Formative assessment for all: a whole-school approach to pedagogic change

Mark Priestley[a]; Daniela Sime[b]

[a] Institute of Education, University of Stirling, UK [b] Department of Educational and Professional Studies, University of Strathclyde, UK

PLEASE SCROLL DOWN FOR ARTICLE

Routledge
Taylor & Francis Group

Formative assessment for all: a whole-school approach to pedagogic change

Mark Priestley[a]* and Daniela Sime[b]

[a]*Institute of Education, University of Stirling, UK;* [b]*Department of Educational and Professional Studies, University of Strathclyde, UK*

Scotland's *Assessment is for Learning* initiative (AifL) seeks to introduce a co-ordinated national system for assessment in schools. Formative assessment is a major plank in this. The initiative has moved beyond its pilot phase and it is intended that it will be adopted by all Scottish schools by 2007. This article draws upon the case-study of a primary school that has adopted a whole-school approach to enacting the formative assessment principles of AifL since 2004. It utilizes Margaret Archer's social theory to analyse and explain the processes of change that have underpinned the development of formative assessment in the school. The article argues that meaningful change in schools can be stimulated by encouraging socio-cultural interaction among practitioners, via the impetus provided by a central initiative combined with the creation of spaces for dialogue and the extension of professional trust and autonomy.

Keywords: *Formative assessment; Assessment for learning; Change; Innovation; Morphogenesis; Morphostasis*

Introduction

Continual change seems to be the order of the day within schooling systems worldwide. According to Levin (1998) change has reached 'epidemic' proportions. Nevertheless, much of the recent literature suggests that attempts to reform schooling (especially in the related fields of curriculum and pedagogy) have been generally unsuccessful in leading to embedded, long-term change in practice (e.g. Helsby & McCullough, 1997; Swann & Brown, 1997; Cowley & Williamson, 1998; Cuban, 1998; Spillane, 1999; Priestley, 2005). Cuban suggests that centrally initiated curriculum change is unlikely to be successful unless it actively engages the 'practitioners who are the foot-soldiers of every reform aimed at improving student outcomes' (Cuban, 1998, p. 459). Similarly, Ruddock (1991, pp. 27–28) reminds us

*Corresponding author. Institute of Education, University of Stirling, Stirling FK11 7BW, UK. Email: m.r.priestley@stir.ac.uk

of the 'power of the school and classroom to accommodate, absorb or expel innovations that are at odds with the dominant structures and values that hold habits in place'. According to Priestley (2005), the form and extent of innovation is greatly dependent on the attitudes and values of such practitioners, especially teachers. Top-down innovation tends to disregard the power of teachers to mediate change; successful innovation is often better achieved through a process of adaptation, combining central impetus with active engagement by practitioners. External reform initiatives thus develop in a dialectical fashion, reflecting the dynamic two-way relationship between the initiative and the context for enactment, including the local change agents.

Margaret Archer's (1988) social theory provides a useful framework for under-standing the processes of change in schools. Archer makes an analytical distinction between the cultural system (i.e. the corpus of knowledge) and socio-cultural interaction (i.e. the ways in which such knowledge is applied by people). She uses the terms 'morphogenesis' and 'morphostasis' to signify change and lack of change in any given social setting. According to Archer, actors are influenced by, but never determined by, the cultural system and the structures that surround their lives. Of particular interest in any change context are complementarities and contradictions. In the former situation, ideas and knowledge utilized to promote change are consistent with the ideas, norms and values that already exist within the change context, socio-cultural interaction readily assimilates the new ideas and change is relatively unproblematic. In the latter situation, which we suggest is more commonplace in school contexts facing change, new ideas are in tension with existing ideas, norms and values, and change is thus more problematic. Archer suggests three potential socio-cultural consequences of contradictions within the cultural system. First, the new ideas are modified to fit with existing ideas, norms and values, and change does not take place: this is morphostasis. Second, existing ideas, norms and values are modified to fit with the new ideas, producing a form of morphogenesis. Third, and we suggest that this is consistent with the process of adaptation that accompanies successful change in schools (Priestley, 2005), both new and old ideas are adapted to remove or reduce contradictions. Morphogenesis occurs, and socio-cultural interaction leads to elaboration of the cultural system and the generation of new knowledge.

