

Action research in a dynamic context : problems and possibilities

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I think it would be fair to say that I come here today as a passionate advocate of Action Research. It has provided me with the means whereby, over the years, I have researched and developed my practice as a teacher, first in inner city primary schools and, more recently, in higher education.

My own very positive experiences of engaging in action research as a way of developing my own teaching led me, in turn, to explore ways of supporting students in using an action research approach to their own professional development (e.g. Green 1997). Over the years, this involvement has developed along two distinct routes.

In the initial teacher education course for primary students we have developed a final year module where students use an action research approach to developing some aspect of their practice. They undertake this in the term after final teaching practice, when they are free from the anxieties of assessment, and go back the same classroom in order to develop an aspect of their practice which they regarded as 'problematic' during that final teaching practice.

In addition, I have spent several years teaching the dissertation modules of the part-time, In-Service 'M.A. in Action Research' which has been taken by practising teachers in primary and secondary schools as well as lecturers in further and higher education. Again, the focus is on the development of personal practice whether in a classroom context or in a staff development role.

In talking to you about action research, I intend to draw on many of my personal experiences. This comes, not from a feeling of self-indulgence, but from a strong commitment to personal ways of knowing. The most powerful things I have learned as a teacher have been firmly rooted in the particulars of my own practice and in the lived experience of the individual children and students with whom I have worked.

I do not, however, accept with enthusiasm everything that is produced under the umbrella title of action research. It seems to me that the term 'action research' can be misused, sometimes as if it applied to almost any research that involves some action in schools and at other times as if it was a purely technical approach to the improvement of practice, a research 'recipe' to be slavishly followed, all too often instigated by outside 'facilitators' with the passive acceptance rather than the critical involvement of the practitioners themselves.

For me, action research is about researching my practice in the everyday messy world of the classroom. It involves trying to make sense of my practice by looking

beneath the surface to see what really is going on and considering what I could do to improve things. This immediately raises two questions

- * How do I know what's going on?' and
- * What do I mean by improvement?

I take both of these questions to be deeply problematic and will return to them later.

The nature of all teaching is extremely complex and what is required of the practitioner involves sound professional judgement rather than the display of simple competencies. Complexity lies at the heart of each one of the hundreds of decisions that teachers make each day of their lives. It is present in every one of our classroom interactions. At any one time I may need to decide:

Shall I talk to the whole class/to a group / to that particular child
How shall I respond to a particular child's comment?
How do I interpret that child's comment or behaviour?

There is an infinite number of choices to be made during these numerous interactions.

Through engagement in action research you are encouraged to collect the rich description of classroom events and to replay each incident rather like the freeze framing of a film. This allows you to re-consider how you responded at the time, to explore what this tells you about your values and intentions, to check whether these are indeed the values you hold and to consider some of the alternative courses of action you could have taken.

Of course, audio and video tapes can provide a rich source of evidence. I am always surprised by aspects of my own practice whenever I record myself teaching and have found that my students invariably feel the same. The unheard comment from one particular child, the analysis that shows how some children were ignored, the negative nature of the teacher's comments - the list is endless. The most revealing insights of all come when all the participants are engaged in the analysis. For example, in my experience, nothing transforms group interaction more than the active involvement of all participants in the research process.

With reference to the action research literature, I have a strong personal commitment to the 'critical action research' paradigm. In my view, the fundamentals of action research involve

- * the questioning of assumptions
- * the clarification of values
- * the discovery of the mismatches between espoused values and practice
- * the understanding of the wider social context in which I work

The roots of action research are generally regarded as being found in the work of Kurt Lewin who is credited with having coined the phrase 'action research'. His descriptions of the process involve the terms 'planning', 'fact-finding' and 'execution'. Having for so long thought of him as the founder of action research, I must confess to

having been somewhat disappointed and even alarmed when I found him illustrating his ideas about the execution of action steps and reconnaissance with examples of the wartime bombing of Germany. Maybe this shows how far action research has moved in that I cannot relate to it as a methodological 'recipe' for the efficient execution of just any chosen action.

And here, I suppose, I make my first strong links with the area of Design and Technology for no doubt you would not want children to embark on designing and making just anything. The values dimension is clear to see. Presumably, someone could design an instrument of torture which showed appropriate use of materials and which 'worked' in terms of administering a particular form of torture effectively and efficiently (and no doubt somewhere in the world someone is doing precisely this as we speak). Hardly something we would call educational.

In the 70's the 'teachers as researchers' movement grew out of Lawrence Stenhouse's ground breaking work on the Humanities Curriculum Project (1968) where teachers were involved in developing ideas from their own classroom practice as they tried to implement a humanities curriculum based on participation of pupils with teachers taking the role of a neutral chair. Stenhouse talks of how, throughout the projects described,

"The teacher urges the pupil to learn in the way the teacher learns rather than to know what the teacher knows. This is the basis of discovery - and inquiry - based teaching." (Stenhouse 1980 p 250)

For me, this makes many connections with the way I try to teach student teachers. I want my student teachers to learn about the way in which I learn about classrooms rather than merely learning about what I have learned from those classrooms. It is, I believe, insight about the nature of teacher professional judgement that they need rather more than merely seeing examples of 'good' practice. The current vogue for students spending more and more time in school will, in my view, only prove successful if students are given access, not just to expert practitioners' practice through classroom observation, but to the complicated thinking that underlies that practice.

