Achieving Clarity: principle to practice. The Difference Reflection Makes in Implementing a Policy for Information Technology in a Primary School

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ABSTRACT This article considers two pivotal issues in school development: first, the epistemological foundations by which a curriculum area is generally held to be constructed, and how this knowledge base can be accepted or reconstructed by individual interpretation. Secondly, the paradigm, and therefore the methodology, by which change agents represent their understanding of curriculum areas to those participants of curriculum change. The article has an unusual structure, as it is written in two separate sections. The first section relates in a simple narrative style the actions the author undertook in her role as a coordinator for information technology, seeking change in classroom practice within a large primary school (ages 5-11 years) in a London suburb. It is told retrospectively, for the author then undertook a period of study and reflection which led her to reconsider both her understanding and the method by which she introduced change. Hence, the second section, written at the end of this period of reflection, enters the realm of ‘paradigm shift’ in that it examines the author’s past rationale, her actions and the consequent results within her new epistemological and ontological understanding. Essentially, she deconstructs her actions and reconstructs them as ‘what-should-have-happened!’ The implicit tenet is that her actions did not lead to the change she sought because she did not have clarity in understanding or direction, hence the article’s title: ‘Achieving Clarity ... The Difference Reflection Makes ...’. The axiom of her revised understanding is that enduring and profound change cannot occur without the change agent having this clarity of understanding, which can achieve consistency between principle and practice with both rigour and credibility. At least, that’s the first step, for innovation is never that simple; it’s a long process.
Part One

School Development in Information Technology

Although not statutory, it is accepted good practice in education throughout the United Kingdom (UK) for a school to move forward with a School Development Plan. Each plan can span between 3 and 5 years. It outlines the specific curriculum areas or issues that have been identified as in need of development by management and, on occasion, other personnel.

In my school, the main focus on a specific area usually spanned 6 months to a year, after which the focus changed to another area. I became the school’s Information Technology (IT) Coordinator shortly before IT entered its allocated time as a focus for development. This meant I was responsible for auditing the situation, managing all resources, both old and new, and coordinating staff development, as well as reviewing and reporting to management.

I was the coordinator by default rather than design. The previous coordinator had left and all other members of staff had taken one step back, leaving me as the bemused volunteer. I was neither the involved-in-computers expert nor the nervous technophobe. I thought of myself as the ‘enfant sauvage’ of computers, although in truth I was not the blank page I had presumed myself to be as I shall expand later.

I examined the school’s present situation, including the resources, the use of computers, and staff approaches to IT. It was somewhat overwhelming as computers appeared to have a minimal and peripheral place in the school’s curriculum and most current practice did not address the UK National Curriculum for IT. The dominant model of practice seemed to consist of using the computer for simple maths or language programmes that were unrelated to the class curriculum. This use was irregular and often only occurred if the children had finished their other work.

For guidance I turned to the Local Education Authority (LEA) advisory teacher for IT and read the IT Non-Statutory Guidance in the National Curriculum Document (Department for Education and Science, 1990). I understood from this input that my task was to move the school’s IT practice into a central place in the curriculum so that it could be used as a resource in other areas. It could be applied in the classroom and the implications of its effect on children’s learning evaluated. This, however, was as far as my reflection went, for I did not consider the methodology by which I might do this task.

I wrote a policy and presented it to the staff. It was a comprehensive document, containing practicalities such as lists of software and their possible uses and lists of expected capabilities for Key Stage One and Key Stage Two (i.e. infant, 5 to 7 years, and junior, 7 to 11 years). The staff were impressed with my increased technical knowledge and there appeared to be
no disagreement with the policy. The consensus was that this policy would be helpful in structuring practice.

At that time, the school received a number of computers from money the LEA had set aside for IT, which meant that each class could have a computer. My perception was that the new computers, combined with the acceptance of my policy document, would herald a profound change in IT practice for the whole school.

The computers were installed and I began a programme of support. From each year group’s curriculum map, I found opportunities to fit in IT capability as a resource in other curriculum areas. I focused mainly on word processing, art programs and some data handling, as I felt most comfortable in using these programs and I believed this also to be true of the majority of staff.

I worked at an intuitive level in reassuring teachers of the ease of using these programs, often making a few pupils within the group the technical experts. While acknowledging the apprehension with which a significant number of staff viewed computers, my maxim was: ‘make it easy and seamless’.

After several months, I became aware that although the software I had introduced was generally being used, nothing occurred beyond that and, more importantly as then I realised, there was little understanding of the IT policy or relating to it, which meant no continuity or progression at a school level.