Contradictions or complementarities at the level of the cultural system are not the whole story. An additional set of influences on change lies in the structures that underpin schooling: power structures, staffing, timetabling and systems for testing and inspection are examples of these. New ideas (the cultural domain) may arouse considerable tension when they come up against structures. According to Archer's model, such tensions are played out through socio-cultural interaction, resulting in morphostasis or morphogenesis according to the outcomes of such action; in other words, combinations of structural and cultural reproduction and elaboration result from such interaction, in similar fashion to the three sets of socio-cultural consequences discussed in the previous paragraph. For instance, at one end of this continuum a proposed change may provide complementarities at the level of the

cultural system and be broadly welcomed by teachers; but being problematic in terms of structure, it fails to stimulate change. Conversely, a new set of ideas may result in changes to the underlying structures of the school. The Doyle and Ponder (1977) practicality ethic provides a useful means of analysing this:

- *Congruence.* Are the proposed reforms congruent with teachers' prior practice, skills and values?
- *Instrumentality.* How easily do the changes fit with existing structures, procedures and expectations in the school? In other words, how workable are they?
- *Cost/benefit.* For example, will there be costs or benefits in terms of workload, pupil behaviour and inspections?

Thus, for example, a change may be welcomed in terms of congruence (cultural complementarities), but be difficult in terms of instrumentality and/or cost (structural constraints).

Given the complexity of change in educational settings, it is interesting to reflect on the factors that may combine to promote or impede innovation. Hayward *et al.*, following Popkewitz (1997), draw upon Wittgenstein's rope metaphor to explain educational change:

> The strength of the rope is not dependent on the length of its constituent strands, but on the number of strands that interweave at a given point. In applying this metaphor to educational change, strands may represent contextual factors such as teacher capacity and will to change, institutional culture and the nature of prior practice. They may also represent innovation factors such as resourcing, professional support and the quality of communication. If all of these factors co-exist in good measure, then innovation stands a good chance of succeeding; however if some are missing, or weak, then clearly innovators need to boost the strength and number of other factors within their control. (Hayward *et al.*, 2004, p. 404)

The strands of the rope may be seen as catalysts, if present, or inhibitors, if absent or weak (Hayward *et al.*, 2004; Priestley, 2005). Many of these have the potential to be influenced by action (both internal and external to the school). It could be argued that enhancing factors such as strong leadership and support and allocating resources to create spaces for collaboration may compensate for structural and cultural weaknesses. For instance, Hayward *et al.* (2004) point to the continued impetus provided by the resourcing of a national development project as a catalyst to stimulate change and strengthen the rope when strands are missing or weak. One such example is capacity and will to reform. In this case an initial reluctance by some teachers to engage with the project may be seen as a weak strand, whereas hostility to reform may be seen as a missing strand. In both cases, morphostasis is a likely outcome: in the former case because of inertia, in the latter because there may be active attempts to subvert or even derail a reform.

This article draws upon a case-study of a Scottish primary school that has attempted to address these issues, enacting a whole-school approach to changing

pedagogy via the medium of the Scottish Executive Education Department's (SEED) *Assessment is for Learning* (AifL) programme. Viewing the data through the theoretical lens described above, we seek to unpick the strands of the rope, providing some important pointers for school management and others wishing to innovate at a whole-school level. The article utilizes interview and observation data to investigate the impact of the initiative within the school. It does not seek explicitly to evaluate the success or otherwise in the classroom of the formative assessment strategies; that has been done elsewhere (e.g. Black *et al.*, 2002; Hallam *et al.*, 2004). Instead, it focuses on the processes of change that have both driven and accompanied the initiative. First we briefly outline its context and nature, before then detailing the research methodology. Finally we conduct an analysis of the research data, examining change processes and the factors that have both contributed and impeded them.

The national context

AifL was initiated in 2001 to articulate a holistic and co-ordinated policy for assessment in Scotland's schools. The background to this initiative has been well documented elsewhere (e.g. Hayward *et al.*, 2000; Hutchinson & Hayward, 2005), but it is useful to briefly put into context the development of the formative assessment project that is the focus of this article. The AifL programme originally comprised ten individual but interrelated projects, across three broad areas of development:

- professional classroom practice;
- quality assurance of assessment information;
- monitoring and evaluating using assessment data.

The original aims of the programme, as laid down in the first AifL newsletter (LTScotland, 2002), were largely focused on systems for assessment. They included the development of a unified system for recording and reporting, the consolidation of national arrangements for assessment, and the establishment of mechanisms for continuing professional development and support. However, the programme has come to represent much more than these apparently technicist aims. Anecdotal evidence (e.g. conversations with teachers involved in the pilot projects and more widely across Scotland) suggests that AifL has become most clearly identified with the high-profile formative assessment strategies developed in England's *King's–Medway–Oxfordshire Formative Assessment Project* (KMOFAP) (Black & William, 1998a, b; Black *et al.*, 2002). This is despite the fact that this element (tackled via Project One, *Support for Professional Practice in Formative Assessment*) formed only one project out of the original total of ten. More recently the programme has evolved to comprise three related strands: Assessment *for* Learning; Assessment *as* Learning; and Assessment *of* Learning (see LTScotland, 2005).