Adleman (1993) claimed that the most difficult phase of action research involved the initial identification of a teaching issue. This claim seems to be based on the assumption that, like traditional forms of research, action research will start with a clearly defined issue. In my view, the nature of action research makes this extremely problematic and this requirement could act as an unfortunate pressure on practitioners to find a fairly straightforward or tightly focused issue at the start of their work.

Indeed, the requirement to outline a clearly defined research focus at the start of a project caused particular problems when I was filling out the initial Ph.D. registration forms at my own university and my conversations with other action researchers leads me to believe that this may be the root of the problem experienced by many action researchers in having their work accepted by research degrees committees.

My experience of working with students has shown me that one of the prime benefits of engaging in action research is that the action research process itself acts as a means of clarifying the research issue. Indeed, in this sense, I think that action research shares much common ground with what might be termed 'practical philosophy' in that it involves developing better questions. The issue practitioners believe to be at the heart of their work at the outset of their research may well be radically different from the one they work on in the later stages. This is not to say that practitioners ought to spend longer clarifying the issue at the outset but that one of the significant outcomes of action research is the clarification of the research issue itself.

Let me give you an example which focuses on the way in which classroom 'problems' can be unpacked and explored in greater depth so as to move beyond the simplistic 'problem solving' approach.

I have noticed that when students are under the pressure of an assessed teaching practice, there is a tendency to see classroom problems as organisational issues that can all too easily be seen as 'solved' when the presenting 'problem' ceases to exist. This can so easily result in an over-emphasis on 'solving' problems by reducing the potential for disruption rather than by increasing the potential for learning. The perceived pressure to keep order can so easily result in a failure to examine 'problems' beyond a rather superficial, surface level.

For example, one student came along to the first tutorial having identified, through his reflection on his final teaching practice, the 'problem' of constantly having to cope with a queue of children needing his help. He began with a view that the issue was about classroom management. It was as if the queue of children was a bit of an irritant and he needed to do something to get rid of it.

However, during the development of his project his view of the central focus of his work shifted quite dramatically. In exploring the 'problem' of what to do about the queue he began by examining why children were in the queue.

He then used this evidence to ask himself some searching questions about his classroom practice.

- * Why did children need to come to him every time they couldn't spell a word?
- * Why were they continually coming to ask him if a piece of work was finished?
- * What did these and other questions say about his practice?

The big question that emerged was,

- * Why were the children so dependent on him?

He moved from trying to find organisational ways of 'getting rid of the queue' to, for instance, questioning why children were so lacking in any sense of engagement with their writing; why they always needed him to say when a piece of writing was finished; why they needed 'targets' in terms of how much they should write etc. This led him to a more detailed examination of his beliefs about children's writing and to an exploration of what it was about children's writing that he wanted to value. As he began to articulate these values he also reflected on his own experiences as a writer.

He spent some time carefully examining what was important for him in his own approach to writing and made connections with what he was doing in the classroom to support children's writing. He talked of wanting

"to show children what it is to be an adult writer... that they don't have to get it right first time... that they'll undergo a number of drafts, notes, thinking out loud etc

This can be a particular problem in any practical subject where, too often, children see us as teachers getting things right rather more than they see us modelling the actual design process, for example, with all its false starts, blind alleys and frustrations. This is certainly the case in mathematics where teachers so often resort to merely showing children how to do things correctly rather than giving them the sort of role model that will help them recognise that being prepared to experiment, to make mistakes, to persevere, and to recognise when an approach is not working are all hallmarks of the most able mathematicians.

The example I have just given you of one student's project shows the importance of trying to dig beneath the surface features of any presenting problem in order to tease out the educational issues. He started with a problem about queuing which was firmly located in his practice. I would argue that it is the action research process itself that acts as a means of clarifying and redefining the issue. An action research approach that looks beyond mere 'problem solving' seems crucial in this regard. If he had stayed with the initial problem he could have instigated a variety of measures merely to 'get rid of the queue'. He could have banned movement about the classroom, instigated a 'no more than three in the queue' rule or given them an unchallenging worksheet that would keep them happily occupied and in their places. (Indeed, I would argue that many primary maths schemes are more about keeping children happily occupied than about teaching them any mathematics.) Instead, this student looked beyond the presenting problem in order to tackle the broader educational issues.

As Altrichter and Posch (1989) have argued, teaching 'problems' themselves are identified as a result of particular ideologies and social frames and these need to be explored rather than treated as unproblematic. Kincheloe (1991) argues that researchers need

"to explore the origins of problems, the assumptions which move us to define some situations as problems and others as not problems, or the source of authority which guides us in our formulation of criteria for judging which problems merit our research time." (p 117)

This is an important area of research practice that receives very little attention in much traditional research writing.

Many years ago, on visiting a colleague's classroom on a number of occasions, I remarked that I had never witnessed one particular girl speaking to anyone. The teacher responded by saying

"Oh, she's not a problem! She just gets on with anything you give her."

What, I wondered, was his definition of a problem in relation to the development of speaking and listening skills within his classroom? For, the way we define what constitutes a teaching problem is crucial. For example, several years ago, my current institution tackled the 'problem' of female members of staff not making full contributions in discussions on major committees. The solution to the 'problem' was to set up a series of "Assertiveness training for women" courses. Why, I wonder, did it not even occur to anyone to put on "Listening skills courses for managers"?