What was needed, I thought, was more guidance and more precise information, and I set about writing a scheme of work for IT. My rationale here was that more technical understanding, and hence understanding of use, was needed to facilitate progression. It was structured around an existing curriculum map for other curriculum areas, therefore continuing the maxim of being seamless. On introducing the scheme to the teachers it was once again greeted with approval and with ‘how helpful this will be’.

It was one of my last tasks as IT coordinator, as my workload in other areas increased. The subsequent coordinator was also a coordinator for maths and IT became less of a focus, particularly as its allotted time in the School Development Plan was finished, which meant an end to in-service training time and further resourcing.

It was interesting to observe what happened after this withdrawal of impetus and support. The use of IT had increased, mostly in using word processing, and with some data handling packages I had introduced still in use. On closer examination, however, word processors were most commonly used for producing best copies of work from a hand-written text, and there was little opportunity for creating text on the computer or editing it. In data handling, pupils were able to enter information onto pre-prepared fields but had little opportunities to interrogate or analyse the data.
However, there was one area where a change in practice did appear to have occurred in a more profound way and this was in many of the infant classrooms where the children used the concept keyboard (a touch pad that replaces the QUERTY keyboard), which had never previously been used and which was now in constant use. Teachers found the children could operate programs with a high level of independence and also found the software I had supplied particularly appropriate and successful with the children.

I too had become interested in using computers in wider contexts that were meaningful to the children and had used an open-ended program called ‘Touch Explorer’ to create overlays that could be used in the role-play area of classrooms. For example, an overlay, ‘Café’, was used to print bills for the ‘customers’, with a secondary mathematical focus on introducing multiplication. Another overlay, ‘Travel’, was using to print tickets for a ‘Travel Agents’ with a secondary geographic focus on introducing a world map (see Figures 1 and 2).

The success of introducing concept keyboards was, I believed, also down to my commitment and enthusiasm, which led to a higher level of support that occurred at a number of different levels.

During this period of IT development, I acquired a somewhat philosophical approach to the limited effects of my actions. After all, the effects appeared to be consistent with the pattern that other innovations had followed. At an unconscious level, I accepted the inevitability of innovation failure. It was only in retrospect, with the opportunity of reflection, that I began to analyse the cause and effect.
Part Two

This section summarises my theoretical knowledge and reflections in two distinct areas:
- Models of staff development and change.
- Curriculum development in IT.

These are, of course, retrospective reflections, for, after outlining my understanding for each area I examine my previous actions as the unsuccessful change agent!

Having established a greater clarity in my rationale, I can now at least set off in the right direction along ‘Innovation Road’. However, my conclusion shows that I am only just beginning and have some distance to go before I reach certainty.

Staff Development

Hargreaves & Fullan (1992) identified three models, which they called:
- Teacher development as knowledge and skill development;
- Teacher development as self-understanding;
- Teacher development as ecological change.
It is clear that these models have differing epistemological foundations which have profound implications for practice. In relating the models to my actions during the IT development, I will first give a summative analysis of my understanding.

Knowledge and Skill Development. The epistemological assumption of this model is that there is a body of knowledge that is universal, or an ‘external landscape’. This understanding is structured by the scientific/existential paradigm where the body of knowledge may change as more knowledge is discovered, but this body has a commonality in understanding and use. Applied to teacher development, the model presumes the teacher to require only more knowledge or greater expertise. Thus, the teacher becomes the deficit and only a receiver, while the ‘giver’, i.e. the holder of new knowledge, finds external validity through the validated certainty of expertise through research. Change is an event, that is, the filling or ‘depositing’ (Freire, 1972) of the required knowledge into the passive vessel.

Self-Understanding. This model presumes teachers to be active participants in change, which is a process of evaluation and reflection. Knowledge is more complex than a commonly held body of certainty. It is probably best illustrated by Stenhouse’s profound definition (1983): ‘the partial perspectives which give us a purchase on the limitless universe of experience and hence the possibility of our understanding ...’ (p. 187).

Individual knowledge, then, is constructed from individual understanding and is defined by all that has not been experienced and is not known, as much as that which is known. Hence the model’s epistemological foundation is phenomenological, in so far as knowledge is individually constructed.

The complexity of professional development is realised in areas outside of education, for example among business gurus such as Handy (1994), who states that involvement in and evolution of change by all participants is necessary for success. Here, this paradigm of professional development is used implicitly.

In understanding this paradigm, it is necessary to recognise not only the educational context but also the whole of teachers’ experience, i.e. their whole life experience. Indeed, Biott (1991) finds that the classroom is a recreation of each teacher’s own interpretation of the world, based on personal beliefs and values. Change will therefore be involved in these values, which Nias (1989, quoted in Biott & Nias, 1992) has described as a form of grieving or a loss of sense of self. This has obvious and profound implications for the methodology of innovation.