The AifL formative assessment pilot project (Project One) initially involved only a handful of teachers in 35 primary and secondary schools, ranging across a variety of socio-economic contexts. Policy now requires that all Scottish schools enact AifL by 2007; however, many schools have already instigated development programmes in this area, inspired by the apparent success of the pilot project. One such school is the primary school investigated in this case-study, which will subsequently be referred to by the pseudonym Discovery School. Here, senior managers have launched a programme of formative assessment, supported by staff across the school. One important and interesting aspect of the initiative has been its enactment at a whole-school level, rather than implementation by a selected group of practitioners, as was the case within the pilot project schools.

The school

Discovery School is a large primary school, with over 500 pupils and 20 teaching staff. Its catchment area is prosperous, largely comprising private housing, with a small percentage of council properties. In recent years the school roll has increased, due to housing developments in the area. The school has a strong ethos of openness, communication and support, and teachers are encouraged to engage with continuous professional development and to work collaboratively. In-house training events are organized regularly to support various initiatives taken at school level, and members of staff are encouraged to participate in training events outside the school and to further their careers through continuing professional development. Teachers (including management) meet in the staff room at lunchtime to share ideas, exchange information about events or initiatives, and chat informally. Parents play an important role in supporting initiatives developed in the school, via the school board and the PTA (Parent–Teacher Association), and the school management places a high premium on this involvement, and on regular consultation with parents and the wider community.

The initiative to reconsider the ways in which teachers assess children's work was taken by the management in September 2003. It has followed the approach taken within the national pilot project, combining central impetus and support with active engagement and adaptation by participating teachers. The deputy headteacher (referred to by the pseudonym Janet), who has developed a special interest in the area of assessment, was delegated to take the lead in informing the staff about AifL, providing them with the information needed and organizing in-house events to enable staff to become familiar with the programme. The first event included input from a university academic (with links to the national pilot project), who has subsequently continued to provide support. Throughout the lifetime of the initiative Janet has provided teachers with continual impetus and support, for example advice over the selection of strategies. While the management has provided the initial impetus and has been the driving force behind the initiative, many colleagues at the school have also engaged proactively with it. For example, two teachers constitute the *Assessment Working Group*, which has had an

important role in both communication and dissemination, and the development of internal policy and other working documents. Staff involvement has subsequently been broader, with teachers from Discovery School having substantial input at professional development events for teachers at other schools within the local authority. Pupils have also been regularly consulted in the development of formative assessment in the school, as were parents via the medium of two evening events, where they were informed about the initiative and asked to express opinions.

The initiative

The model for formative assessment developed by Black *et al.* (2002) outlines four key areas, which have been well publicized elsewhere. Briefly, these are:

- *Questioning*. In particular, they advocated the use of 'wait time' during oral questioning to allow pupils time to process questions and answers.
- *Feedback through marking*. This involves the use of 'feedforward' (feedback targeted at improvement), through, for instance, an emphasis on comments rather than grades, and a greater reliance on oral feedback.
- *Peer assessment and self-assessment*. Suggestions include the use of 'traffic lighting' to promote two-way communication in the classroom; for example the use of red, amber and green colour coding to signify understanding.
- *The formative use of summative tests*. This approach includes suggestions that pupils be encouraged to redraft work, and to set and mark summative questions.

Black and Wiliam define formative assessment as: 'all those activities undertaken by teachers and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged' (1998b, p. 2). In short, feedback can emanate from any classroom dialogue, and many of the proposed strategies operate by increasing opportunities for such dialogue. Nevertheless, the recourse to such Vygotskian (Vygotsky, 1978) notions of social learning could be seen as being in considerable tension with predominant modes of teaching within a schooling system dominated by convergent rather than divergent modes of assessment (Torrance & Pryor, 2001) and a pervasive environment of accountability (Torrance, 1997; Codd, 1999).

The small strategies that comprised the four substantive areas were designed as a first step for teachers who were perhaps reluctant to make large changes to pedagogy within such an environment, where innovation is potentially seen as a risky business. Significantly, they were embedded into schools within the professional development model referred to previously; this was designed to encourage reflection and ongoing improvement, facilitated by the establishment of professional networks and central support (see Black *et al.* (2002), Hayward *et al.* (2004) and Hutchinson & Hayward (2005) for fuller discussions of this approach). It is therefore perhaps unsurprising that a common feature of classrooms within the

pilot AifL project was the willingness of teachers to take the simple strategies developed within KMOFAP, and to adapt and elaborate them. For example, many teachers in AifL started with the simple expedient of increasing wait time, and quickly diversified into a range of techniques more commonly associated with *Co-operative Learning* (for example, *Think, Pair and Share*, where pupils are given questions and encouraged to spend some time thinking and discussing in pairs before sharing answers with the whole class).