In their influential work 'Becoming Critical' (1986), Carr and Kemmis talk about the two essential aims of all action research as being 'to *improve* and to *involve*'. They identify three dimensions of improvement within action research,

"firstly, the improvement of a *practice*; secondly, the improvement of the *understanding* of the practice by its practitioners; and thirdly, the improvement of the *situation* in which the practice takes place." (ibid p 165)

Carr and Kemmis question the purposes of educational research and, in a way that I imagine would resonate with much of your work in Design and Technology, they quote Gauthier's view that

"practical problems are problems about what to do their solution is only found in doing something" (Gauthier 1963 quoted in Carr and Kemmis 1986)

They further argue that

"the testing ground for educational research is not its theoretical sophistication or its ability to conform to criteria derived from the social sciences, but rather its capacity to resolve educational problems and improve educational practice." (Carr and Kemmis 1986 p 109)

I too believe that, above all else, action research involves people taking back some control over their professional lives in order that they may be in a position to transform their own lives and, in so doing, transform the lives of their pupils, students or clients. What makes action research so challenging and exciting for me is its ability to support me in re-claiming my sense of professionalism, in making decisions based on the evidence of my own eyes and ears and in having the confidence to work to my own agenda rather than being constantly tossed on the sea of other people's agendas. Within the current educational climate that is indeed a rare luxury.

For me, what action research is not about is what I would call minor cosmetic changes in practice designed merely to make teachers' lives easier - in the way that 'getting rid of the queue' would certainly have made that student's life easier. It is not about tinkering with practice, nor about a mechanistic and low level problem solving of the 'does it work' variety. If you are looking for simple solutions to all your teaching problems, DON'T do action research!

It seems to me that good action research, far from making teachers' lives easier, nearly always makes teachers' lives harder due to the need to cope with the increasing layers of complexity that are uncovered in the action research process. Action research is not a means of providing simple solutions to complex problems but much more a means of recognising and understanding the complexity of the day to day problems practitioners face.

Indeed, in a survey of newly qualified teachers it was reported with great alarm that 46% of NQTs felt they were 'inadequately prepared' for teaching. Well, I still feel inadequately prepared for teaching and I've been doing it for nearly 30 years. What worried me much more about that particular survey were the 54% who felt adequately prepared for teaching - now they have really got problems!

There have been many criticisms of action research over the years. Some are inclined to argue that it is rather low level research which is undertaken by practitioners who are not capable of using sophisticated research methods. Others argue that, in an attempt to gain academic respectability, people have tried to make it too theoretical thus distancing it from the very practitioners it was designed to support. I am not inclined toward either view. In my view, action research can be carried out with many levels of sophistication depending on its purposes and the needs and abilities of the practitioner concerned. But, in this regard, it is hardly any different from all other forms of research.

For, surely, the same can be said of, for instance, quantitative methods of inquiry. As a classroom practitioner I can use a simple quantitative approach to the collection and analysis of data in order to investigate, say, the proportion of boys and girls taking part in a class discussion. This can be carried out using very simple data collection techniques and may well lead to much thoughtful further reflection. At the other end of the scale, the quantitative analysis of something like national school examination results can involve extremely sophisticated data analysis techniques that would be beyond the scope of many practitioners and researchers - and, at times, seem even beyond the scope of some Chief H.M.I.s and Ministers.

The same is true for action research. It can support beginning teachers in developing their practice through the careful examination of just a few lines of transcript of a conversation with a child by involving them in the processes of clarifying their values, identifying the mismatches between those values and their practice and developing their practice so that it is more in tune with those declared personal values. It can also support experienced and insightful practitioners in developing their practice over a much longer timescale through a more rigorous critical examination, interpretation and development of their practice.

There are, of course, examples of weak action research displaying sloppy thinking often accompanied by a desire to change practice for the sake of change itself. But, likewise, there are examples of poor research in all other research traditions.

There has been a tendency in the action research literature, as with so much other educational research literature, to provide a variety of simple 'models' of the research process. Two of the most familiar of these are those by Elliott (1991) and Kemmis and McTaggart (1988). Whilst these models can be helpful in emphasising the

cyclical nature of action research, they can all too easily become self defeating if practitioners try to fit their work into this predetermined mould rather than recognising the very individual nature of their own endeavours. I have had experience of students coming to tutorials to ask whether something they have done constitutes an 'action step' or not. In my experience, action research never really progresses in neat cycles of action and reflection and whilst these models may have some value for someone starting out on the process they should be abandoned as soon as they become an unhelpful form of straightjacket.

Some action researchers are inclined to spend rather too long either fitting research into given models or creating an endless proliferation of new models when perhaps the time could be better spent examining the central issues of the particular project. Could it be that academic status is seen to lie more with those who invent a new model rather more than with those who merely subject their practice to critical scrutiny?

In my view it is rare for any practitioner to focus on just one issue as, more often than not, there are several competing strands impacting on a particular piece of practice. It is the identification and development of these interweaving strands, together with the ability to live with them in their various and complex stages of development that, I think, is the hallmark of a good action researcher.

Much of the action research literature offers advice on the range of possible data gathering techniques available to the action researcher (e.g. Winter 1989 pp 20-23, McNiff et al 1996 pp 71-103). Where there seems much less advice available is on the development of a rationale for choosing different forms of data gathering.