Development as Ecological Change. Hargreaves & Fullan (1992) described this model as the context for self-understanding. Essentially, they found that individual change is successful within an environment that is sensible to reflection. This context could be viewed as the function of the leadership for the change agent.
Examination of the Case

I shall now turn, somewhat uncomfortably, to examining my own actions in the contexts of these paradigms, for it appears that I played the ‘mythical hero innovator’ (Easen, 1985) to the hilt! With enthusiastic determination, I was imposing change, as greater knowledge, on the overwhelmed teachers. The assumption that underpinned my methodology was that change would occur as an event without negotiation or participation. Interestingly, I persevered with this methodology when writing a scheme of work, even though I intuitively recognised that this would result in minimal change.

In reflecting upon why this occurred, I now believe that I simply accepted this dominant ‘knowledge and skills’ model at an unconscious level as the only methodology. Hargreaves & Fullan (1992) find that this model of innovation has dominated teacher development in the UK over recent years in the ‘assertion of political preference and bureaucratic mandates’, i.e. it seeks rationality and hence validity through legislation. This has created what Apple (1979) defines as societal saturation of understanding that takes place at a level deeper than opinion; rather it becomes the structure of ‘reality’.

This model is implemented through a considerable infrastructure; for example, the National Council for Educational Technology (NCET, now the British Educational Communications and Technology agency [BECTa]), is ‘the body established by Government to be the national focus of expertise for technology in learning’ (NCET, 1995c, p. 2) and publishes research findings and materials for use in school and in staff development. In examining their catalogue, it would difficult to find reference to development through understanding. Rather, it refers to development through capability, using words such as ‘crammed with ideas’, ‘practical advice’, ‘how to’, and ‘guidelines’ (NCET, 1995a, p. 5). NCET, in advising schools ‘moving forward’ with IT, states that in-service training needs are: ‘to audit the skills and competencies available. Identify where teacher IT expertise is required’ (NCET, 1995b, p. 7). Essentially, it sets the coordinators and LEA advisors firmly on the main highway of knowledge and skills development, committed, with subconscious complicity, to depositing ‘greater’ capability within the deficit teachers.

Of course, stepping off this main highway is no easy task. Indeed, the more I reflect, through practice, upon this alternative route, the more I understand how tempting this destination-certain, smooth-surfaced and straight highway is. The one thing that the change agent must keep in mind is: will there be anyone with you on arrival at the predetermined destination? The alternative route of development, through self-understanding, could be metaphorically compared to using the B-roads, that follow the lie of the land and the bends of the rivers and have many
ways to the same destination. New knowledge must be re-created within the structure of individual understanding. Change agents must have clarity about their own understanding and be aware of their entrenchment in the hegemonic and unconscious paradigm, in order to create the ecological context which is a prerequisite for profound change.

Curriculum Development in IT

It was indeed my reflections on how I personally construct knowledge in the context of IT that brought me to consider the theory and management of curriculum development. Barrow (1984) exhorts us to ‘think of actual influences on curriculum as constraints on past and present practice that need to be understood, very often in order to be challenged. This will help us appreciate that much of what is going on is a product of circumstance rather than reason’ (p. 17).

Accepting this direction, I considered the circumstances of IT development. The growth of technology has been a phenomena in many societal contexts. New developments and accompanying changes have been seen as unquestionably good. It is marketed as being the future: ‘there will be a lot more information technology around in the year 2000 and successful people will be those who understand it and know how to use it’ (NCET, 1995c).

Rowntree (1982) views technology as ‘ethically neutral’, in that it can be used as a tool of any ideology, and encourages us to know it as least as well as those who may misapply it. However, to apply technology, we must have clarity in our reasons for its application. Self (1985) finds there are strands in the rationale of a curriculum which fit neatly into a framework for IT. These are:

- the needs of the individual, i.e. enhanced learning through IT;
- the needs of society, i.e. IT capability and awareness.

It would appear that much of the National Curriculum for IT is structured by the needs of society, interpreted as ‘capability’, for example the Level Describers which describe ascending achievement levels for the National Curriculum have the title ‘Information Technology Capability’ (Department for Education, 1995). It seems curious that the National Curriculum focuses on capability as the axiom of IT knowledge, given the extraordinary pace of change in this area of knowledge. Our pupils will have perfected keyboard skills, just as the voice-controlled computer may become mass marketed. It is no wonder that teachers can feel overwhelmed when focusing on capability. They become de-skilled, even as they strive to become skilled.