Many of the teachers at Discovery School have followed this general trend. The basic strategies have been augmented and adapted, and comprise a variety of additional approaches to improve levels of dialogue, communication and feedback. They include the following:

- The extension of thinking time to a range of classroom activities, including the introduction of a 'no hands up' rule when answering questions. *Think, Pair and Share* has been employed extensively throughout the school.
- A reduced emphasis on marking pupil jotters. Targeted marking is used to provide substantive feedback on selected written work, and teachers now spend more time conferencing (oral feedback) with individuals and groups of pupils.
- The introduction of techniques such as traffic lighting and hand signals to aid self-assessment, both in written and oral work.
- The use of show-me-boards (small whiteboards) for peer assessment by pupils working within groups. For example, these are used for demonstrating processes of arithmetical calculation, and gaining instant feedback from peers and the teacher, and are seen as being less formal and threatening by many pupils.

In general terms teachers have encouraged reflective dialogue with and between pupils, and have worked hard to make explicit the aims and criteria of activities and assessments.

The final section of the article will explore these issues in greater detail.

Methodology

Following Archer (1988), we believe that 'official' knowledge (represented in this case, for instance, by curriculum statements, local authority guidance and the literature on formative assessment and AifL) is given concrete expression by the socio-cultural activity of actors (in this case teachers and managers). While such actors are both constrained and enabled by the situational logics formed by cultural and structural systems, they are not necessarily determined by them. Human agency via social interaction therefore plays a major role in initiating, enacting and adapting new approaches to teaching and learning in any school context, and the knowledge generated in turn plays a part in cultural elaboration.

Consequently, we have placed a large emphasis in this study on the analysis of the meanings that teachers and managers ascribed to the initiative, as such meanings help shape the practices themselves, and the contexts within which they occur. We were

also interested in the types of agency (both at an individual and group level) that have served to promote change, for example the relative roles of different staff in developing the initiative. The research project therefore took the form of a case-study. Five broad evaluation areas were initially identified:

- the types of classroom approaches to formative assessment within the school;
- the extent to which pedagogy evolved in response to the strategies of formative assessment;
- the extent to which changes in pedagogy translate into greater levels of learner participation, and improved student motivation and behaviour;
- the impact of the strategies on teacher enjoyment and motivation to teach;
- the potential for long-term sustainability of the strategies.

Data from multiple sources were used to construct a view of assessment and pedagogy in the school. Data took four forms:

- analysis of policy and school documents on assessment;
- observations at micro-level of the classroom practice of four teachers (two classes per teacher);
- short conversations with each teacher after each observed class to discuss the assessment techniques used;
- longer interviews with pupils, teachers and deputy headteacher.

One researcher collected all data during a week of daily visits to the school during November 2004. One of the writers has been involved in supporting the school throughout the course of the AifL initiative; while we believe that this provides a number of benefits in terms of understanding the research context, it also raises potential issues in terms of objectivity and ethics. Therefore a decision was made early in the research project (prior to data collection) that the researcher would be someone with no prior experience of working with the school.

The school management highlighted, at the outset of the research, the varied degree of experience of, and engagement with, the formative assessment strategies by school staff. The interviewees were chosen by the researcher from a pool of volunteers to reflect this diversity. The data from classroom observations were used to prompt teachers' reflections during the short interviews and to illustrate examples of practice. Pseudonyms and the random reassignment of gender have been employed to protect confidentiality and preserve the anonymity of respondents and the school.

The document and interview data were analysed thematically, to consider the five areas of evaluation identified above. The whole range of findings about the impact of AifL in the school have been reported elsewhere (Sime & Priestley, 2005). For the purpose of this article, with its more narrow focus on changing classroom practice, the interview transcripts were then coded to identify key themes occurring across the school in relation to changes in teachers' practice. However, while the key focus here

lies in analysing the processes that underpin change, it would be incomplete without some evaluation of the success or otherwise of the initiative in inculcating change. Therefore the analysis first includes three criteria for judging this: these are *disposition* to change, *engagement* with the key ideas of AifL and *changed practice*.