In my view, a particular characteristic of action research should be the articulation of a justification for the chosen forms of data gathering. Too many practitioners engaging in research rush off to collect data without giving enough attention to the justification for the data gathering techniques they intend to use. This can all too often result in the collection of mounting piles of data that throw little real light on the central issue.

Copious armfuls of data can act as a sort of 'comfort blanket' for researchers whereby simply having enough data is seen as a major sign of progress. Maybe that is why questionnaires are such a popular form of research methodology and why people so often rush to collect their data before subjecting their questionnaires to sufficient critical scrutiny.

Why action research?

I have always been attracted to forms of research which are fundamentally exploratory for the simple reason that they do not involve the predetermining of the central issues at the start of any inquiry. I deliberately choose not to begin any inquiry with preconceived notions of what the substantial issues are likely to be. I begin merely with an intuitive feeling that the exploration of this particular area of my practice will be both intellectually stimulating and educationally worthwhile.

I recognise that in many other areas of research, an early and clear definition of focus might be considered an essential starting point and one which should be grappled with in the early stages, well before any empirical work begins. However, action research does not fit this mould due to its essentially exploratory nature. I do not want to narrow the focus just so that I will have something more 'manageable' for research purposes.

In my view, teaching is a messy, complex activity with many inter-related strands. When looking at my practice and trying to understand it, I have always felt the need to keep the notion of 'wholeness' central to my thinking. I may want to 'zoom in' in order to examine some aspect of my practice in detail but I need to keep 'zooming out' in order to keep a check on the whole. It is not a question of whether I should look at the whole or the parts but more a question of how can I look at both. How can I come to a better understanding of the whole by trying to synthesise my understanding of the parts with my understanding of the whole?

For it would be all too easy in a teaching situation to focus on one narrow aspect of practice, to intervene in order to change that particular aspect of practice in some way and then to make claims about 'improved' practice that may not be borne out by an examination of the 'wholeness' of that practice.

An example, here, might help to illustrate my thinking .

This example comes from the popular and, to some extent, value free zone of 'on task' behaviour. I have read numerous studies over the years where a variety of intervention strategies are used in order to improve 'on task' behaviour. Before and after measurements are painstakingly taken and, if the 'on task' behaviour is seen to rise as a result of a particular intervention, the researcher seems content to make some fairly definite claims about 'improved practice'.

But is it really that straightforward?

Can we merely assume that an increase in 'on task' behaviour is always a sign of 'better' practice?

I talked earlier of being prepared to have assumptions challenged. Well, the assumption that is being made here is that improving on task behaviour leads to better practice. That, to me, is a huge assumption.

How could we possibly know without knowing something about the task itself and something about the nature of the possible 'off task' behaviour? I once watched a class of 5 year olds spend a session 'colouring-in' duplicated pictures of a dragon in red crayon because they were working on the theme of 'hot'. A week later they coloured in pictures of Jack Frost in blue because they were now 'doing' cold. The work seemed to involve almost no intellectual engagement of any kind. Indeed, I would argue that almost any 'off task' behaviour would have had a better chance of leading to something educationally worthwhile taking place than was inherent in this somewhat trivial 'on task' behaviour. Indeed, I would be prepared to argue that merely wandering around the classroom might have provided these children with more intellectual engagement!

We cannot, therefore, talk of education in relation to 'on task' behaviour without firstly clarifying what might be educational about the task. Reporting results of increased 'on task' behaviour without indicating anything about the task seems to me to be a saying something about changes in children's behaviour but not necessarily saying anything about their education. Indeed, it could be argued that by focusing on one aspect of practice - namely improving the rate of 'on task' behaviour - we may even be tempted to ensure this improvement by setting a task which is less educationally worthwhile, which requires less intellectual effort on the part of children but which may well lead to increased 'on task' behaviour.

This also raises the question as to whether there really is a simple correlation between time 'on task' and quality of learning? Maybe some of our students' apparent obsession with the provision of endless trivial worksheets while on school placement stems from their desire to see that 'on task' behaviour is kept at approved levels. And this trivialising can, of course, be just as much a part of a practical subject such as Design and Technology where children can be kept very busy and apparently 'on task' while engaging with ideas at a very low level.

Carson and Sumara (1997) have argued that

"Certainly the most profound disease in Western pedagogy is activism, or action for its own sake. Children in today's classrooms have virtually no time to simply dream, wait, think, ponder, or learn to be still."

This also raises the further problematic issue as to what might count as 'on task' behaviour. The following fictional account of two students, created from a variety of classroom experiences, may illustrate this point further. The example focuses on children's engagement with imaginative writing but I'll leave you to try and make connections with work in Design and Technology.

Two students are both observing a group of children engaged in a piece of imaginative writing when they both notice one child who, at regular intervals, just sits staring out of the window often for several minutes at a time.

One student, on noticing this behaviour, is concerned about the amount of time the child spends 'on task'. She thinks to herself that this child is obviously quite lazy and makes a mental note to herself to watch her carefully in the future. Her concern about the child's obvious 'laziness' leads her to observe her more closely in order to find out just how much time she wastes during the rest of the session.

She quickly designs a simple observational grid where she can record the amount of time spent 'off task' during the remainder of the session. She concludes that the child spent more time 'off task' than 'on task' during that session and writes this so-called 'neutral' observation into her school log.

On reflection later, she wonders whether a move to the other side of the classroom, away from the distractions of the world outside the window might help the child stay 'on task' or whether calling out the child's name each time she stares out of the window would help to prevent her from 'wasting time'.