Yet, in analysing my focus for IT, as a teacher, I found I viewed it as a tool in assisting learning. This focus also structured my support work with teachers, not in simply making IT use seamless, but in demonstrating ways to facilitate learning. However, my policy and scheme of work was disparate
from this focus, as the teachers’ axiom was IT capability. Perhaps this delivery of confused disparity was as much to blame in the failure of this school development, as the use of the ‘knowledge and skills’ paradigm of staff development was.

This understanding may be confirmed by considering the area which was more successful in changing the use of IT, that is, using the concept keyboard in infant classes. At the time that I gave support for the use of these keyboards, I was beginning to clarify my own understanding of IT. I had become more reflective of IT within not only an educational context but in a societal context and to accept Rowntree’s maxim (1982) that we must be aware of IT usage to avoid its misapplication. I had perhaps grasped NCET’s warning that IT capability was pivotal to an individual’s future success. I began to understand the implications of lack of IT awareness and the possibility that this ‘ethically neutral’ technology, superimposed as it is on the political infrastructure of the free-market economy, will result in a ‘new form of apartheid’: those who use the superhighway and those who are ignored by it (Channel 4, 1995).

My clarity created real understanding and hence meaning for me and therefore I was able to ‘represent to learners through social interaction with them meanings about knowledge’ (Stenhouse, 1983, p. 189). The learners here were both the teachers I supported and the pupils I created overlays for when using the keyboard.

In creating their role, curriculum coordinators must achieve this clarity of understanding in their curriculum area. It is insufficient to accept the National Curriculum orders and to believe that these can accurately be reflected, for we construct an area of knowledge from our own understanding. We can never be blank pages; our pages are already written upon, taken from our beliefs, life experience and unconscious assumptions. Our task is to read the writing and ensure it has both clarity and cohesion with our actions. My reflection upon how I constructed IT took time because of my lack of knowledge of IT and hence my unawareness of some of the societal implications. Therefore, the knowledge and experience in a curriculum area must be achieved within the structure and pace of intended innovation. Somekh (1989) writes of how teachers may be unable to imagine uses for the computer without first using it with children, and yet they wish to see a purpose before they use it.

**Conclusion**

My understanding that clarity is pivotal to creating empowerment and change has, at times, seemed like a quest for the Holy Grail. This period of reflection has also provided new insights.

I also believe that many problems have been created by some educationalist ‘experts’ who, by the skilful use of certain methodology to
implement recent political dogma, have created a great divide in the teaching profession. The philosophy of education which they espouse is not new. What is new is the credibility that successive Ministers of Education have given that philosophy and the manner in which that philosophy has been legalised and implemented. Within the teaching profession, where this philosophy is delivered, this has created a new plateau of de-skilled practitioners. Because of the dictates of these ‘gatekeepers of expertise’ (educational experts), this has led to higher levels of demoralisation and dissatisfaction within the teaching profession than ever before.

However, my understanding of the current situation in education has also helped me to identify a way forward. I acknowledge that the creation of practitioner-led teams of action research within schools would create significant stepping stones towards a solution (Somekh, 1989). However, I do believe the issue needs further exploration.

My period of reflection has emphasised the importance of maintaining consistency between my values and my actions. My values have not changed much, but my awareness as to the implications of my values from thought to action has changed significantly.

I first read Pedagogy of the Oppressed by Paulo Freire (1972) 20 years ago and it became a seminal book for me, but it has taken me this long to truly understand that if teachers are to enable their pupils to achieve critical consciousness, they must achieve clarity in their own critical consciousness.

It was during a research project I was involved in that I first began to reflect upon how we link our beliefs to actions. At that time I used my life experience in facilitating my understanding of my values and beliefs, some of which were unconscious. I also used life experience when talking to colleagues, using it as a common ‘language’ when making abstract concepts meaningful to them.

How to give meaning to abstract concepts so that individuals understand them is pivotal to innovation. It is this issue that was not completely resolved for me. I began to consider how we relate our experience in a narrative form of language (Bakhtin, 1988). Essentially, we create meaning to others through a narrative. Our lives are stories, and we can relate to stories with profound understanding. The storyteller Betty Rosen (1991) writes of how each re-telling of the same story creates its own shape, dependent upon her audience and her mood. This brought me to consider how I have examined staff development on several occasions and each time the issue has had a different focus and has been viewed from a different perspective, while remaining structured by the same tenets. The issue is re-created by the context.

This article has focused on the achievement of clarity between principle and practice. It has been another re-telling of the same story.
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