Second, and in the light of Wittgenstein's rope metaphor, the analysis of the change processes focuses on two main groups of strands that the research suggests are intertwined in this particular rope. These are grouped as follows:

- impetus and support (e.g. the national AifL project and the role of the school management);
- the social context for reform (e.g. prior practice within the school, school ethos and policies, and teacher attitudes).

Findings

Success?

The interview data and supporting observation evidence support the view that the project has been a success for the school. In terms of *disposition* to change, all of the interviewed teachers expressed a high degree of support for the initiative. According to the deputy headteacher 'they wholeheartedly took it on board' (Janet, Discovery School, 2004). Another teacher supported this, stating, 'I really enjoyed trying out the strategies, it has been an eye opener' (Peter, Discovery School, 2004).

Nevertheless, *disposition* to change is not the full story. Of issue here is the notion of the described curriculum (i.e. what is said to occur) as opposed to the enacted curriculum (i.e. what actually happens). Our observation data suggest that what is described as formative assessment does not always fit that description. For example, show-me-boards were used in some classes for pupils to communicate answers rather than to promote dialogue about the processes of working them out. Nevertheless, our interview data suggest a more encouraging outcome than this, painting a picture of increased reflection on classroom decision-making and pedagogy; in other words *engagement* with the key underpinning ideas of AifL.

> I think I'm more aware of how I'm teaching. The fact that there are many different styles of learning is also at the back of my mind now. (Peter, Discovery School, 2004)

> The way in which teaching is going just now, you need to be prepared to change and reflect more on your teaching. I think this programme helps you do this, ask yourself, how could I do this better, how can I change what I used to do so far, maybe next time I'll try something else and so on. It definitely makes you more reflective. (James, Discovery School, 2004)

The evidence from our case-study suggests that the initiative has been a success in that it has promoted reflection among teachers about the role of dialogue in learning.

Moreover, there is some evidence of *changed practice*, as summarized by the deputy headteacher:

> There has been a change of practice in the classroom. I think it has improved learning and that's come from being more interactive … there's been more working in pairs and working in groups, more collaboration between the children (and) all of this has led to more pupil participation. (Janet, Discovery School, 2004)

It is acknowledged within the school that some teachers have made more progress than others, that teachers started AifL from very different bases and that some teachers encountered initial problems with the strategies. However, the research data largely support the view that all teachers have made progress and that AifL is popular. We therefore start our analysis of the change processes from an assumption that the initiative has been successful in promoting its espoused innovations in teacher practice.

Impetus and support

We must first consider the role of leadership, and the impact that a single motivated person can have in providing impetus and support for change. In the case of Discovery School, Janet, the deputy head, had become interested in formative assessment while seconded to the local authority. Her enthusiasm for the AifL principles has been translated into action and activity at the school level: she provided the initial impetus for the project and has sought to provide ongoing support for the staff since its inception. This has had a number of important consequences.

First, our interview data suggest that such impetus is crucial in overcoming a lack of confidence by teachers. One member of staff alluded to the importance of being given 'official' sanction for doing what came naturally to her, but which had been difficult in the prevailing context of teaching:

> It's almost like we've been given leeway for something we used to do. (Susan, Discovery School, 2004)

Another teacher spoke in similar terms:

> It's also nice to have a label or to have the practice recognized so you didn't feel that you were doing anything which you shouldn't be doing because it's not in the school documents. It makes it hard to do anything that is not regulated by the authority, you feel that maybe you shouldn't be doing it. (Peter, Discovery School, 2004)

It is clear from our interview data that teachers place value in the official nature of the initiative (with its accompanying literature), the official endorsement of the national AifL project and the support of the school management and local authority.

Second, the school explicitly recognized the importance of engaging teachers in the development of formative assessment in the school. Via the medium of staff

in-service days, two strategies were identified for adoption by all teachers: these concerned marking and thinking time. Otherwise, in Janet's words, 'Other strategies are up to the individual teacher because we didn't take a prescriptive approach.' Nevertheless, this does not imply a *laissez-faire* attitude towards the development of the initiative at a whole-school level. The designation of two teachers as an assessment working group and the subsequent development of a working policy document demonstrate how teacher engagement was combined with an active approach to developing formative assessment. The autonomy experienced by teachers within their own classrooms seems to have contributed to the perceived success of the initiative.