The second student noted that the child looked very thoughtful when staring out of the window and that this seemed to be followed by bursts of energy and concentration in terms of the writing produced immediately after each one of these staring out of the window episodes. She, therefore, assumes that the staring out of the window is related to the need to think.

The second student also decided to look more carefully at what the child did during the rest of the session and made detailed descriptions of her behaviour for the rest of that time. She found that these 'staring out of the window' episodes were indeed related to thinking time as they were often followed by the introduction of some new line of thinking into her writing. She decided that it would be particularly important for her not to speak to the child either during, or immediately after, one of these staring episodes as they were clearly a time of productive contemplation.

In these two differing interpretations we can see how, by focusing on the surface features of the behaviour of these children we can concentrate our efforts on improving the 'on task' behaviour as defined by some simplistic definition of what counts as being 'on' and 'off' task. By broadening our gaze to take account of the whole picture and reflecting on the quality of education going on we allow ourselves to see things we might otherwise fail to see - things which challenge our views of what it means to be 'on task'.

I believe that those of us involved in teacher education at any level need to communicate better with our students about what we do look for when we go in to observe them in classrooms. If they believe that we are all merely concerned to see that all children are busy working they may well lower their sights, set plenty of boring worksheets and, in the process, keep children 'on' task but 'off' education.

In any claim to have improved educational practice we surely need to be able to say in what way the changed practice is more educationally worthwhile for the children / students we teach. This requires us to examine the educational context in its entirety and to look beyond any narrow behavioural focus in order to take account of all the effects of any of the changes we have introduced.

For me, another fundamental aspect of action research is its concern with context. It is always focused on the particular. Its generalisations come from understandings about the way a very particular context can be recognised and explored and about the nature of the professional judgements made in response to those explorations. It is this concern with the particular that also makes the study of self a legitimate area of concern in action research. How well I know myself and understand the ways in

which my personal biography come into play in the classroom will inevitably impact on how I understand myself as a teacher.

Neither should we expect the 'outcomes' of action research to emerge in the form of neat generalisations that can be applied across a variety of different classrooms because its whole rationale is based on the uniqueness of particular classrooms and the uniqueness of particular teachers, children and learning situations. Indeed, it is the recognition of the uniqueness of each learning situation that, I believe, lies at the heart of action research.

Some people react to the fact that action researchers seek to study the particular by relegating action research to a low status research activity for the very reason that it is not seeking grand generalisable truths. The question that arises here is

- What is it, then, that is transferable in action research studies?

Whilst action research does not attempt to produce results that are immediately transferable to other teaching situations, that does not mean that it can have no effect beyond its particular context. In my view, it is the understandings of the complexities of the particular situation and the recognition of the different ways in which the familiar can be interpreted that is the aspect that is so readily transferable to other situations.

Whenever I read good quality action research, I gain particular insights and confront particular issues that immediately raise questions about my own classroom practice. I am encouraged to see my own practice with new eyes and offered the possibility of developing new ways of working in my own particular context.

Indeed, I would want to argue that, in my own professional life, my practice has been influenced more by the reading of other practitioner's accounts of their very particular situations than it has by some of the more easily generalisable and larger scale educational research findings.

This is not meant in any way to debase the major findings of research projects such as large scale survey research. It is, of course, vital that we know, for example, how disadvantaged are the poor, the working class and the black pupils within our educational system. Yet, as an individual teacher these larger scale studies, while alerting me to the scale of the problem, give me little in the way of advice as to what I, as an individual teacher, can do about it in my particular classroom tomorrow morning. I cannot say "Will you please stop being poor". The findings of these studies require considered, long term solutions and strategic actions at all levels of government. In contrast, my reading of quality action research immediately raises issues about my own classroom practice, encourages me to see with new eyes and offers me new ways of working with individuals.

Early on in my career, I read a description of everyday practice in a Chinese nursery class and found my views about the central importance of independence were challenged. The Chinese nursery teachers gave a clear rationale for dressing all their children in a uniform that buttoned all the way down their backs. This was so that, when getting dressed, they would be forced to seek co-operation from their peers.

This small incident where a teacher had described the rationale for her actions gave me insights that encouraged me to question my own 'worship at the shrine of independence' - all this many years before I came across the work of Carol Gilligan (1992) who challenged traditional definitions of 'maturity' by emphasising the tensions between notions of autonomy and interdependence.

Clearly, there are issues raised here that impact upon wider current debates about the 'usefulness' of educational research as raised so strongly by David Hargreaves in his 1996 T.T.A. lecture and more recently by James Tooley's report on educational research together with the somewhat dubious interpretations of it given to the press by Chris Woodhead.

I turn now to the question

What supporting literature is 'relevant' in action research studies?

Having started out by saying that I do not want to pre-determine the issues or narrow the focus of my research prematurely, it is equally important that I do not adopt precisely this pre-determined type of approach in relation to defining the field of literature that might best inform my inquiry. And it is this notion of 'what might best inform the inquiry' that I see as problematic and, therefore, open to debate.

To me, it is the literature that has been most 'relevant' in terms of moving my inquiry forward that I want to report on - the literature that has really made a difference to my thinking. It is the literature that excites, that challenges that opens up new lines of thinking which is the literature I feel committed to reviewing.

- Where in the research report should the literature be presented?

