQuest, the action to form the group came from Christopher. The formation of the group and the work undertaken helps develop democratic values in the educative process, supports the building of character, and assists the establishment of a community for the educative enterprise (Dewey 1981; Friere 1972). Beyond this, Christopher is able to reflect on his tacit learning from experience and make that learning explicit (Varela *et al.* 1993) to members of his learning community. By writing his account of his learning and making it available for publication he is making his learning explicit. He is contributing to the knowledge base of education (Snow 2001). Further he can apply his learning to similar situations and anticipate where this learning might be useful later. It seems to me that Christopher has developed a personal theory of learning grounded in his practice. Facilitation or leading discussions is one of the 'great difficult things' of classroom teaching (Greene 1954). Christopher has taken it in his stride! Perhaps the main insight for the teacher from this experience is that some matters that are difficult to teach can easily be learned within communities of practice (Wenger 1998).

Christopher's work is highlighting the development of an educational community which is intersubjective. All the parties within Christopher's discussion were relating to one another as having a sense of agency and a unique perspective (Guilar 2006). In traditional teaching there is a knowing subject, e.g. a teacher, and known objects, e.g. students and content. In Christopher's dialogic community there is no knowing subject or known objects. Instead, all three elements relate in an intersubjective community. In this community, roles such as teacher and student are still significant. However, the nature of the dialogical conversation

changes power relations. In contrast to conventional pedagogy the class community was participating in 'I-thou' relationships rather than 'I-it' objective relationships (Buber 1958). Students' roles changed from being passive learners to becoming co-creators. In expressing their perspectives, learners – teachers and students – co-create a shared world in which difference is expressed and respected.

It has been argued that many journals of educational research devote too many pages to 'how' we know rather than 'what' we know and that 'reflection is not for the beginner' (Snow 2001: 4). Christopher's work suggests that 'how' we know is crucial to 'what' we know. Christopher's learning was dependent on 'how he came to know' – participation in a dialogic community and reflection on his practice. A different way of coming to know might have taught different lessons. Methodological discussions are important. On the matter of 'how' we come to know I lean towards Rorty:

> Theories and perspectives draw our attention to certain issues, they invite us to punctuate the world in particular ways, they are tools for doing things, rather than mere representations of the world as it allegedly is.

(Rorty 1991: 81)

The dialogical community that Christopher was part of was one of his tools for doing things. It was the nature of his dialogical participation that provided him with the means to take action to achieve his aims. While 'how' he came to know was important for Christopher, 'what' he came to know was a crucial part of his programme. As his teacher I was making an attempt to bring my practice into line with my values by taking an approach grounded in my value of justice in supporting a dialogical process. Nonetheless students were intended to achieve the skills and knowledge of a body of content. In collaboration with the student teacher, Alice, my responsibility was in relation to ICT skills. A key question for me is: are ICT skills and knowledge something that must be taught by a knowing subject to a known object or can this work be carried out in participatory ways?

After working with the LCA group for a little time it became clear to me that this group was not formed on the basis of ability so much as on the basis of learning style (Gardner 1993; Gardner and Hatch 1989). A key challenge facing the teacher is the diversity of students' learning styles (Mamcher 1996). Students vary in terms of intellect, motivation and perception. Different learners have different learning styles. Some want to work with ideas by speaking about them while others want time to think about ideas alone before

speaking about them. Some people want concrete facts and deadlines while others want freedom to work on projects (Guilar 2006). But even these dichotomies, while useful for illustration, are too simplistic. Learners cross back and forward across these boundaries. Any approach undertaken repetitively tends to become boring whether it suits your learning style or not.

My previous learning with self-paced student notes had taught me that I needed to go further in allowing students control over their learning. But I had to reconcile this with a body of content and skills to be learned. This represents aspects of the paradoxical nature of the role of the teacher in dialogically-constituted education (Buber 1947: 118). The teacher in the classroom, even the dialogically-oriented teacher, cannot function without authority. This is not the same as authoritarianism. Dialogical authority is the expression of expertise inviting a response that may be different. The teacher, as authority, still needs to be scholarly in relation to the content but also needs tentativeness about that knowledge. The teacher works by inviting other views, acknowledging them, and responding to them in an open dialogue (Guilar 2006). The challenge for me was to work collaboratively with the students to devise projects which included the skills to be learned and which met the criteria of the curriculum while making them relevant.

Theorising my practice in the light of the five projects

At this point I would like to place some of what I have described above within my chosen theoretical frameworks. Arendt's ideas on human activity and in particular her distinction between three types of activity, namely labour, work and action is a key framework (Arendt 1958).

When the LCA students were carrying out their assignments through the medium of ICT they were involved in labour, work and action (Arendt 1958). In Arendt's terms labour is routine behaviour required to meet basic needs. '… it leaves nothing behind, the result of the effort is almost as quickly consumed as the effort is spent' (Arendt 1958: 87). The labour for the students was the basic ICT skills like logging-on to the network, saving files and printing documents. When they produced multimedia artefacts like websites and PowerPoint presentations they were involved in work. Work includes activity by artists and craftspeople to make lasting objects that comprise the human world. '[Work]… fabricates the sheer unending variety of things whose sum total constitutes the human

artifice' (*ibid*: 136). However, as they took control of their lives through these activities they were taking action. To act is 'to begin' or 'to lead' to 'set something in motion' (*ibid*: 177). Action requires collective interaction to determine what is good and just (Sutherland 2001: 1). The students were involved in action in that they got to know themselves better, they got to understand their capacities better, and they were able to articulate those capacities better. This was achieved through the medium of technology on the one hand as well as the provision of an environment which supported collaborative work. That environment was not created on its own. The work of the LCA programme was the work of a team of teachers working together with their students; some of them using ICT but some of them using other methods to arrive at the same type of outcome. 'ICT as political action' was not operating in a vacuum but within the context of a group of people who were working collaboratively to support non-traditional forms of learning.