> But like with any resources, once you get going, you adapt and develop. There is no right or wrong way to use something, what I do suits me, and the next day I might use a strategy differently, you adapt to children's needs at a time. With thumbs up, thumbs down, sometimes you may be looking for opinions, at other times for their level of understanding of what you said, yet other times about how they feel about the process they've just been through. So you just adapt. (Susan, Discovery School, 2004)

> So each teacher chose two or three strategies, then went away and tried out the strategies in the classes. A lot of teachers immediately saw that the example they were given wasn't working in their classes, so they adapted it. It was a case of trial and error and seeing how it worked. (Peter, Discovery School, 2004)

A third area highlighting the importance of impetus and support provided by the management lies in the deliberate encouragement and development of collaborative spaces within the working days of the teachers. Such spaces include in-service days and timetabled meetings. This policy was articulated by the deputy head:

> I decided to do it as a whole-school collaborative approach, because I knew from past experience that working groups have more limited success than whole-school initiatives. (Janet, Discovery School, 2004)

This approach seems to have been welcomed by the teachers. When asked to account for the success of the initiative, one teacher unequivocally pointed to collaboration:

> I think the fact that everybody was willing to take this on board, this was really important, that it was a team effort, we could see the advantages and the possibilities for the children and the staff. . . . We are always working together, the stage partners knock ideas of each other and the management is also very supportive of us trying out new things. (James, Discovery School, 2004)[1]

Another teacher spoke of the informal opportunities for collaboration that had helped her to develop formative assessment in her classroom. Given the enthusiasm for peer collaboration, it is perhaps surprising that peer observation of teaching has not been

tried by the teachers at the school. One teacher suggested that he was uncomfortable with the notion:

> There was an opportunity for that, but a lot of staff were quite uncomfortable with the idea. Within the school, we know each other, so it's quite difficult to observe each other, it makes you really nervous. (Peter, Discovery School, 2004)

However, the other teacher interviewees suggested that such opportunities to share practice would have been welcomed, with perhaps initial reticence. These teachers believed that practical difficulties (lack of supply etc.) were the major barrier to setting up a system of peer observation. The following comment typifies such feelings:

> I would like to observe someone else, but the logistics of that are so difficult, supply teachers are expensive and difficult to arrange. (Susan, Discovery School, 2004)

The social context for reform

It is a truism to suggest that the growth of the tender shoots of a new initiative is greatly enhanced by the existence of fertile soil. In terms of Wittgenstein's metaphor, the factors mentioned in the previous sections (strong impetus and support and the development of collaborative networks and tools) are important strands of the rope. Nevertheless, the rope will be stronger if a number of additional strands are already present. These are perhaps most succinctly encapsulated by the Doyle and Ponder (1977) practicality ethic.

In terms of congruence, there are two main strands emerging from the evidence. These are summed up well by Spillane's (1999, p. 144) description of the 'capacity' and 'will' to enact reform. First, the capacity to reform was felt to be high. In the view of the management, many of the teachers at Discovery School had been well prepared for engagement with formative assessment by involvement in related initiatives. Janet, in promoting formative assessment, saw the initiative as building on prior practice and skills.

> One of the most important things when we introduced formative assessment was that it was building on existent practice. There was nobody not doing something. They didn't know that it was called formative assessment, but when I read through 'the black box', I was saying 'oh, yeah, there is a lot of staff in the school doing that already'. I found that building on existing practice is non-threatening, you are not saying 'we are doing something new', you are saying 'we are already doing a lot of this', but we need to take it a bit further. So that was our starting point. ... It's has been a progression of things. We have been looking at ways of developing Enterprise, education for work, core skills, we looked at the whole child approach and then we realized that assessment needs to be looked at in quite a big way ... the staff here were ready for that next step, because they have done a lot of work on how children learn, thinking skills and core skills with children. So it was quite a natural step for us. (Janet, Discovery School, 2004)

Second, plenty of evidence emerges from the interview data to support the view that teachers support a return to what they see as the core business of teaching; in other words, there potentially existed a 'will' to embrace the changes. Indeed some go further, suggesting general weariness with bureaucratic assessment.

> We were asked if we would want to try one of the strategies in the classroom and I was more than happy to try them because it was really close to what I've been taught to do years ago in my teacher training . . . so I embraced it with open arms. (Angela, Discovery School, 2004)

> I think I wasn't a bit wary of being a bit more involved. Everything had to be on paper, otherwise it was thought that you weren't doing it. All of a sudden we were saying, thank goodness for a change. Because it became like that, if it wasn't on paper, you haven't been doing it, now how frustrating is that? Because that's not the way most people learn, that can be so soul destroying. (Susan, Discovery School, 2004)

Instrumentality would not appear to be a major issue, given the support of the school management, and the time made available for collaborative planning. These served to overcome structural difficulties caused by systems for testing and the recording of evidence. The popularity of the initiative among the teachers is testimony to this, as articulated by one teacher:

> I think it's very productive for us and the children, and it makes our life more normal and gives you a chance to know the children better and help them to work to their strength and them to work to their own strengths. Also, to help each other, they learn so much from each other. These are also great life skills. (Susan, Discovery School, 2004)

Doyle and Ponder (1977) suggest that even where congruence and instrumentality are achieved, an initiative may fail if costs are perceived to outweigh benefits. Hayward *et al.* (2004) similarly found that some teachers were reluctant to embrace the AifL reforms because of the concern that this would lead to a negative inspection report. In this case, Her Majesty's Inspectorate of Education (in perception at least) represented a contextual inhibitor to change. Our findings at Discovery School suggest that cost is not a major issue at this particular school, but that teachers, after initial teething troubles, have perceived benefits in the adoption of AifL. This is turn seems to have led to the emergence of new strands to our rope as a result of socio-cultural interaction, and the accelerated development of new practices and attitudes through a process of autocatalysis (Diamond, 2005). In other words, the ongoing success (in the eyes of practitioners) of the strategies has led to an ever-increasing engagement with formative assessment, dialogue and pupil participation.

A number of benefits were reported by teachers. First, the initiative has been popular with children, and teachers believe that this has increased motivation to learn, and encouraged greater levels of independent learning.

> The strategies are very popular with the kids, they like their thinking time, using the whiteboards. (Janet, Discovery School, 2004)

> They are more motivated and they like it more that you are in amongst it, you are not just waiting for something to come to you, so you as a teacher are more on top of things, even if you are doing just the white board thing, you can see what's happening, you pick up on things in an instance and you can start talking about it or prompt the children to show each other things or talk about one thing. That's got to be more motivating than having the teacher at the front of the class waiting for you to do things on your own. You are there among them and it's more interactive. (Susan, Discovery School, 2004)

> The children are more active and engaged learners, and the staff are more motivated. (James, Discovery School, 2004)

> It definitely motivates them and that's a major benefit, that's what you want. You want to produce children who are taking control of their own learning, so it's a good skill for them to learn at a young age, it's a skill for life. It reinforces to them that they have responsibilities. (Angela, Discovery School, 2004)

Second, the initiative has resulted in at least a perception of a reduced marking workload for teachers, combined with a greater degree of flexibility and spontaneity in the classroom.

> I don't have to take everything home every night and mark it and assess that way. It has made my lessons more free and I can move around the classroom, give the children feedback there and then or can write the comment there and then. I used to do that before, but now it's got an official title or label to it and I like that. The children also don't have to wait till the next day to read what I had to say on their work, they would often forget what it was all about. (Peter, Discovery School, 2004)

> It has cut my marking down considerably. And it's very immediate feedback, you can see quickly who has difficulties with a task and once the children learn to be very honest about it and give you a reason about their evaluation, it works. They also need to have the confidence to say that in front of their classmates and know that nobody is going to laugh or ridicule them in any way. It's very good, it's giving you instant feedback and you are saying to yourself mentally, right, tomorrow I'm going to do this or review that. It's letting me make a decision almost instantly and it has cut down the preparation time, as you are more reactive and prepare things as you go along. (Angela, Discovery School, 2004)

The benefits of this apparent mix of more motivated children, pupil autonomy, classroom flexibility and spontaneity, and reduced teacher workloads are clear in the view of the interviewed teachers.

> It has changed the emphasis from written work, which makes me more relaxed, because at one point we had to show the evidence in jotters all the time; that was a Council decision. And that was quite stressful because you were tense to get the children to write everything

in the jotters, to have as much as possible in them before your line manager would check the jotters. So we were all very tense, teacher and children, the atmosphere was very charged. While now it's a more relaxed environment, they are often learning without even realizing it, it's a more beneficial medium for learning. (Angela, Discovery School, 2004)

Conclusions

Discovery School has been largely successful in engaging its staff members with AifL. However, this success was by no means certain at the start of the initiative, and development is both ongoing and provisional. In Archer's (1988) terms the initiative has been accompanied by the manifestation of both complementarities and contradictions at the cultural and structural levels. The principles of AifL appear to be largely congruent with the professional and personal values of the interviewed teachers, but there are cultural and (especially) structural difficulties that have rendered the initiative problematic. For example, systems for paper-based assessment potentially made the dialogical approach of AifL difficult initially (although these inhibitors are clearly less potent in primary schools than in the rigidly timetabled, exam-focused environment of the secondary school). Thus an innovation that is largely congruent with the values of teachers could have led ultimately to morphostasis. It is our view that these potential contextual inhibitors have been overcome by the combination of a number of factors.