If one of the strengths of action research is that it is fundamentally exploratory allowing the main issues to emerge slowly over time rather than focusing on predetermined issues, then this must have serious implications for the use of literature and the way in which it is presented within the body of any action research report. Surely, the literature needs to permeate the whole report rather than being predominantly bound within any kind of 'literature review'.

There are also important connections here with the ways in which I have encouraged students to locate and read the literature relevant to their inquiries. When they first choose a focus for their inquiry, they need to read literature that connects with that issue. But as the inquiry moves on and the focus shifts, they will need to identify new lines of reading that support their understanding of the new issues that are emerging. It is this constant shifting of focus as action researchers gain greater understanding of the issues impacting on their practice that makes identifying relevant literature at the outset of any inquiry hugely problematic.

- What does it really mean to actually locate the literature in which the study will be framed?

In using action research to develop my practice I am often searching for new ways of looking at the familiar. My everyday practice can become so routinised, so familiar that it becomes difficult for me to see it with new eyes. I often need to step outside it

and look from a different angle in order to gain fresh insights. Likewise with the literature : in order to find fresh ways of looking I need to step outside the familiar explanations, the familiar body of literature, and view my practice from a different perspective.

For example, I have found Paul Feyerabend's work 'Against Method : Outline of an anarchistic theory of knowledge' (1975) both imaginative and challenging. His view that theoretical anarchism is more likely to encourage progress than what he terms 'law-and-order alternatives' and that

"The only principle that does not inhibit progress is : anything goes"
(Feyerabend 1975 p 23)

are stimulating starting points for anyone grappling with issues of methodology, particularly where the research is exploratory. Feyerabend reminds us that most developments in science have occurred because people either decided not to be bound by obvious methodological rules or because they unwittingly broke them. Whilst scientific method has been very rule bound, the major leaps forward in science have been as the result of someone being prepared to go against the rules and challenge the orthodoxies of the day.

These ideas also linked with some of my reading of the feminist writer Gail Stenstad's work. In an article entitled 'Anarchic Thinking' she explores the notion of 'a theoretical feminist thinking', as being

"thinking which goes beyond conventional boundaries, deviates from expected goals and methods, and is not accounted for or predicted by any theory. This thinking will be, in a word, un-ruled or anarchic." (Stenstad 1988 p87)

She emphasises the need to distinguish anarchic thinking from merely sloppy or chaotic thinking and argues that the thing which keeps thinking moving on is 'unresolved tension'. In anarchic thinking the tensions are deliberately maintained and the tendency to try to settle for one explanation is resisted. She talks of

"Persistence in questioning, working and playing with ambiguities, being alert for the presence of the strange within the familiar....."(ibid p89)

I liked the emphasis she places on the way in which persistence in questioning is important as our responses engender further questions thus ensuring that our thinking remains in motion. For, she argues,

"To deliberately maintain fluidity in thinking is to resist the tendency to settle for one explanation, one voice." (ibid p89)

This line of thought connects with my beliefs about the nature of action research which seems to me to be more a constant process of asking further and more interesting questions about practice rather than some neat kind of 'problem-solving' process.

These ideas also connected, for me, with Lorraine Code's fascinating book "What Can She Know?: Feminist Theory and the Construction of Knowledge" (Code 1991) where, in discussing her view of knowledge as a social construct validated through critical dialogue, she defines the knower with reference to a view of subjectivity which is based on a 'personal relational' model.

In reflecting on my approach towards defining the field of literature and justifying those choices, it seems to me that the qualities of openness, the willingness to engage with the unfamiliar, the friendships across subject boundaries are all as important as the more systematic skills required for the traditional library search.

Teaching and learning in higher education

I turn now to the practice of teaching in higher education where I will raise some issues arising from my own engagement in action research which challenge some current orthodoxies, both in the conduct of research and in terms of what constitutes good practice in higher education.

Whilst I welcome the post-Dearing initiatives on teaching and learning in higher education as containing some exciting possibilities, I think it important that all such developments have the spirit of intellectual engagement rather than bureaucratic procedures at their heart.

I want to look, first, at the area of student evaluations. Some institutional evaluation systems consist of simplistic questionnaires whereby students are encouraged to rate particular lectures, seminars, modules or courses on some perfunctory scale.

On a scale of 1 - 10 how good was it for you? seems to be the question.

What do we learn from these sorts of evaluations? Does liking something always equate with learning? Do students sometimes like something because it was easy, because it required no effort on their part, because it was merely entertaining or because it left no unanswered questions?

Compare the two comments

"Excellent lecture. Lecturer gave us good clear points which were summarised on the OHP"

" This lecture has left me feeling really confused".

Is the first comment necessarily better than the second?

Could it be that a lecture which they say left them feeling unsure and confused about the issues results in them going off to the library to learn more?

What if my aim is to leave them more confused at the end than they were at the start?

Maybe I want them to understand that things are a lot more complicated than they seem to think and, anywaywho said learning was easy?

I sometimes hear people evaluating sessions merely by saying that the children or students liked it. Well, children like eating Smarties and watching cartoons and game shows, but what is the educational justification?

In teaching my primary mathematics education courses I became, over a period of time, increasingly dissatisfied with our institution's course evaluation procedures. Students were normally asked to provide written comments at the end of each course and this often resulted in the receipt of interesting responses and insights at a time when I felt relatively powerless to act upon them. I decided I would like to know more about individual student responses to my teaching while the course was still in progress so as to have the opportunity of responding to comments more immediately rather than merely 'noting' them at the end of the course.