Within this thesis I am showing how I have engaged with the relations of power, worked with others to create an alternative power base that is grounded in a capacity to create certain kinds of educational relationship with those that one is working with and, through this, transformed obstruction into opportunity. By doing this I have engaged with Joan Whitehead's challenge to 'make the possible probable' (Joan Whitehead 2003) and I am answering that as a professional I want to take and create opportunities in order to influence the future.

I referred earlier to Fullan and Hargreaves' (1992) claim that a collaborative school is dependent on the head. Despite this claim, I contend that substantial enclaves of collaboration can be formed within schools without the support of the head; that collaborative work can be supported through the agency of individuals despite the cited research. In some environments, previously marginalized people have been empowered to take responsibility for themselves and for others and in doing this have changed their life situations. It is possible to resist the temptation of giving in, and remaining silent, and to struggle to overcome the obstacles in the interests of the children. In this chapter I have detailed how I, in collaboration with others, undertook this work through various activities involving students and teachers. Many of these activities were in the form of specific projects. These projects gave the students and teachers the opportunity, while using ICT, to transform their knowledge creating capacity and to contribute something unique to human

experience (Arendt 1958). They did this while demonstrating their personal knowledge by taking voice and making their work public.

The accounts I provided within my thesis are based within my personal theory of practice. To conclude this chapter I will give some indication of how this relates to traditional forms of theory.

Theorising my Practice

Propositional logic grounded in traditional Aristotelian logic, includes the law of the excluded middle; it is not possible to have contradictory elements. Propositional forms of practice tend to take didactic forms of delivery in teaching. Propositional forms of thinking which see the self and the rest of creation as separate can give rise to the idea of a logic of domination (Marcuse 1964). The accounts I have given illustrate how my practice is not grounded in propositional logic but in living forms which are inclusional and so accept and welcome contradiction and give rise to living forms of practice which value the other. Unpredictability can be a feature of learning. My classroom is a place where the unexpected occurs. In the case of the equipment manager a form of containment was turned into a form of emancipation. The processes of learning are not linear. When you set out to do one thing it may have an entirely different consequence than expected, so the notion of cause and effect disappears. Rather than pursuing the traditional elements of positivist thinking which move towards closure, these processes move toward opening out. Within such processes I move from being an authoritarian figure to being a collaborative worker with the ability to deal with ambiguity and the humility to listen to others' points of view. So I, as teacher, work co-operatively with the students rather than impositionally. There's a fundamental change in the relationship between teacher and students. The community of practice (Wenger 1998) works in a number of different ways and possibly differently to Wenger's idea. Wenger's idea is that people who have a similar practice, perhaps in different locations, have commonalities in their practice which, if they share, open up the possibilities for them all. Troubleshooting our practice through dialogue can be a case of co-producing a story. Story-telling can be the basis of learning. This has resonances of Habermas's (1975) theory of communicative action.

Brown and Duguid (2000: 91-110) talk about the photocopier maintenance engineer who is fixing the photocopier and finds the particular problem he is facing is not in the manual.

The engineers eventually solve the problem by ringing each other and talking about various photocopiers that they have fixed. Their troubleshooting is co-producing a story and the story provides a solution to the problem. While I accept the idea of people from similar backgrounds forming communities of practice I think that there is a more general version of the community of practice that enables people from diverse backgrounds to co-produce a story and learn from the process. You do not need to be a photocopier engineer talking about photocopiers to come up with a solution to a photocopier problem. This idea arises from the web of connection that suggests that things which are apparently unrelated nonetheless inform each other. Things that happen in school between 9am and 4pm are not isolated and are not separated from what goes on elsewhere. You may discover things from digging the garden that relate back to school. All forms of practice can inform other forms of practice. This is a significant argument for including research in school and research in the NCVA in the one thesis. Fundamental difficulties that occur in both locations are influenced by the same practices. What I have learned from working in NCVA transferred to school and what I learned in school transferred to NCVA. The web of connection is more complex than this but relating the two locations provide a flavour of the interconnection.

Part of the interconnection is the interconnection between theory and practice. In the thesis I am showing my theory as practice and practice as theory. My practice is not just the activity that takes place in my classroom. My practice is an extremely complex phenomenon that I can explain in terms of my living theory. Within this account I am showing you how I theorise my practice in terms of what I am doing, what I am thinking, the literatures and important concepts. I agree with Wheatley when she says:

> All living systems are webs of relations spun into existence as individuals realize that there is more benefit available to them if they create relationships than if they stay locked in narrow boundaries of self-interest. Unending processes of collaboration and symbiosis characterize life. These relationships of mutual benefit lead to the creation of systems that are more supportive and protective of individuals than if they had tried to live alone. It's important to remember that nothing living lives alone. Life always and only organizes as systems of interdependency.

<div align="right">(Wheatley 1999)</div>

I now explain how I test the validity of my claims to educational responsibility and influence, as I encourage people and myself to show how we hold ourselves accountable for what we are doing.