In order to do this, each student was asked to keep a diary in which they recorded their personal responses to each of the sessions of an introductory mathematics education course. In asking students to keep diaries I wanted to allow individuals to write freely about any issue that concerned them. I wanted to find out from them what issues were of concern to them rather than asking them to respond to a predetermined set of issues which I had identified as important. I then analysed all the diaries after each session and used feedback from this analysis as the starting point for discussion in subsequent sessions.

This process encouraged much personal reflection on my part on issues within the course which relate to students' understanding of the nature of mathematics and mathematics teaching. The diaries provided me with a unique insight into student responses to my teaching and I found that my involvement in this research process was a major source of professional development. (see Green 1993)

I chose diaries as a means of gaining a better understanding of the students' perspective in relation to my teaching and, through this, a means of both evaluating and acting upon my evaluations. I thought it important to give every student the opportunity of responding to the course while it was in progress. But it was not merely an exercise in better evaluation procedures. At the heart of what I was doing lay the opportunity for me to act on the basis of those session by session evaluations.

By analysing student responses to each session in turn while the course was in progress I was able to share my new understandings with students at the start of each session and place their previous week's learning on the agenda for the next session. In this way I was able to make my own learning and decision making more transparent to the students I was teaching. They could see the way in which my teaching was always problematic for me, that my planning was a guide which was constantly open to modification and that, as students, they held the major key to me gaining new insights about my teaching.

It was, however, during my work on student diaries that an issue emerged that was to deeply affect my thinking on the analysis of qualitative data. This involved a consideration of those comments in the diary data that had most effect on my own

thinking. I remember clearly that the comment that had most effect on my thinking, both in terms of understanding the student perspective on my teaching and in terms of effecting the most radical change in my teaching, was a single comment made by a single student.

At the end of an introductory session on investigational maths, (which had generally been very well received by the students), she wrote :

Today provided me with an introduction to teaching maths by getting me to think in a mathematical way. It also gave me some ideas to use for myself in schools.

This seemed fairly positive but then she went on to conclude her brief remarks with the comment:

I didn't learn much, but this didn't matter.

Now this simple sentence actually provided me with more food for thought than anything else that I analysed. She had admitted that the session had got her 'to think in a mathematical way' which was certainly my intention. She had also acknowledged that she had gained 'ideas to use for myself in schools'. Why then, I wondered, did she so confidently assert that 'I didn't learn much'.

At a statistical level the comment could be viewed as insignificant as it relates to only one student and to only one instance of this issue. However, at a personal level it had a tremendous effect on my thinking. It raised the question : What was this student's view of learning? Perhaps she considered learning to involve gaining factual information, or learning the rules of maths or learning the 'correct' way to teach maths.

Whatever her conception of learning might have been, it certainly differed dramatically from mine. And yet, the course I was teaching at the time was focused on how children learn mathematics and on how student teachers understand the ways in which their own teaching actually does, or does not, promote children's learning. It seemed possible, then, that participants on a course which focused on learning did not actually share a common understanding of what is meant by learning. The outcome of my analysis of this one brief comment resulted in me using the comment (anonymously, as agreed) as a stimulus for a later group discussion on what we all meant by 'learning'. I realised that I could no longer assume a shared understanding of what is meant by learning.

Assessment

If we really want to understand the nature of assessment then we need to look at it in all its complexity. Most worthwhile learning is highly complex and difficult to assess. This is particularly true of areas where the focus on process is prevalent. There is always a danger that with our somewhat obsessive concern to legitimate our practice through assessment we will focus on what is easy to assess rather than what is worth assessing.

Whenever I teach a class of primary school children or undergraduate students I am struck by the fact that I can never really know what they are learning. I pick up clues by watching them, by listening to them, by questioning them and by analysing any tangible outcomes of the session. But these are only clues and I can never really know what any one of them is learning never mind what all of them have learned.

Our obsession with assessment on a session by session basis makes fundamental assumptions about the nature of learning; assumptions that are open to question. Do we assume that the learning all takes place during the session while we watch in ways that lend themselves to neat and finished observations and subsequent claims? We all know that it is much more problematic than that, so why do we continue to pretend that children and students will learn what we intend to teach, that they will learn it during each session as planned and that we will be in a position at the end of each session or module to say just what has been learned with a degree of confidence.

Clearly, if we want to know more about how our students are learning we should rely rather less on simplistic assessment procedures and rather more on tuning in to the complexity of the learning as it is taking place, tuning in to our own role in supporting that learning. It is the rich description of classroom events that can teach us so much about what is going on in front of us.

When I look at what we require student teachers to do by way of lesson plans and evaluations I am constantly struck by how difficult I would find this to do in relation to my own teaching. Indeed, I believe it would do many teacher educators good to spend a week planning and evaluating their own teaching sessions using the rubric that they demand from their own students.

- How clear are my own learning objectives for any particular session?
- Should my learning objectives be clear?
- Can I begin to say anything about the extent to which my learning objectives have been achieved for 35 children or students in my class other than at a fairly mundane level

Then there is the question of whether our students understand our assessment strategies. Sometimes they understand them only too well. I know of children at secondary schools who do their design backwards. They know that they need to show how they have improved on their initial designs and so when they have finished their design and completed their model they then produce a 'worse' version to keep their teachers happy. Likewise, after completing an English essay, children will go back and produce a rougher version so that they can show how they have re-drafted their work.

I recently attended a seminar on "Active Learning in Lectures" where I was told that research showed that students can only concentrate in lectures for an average of 20 minutes. The implication was clear. We should never lecture for more than 20 minutes before breaking up for paired or group discussion. What an extremely silly piece of research evidence! Are there not contextual issues here that need to be taken into account?

It may well be that students cannot cope with more than 20 minutes of detailed statistical analysis or the like. But the lecture that had most impact on my students this year was one where I spent over an hour telling them a range of stories about the everyday life experiences of individual children I had known. They sat spell-bound for over an hour and stopped me in the corridor to talk about it for several weeks afterwards. Trying to make generalised statements across sites of such huge contextual differences seems, to me, to be quite anti-intellectual.

Why talk of concentration as if it were some kind of fixed characteristic. When my students complain that their 5 year old children cannot concentrate for more than 10 minutes, I ask them to visit the 4 year olds in the nursery and check out the truth of this generalisation. It is through the close observation of children and students in everyday educational situations that practitioners will be encouraged to ask searching questions that lead to a much deeper understanding of what is happening in their own classrooms.

Over the years, I have come to understand the way in which, by unpacking the values dimension of their teaching in particular incidents of actual practice, students have been able not only to articulate their own values more clearly but to find specific ways in which those values can be lived out in their practice. It has been the location of the exploration of values in the particular that has been the key to the development of a more consistently values based approach to their own teaching.

Let me illustrate this point with just one final example. This example shows the way in which one tiny incident from practice can be used as the basis for significant development of that practice as well as for a wider articulation of a student's personal philosophy of teaching. The claim I am making is that by starting from any scrap of practice it is possible to ask questions and explore it in a way that illuminates much wider understandings of practice and in a way that is accessible to students. I begin with a brief account of one particular starting incident.

I was visiting the classroom of a student on final teaching practice. The children were of reception age. I sat beside a group making clay models while I tried to read through the student's file. The student was responsible for the whole class and was adopting a 'butterfly' approach to supervision as she flitted from one group to another checking on progress and responding to 'problems'.

As I sat alongside this particular group, one particular 5 year old girl let's call her Jody - was engrossed in making a detailed model of herself in bed. She gave a running commentary as she described how 'snugly and warm' she felt and then took great care over the design of a floral print on the quilt that lay over her.

Some time later the student popped over to see how they were getting on. She looked at this child's clay model and said "Oh that's lovely! I do like his shirt"

Jody looked a bit puzzled but didn't protest at this re-interpretation of her work. From an outside perspective I could see how someone might think

the model was of a man with a beautiful shirt on and I was left wondering whether these children were used to teachers misinterpreting their work.

Little did I know then how that one little sentence "I do like his shirt" would lead to so much professional development on the part of the student.

After the session, I talked to the student and described the conversation Jody was having as she made her model. The student (who interestingly, was a creative arts student) was horrified by her own misinterpretation.

We discussed a range of issues

- how did she know what the child's intentions were
- what other responses could she have made
- to what extent did she need to pass judgement on the model
- who is the expert on this model?
- how could she find out more from the child

We talked about her own work as a creative arts student and what sort of responses she wanted from her tutors

How she would react if after spending a fortnight on a painting someone came and said "That's lovely"

She talked about how she would want a personal response to her work, that she wanted someone who'd be genuinely interested in what she was trying to do

After teaching practice, the student developed her action research project from this tiny incident. She explored and articulated her personal values, first in relation to teaching creative arts and then to wider aspects of her practice. She did this entirely by looking in detail at the responses she made to individual children when they showed her their work. For each response she tried to articulate the values that were implicit in that particular response and then to consider alternative responses that might have been more in tune with her stated values. The project raised interesting issues about the nature of teacher judgements and the problematic nature of assessment. All this came from the close examination of that first tiny incident - an incident that could so easily have gone unnoticed.

That particular student will not be looking for another Jody to 'do the same to', but she will take with her to hundreds of other children, her increased sensitivity to children as individuals struggling to make their own meanings and communicate them to a wider world.

I believe that students need more than skills training for, as Smith (1992) has argued, they are entitled to educational theory in their initial training,

"an entitlement in that the trainee has a right to be given sufficient opportunity to develop understanding, the critical acumen and the habit of reflection without which professional life risks being a constant source of

bewilderment and dismay, and to discover the sense of excitement which, quite apart from anything else, provides pupils with teachers who are living evidence of the worthwhileness of education."

(ibid p 397)

Time and again, the feedback I have received from students is that a major spur for their own development has been having their own ideas taken seriously and having the starting point for that development rooted in their own particular practice as teachers. When students come for tutorials we discuss particular incidents from their own practice. Their own ideas about teaching in general are rooted there and, by discussing those personal incidents in depth, I believe they experience a feeling of being listened to and taken seriously as developing practitioners. When they choose particular pieces of data - either from the evidence base of their teaching or from their personal journals - to form the agenda for our discussions, I witness a real sense of their feeling of power as autonomous learners.

Finally, I have learned at first hand that when I explore one aspect of my practice with commitment and enthusiasm I enter an ever growing world of intellectual challenge and excitement which inevitably affects all other aspects of my practice. It is the strong conviction that this is the case which makes my continuing practice as a supervisor both continually worthwhile and forever problematic.

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