First, proactive leadership, combined with the official weight of the initiative (a national project backed by widely publicized research evidence) seems to have provided a major source of impetus. Fullan (1993) points to the importance of effective leaders, including teacher leaders, in promoting change. Similarly Geijsel *et al.* (2003) talk of the power of transformational leadership to promote collaborative cultures and changed attitudes. Conversely, Hayward *et al.* (2004) highlight an example of the consequences of indifferent leadership in a similar context, where morphostasis was more evident. In the case of Discovery School, such dynamic leadership and regular support have been present throughout, provided by both the deputy head and the pair of teachers who developed the assessment policy. Such support is ongoing, with the clear intention of maintaining the momentum for change.

Second, our research suggests that strong leadership alone is not sufficient to drive change, as the litany of failed initiatives to reform schooling also demonstrates (Cuban, 1998). Professional trust is also necessary, particularly trust in the capacity of teachers to drive change and adapt teaching in the light of their expert knowledge of the contexts in which they operate. According to Boreham and Morgan (2004), a key ingredient in organizational learning is the reconstituting of power relationships. We would wholeheartedly endorse Boreham's (2005, p. 8) statement that if we wish to turn 'schools into learning organizations, we need to affirm the teacher's experience as the prime source of the knowledge on which educational policies are based'. At Discovery School, professional trust has been afforded to the teachers, who appear to have responded accordingly.

A third factor is dialogue. Hayward *et al.* (2004) have applied the Vygotskian view of co-constructivist learning to teacher development. Our research strongly suggests that the creation of spaces for collaboration, another key feature of the Boreham and Morgan (2004) organizational learning model, is crucial to promoting the sorts of socio-cultural interaction that ultimately lead to changes in practice and cultural elaboration. Such dialogue provides a form of peer scaffolding that helps enable teacher learning. This process has occurred to a large extent at Discovery School, facilitated by an existing culture of dialogue within the school, and a whole-school approach to the initiative. Such dialogue has led to what Boreham and Morgan (2004, p. 319) define as the creation of 'cultural tools to mediate learning'; in this case, the development of a toolkit by members of staff to facilitate the development of formative assessment strategies within the school. We believe that this clearly constructive dialogue would be further enhanced by the greater use of peer observation of teaching.

A final factor lies in the nature of the initiative. The 'start small' strategy appears to have overcome the potential for contradiction between different ideational elements of the cultural system or, put more plainly, the tensions between the new and the old. Small interventions are less likely to face resistance from pupils and parents. Even where the formative assessment strategies do not initially really constitute formative assessment (for example, the previously described use of show-me-boards for communicating product rather than process), teachers appear to have readily seen the benefits, and have started to reflect and subsequently to adapt their views towards learning and the strategies used to achieve this. This process of autocatalysis appears to have been a crucial element in the change process at Discovery School.

These four factors have combined to stimulate high levels of socio-cultural interaction within the school. The AifL initiative has provided the cultural stimulus which, as we noted, has been largely in tune with the professional values of the interviewed teachers. The national nature of the initiative, and its strong support by the senior management, have gone some way towards bringing structures (especially the structures of power) into line with ideas about changed classroom practice, although contradictions posed by some of the deep-seated structures of the education system (e.g. policies for recording of classroom assessment), combined with perceptions of cost (e.g. possible HMIE opposition), have the potential to act as a brake on reform. Such legitimation is important in overcoming structural hurdles, and has clearly provided a major impetus to change. Nevertheless, we would follow Cuban's (1998) belief that socio-cultural interaction among the teachers is the crucial element in ensuring change. At Discovery School, socio-cultural interaction has been stimulated by continued management advocacy of the new practices, and fostered through the professional trust afforded to practitioners and the dialogue that has ensued. The initial use of small strategies has stimulated interest, leading to further experimentation in many cases. Thus AifL has become a part of the culture of the school and morphogenesis (especially cultural elaboration) has occurred.

Acknowledgements

Note

1. In a Scottish primary school with more than one class in each year group, stage partners are the teachers teaching the same year group.

References

Archer, M. (1988) *Culture and agency: the place of culture in social theory* (Cambridge, Cambridge University Press).

Black, P. & Wiliam, D. (1998a) Assessment and classroom learning, *Assessment in Education*, 5, 7–68.

Black, P. & Wiliam, D. (1998b) *Inside the black box: raising standards through classroom assessment* (London, King's College).

Black, P., Harrison, C., Lee, C., Marshall, B. & Wiliam, D. (2002) *Working inside the black box: assessment for learning in the classroom* (London, King's College).

Boreham, N. (2005) Organizational learning as the structuration of organizational enquiry, paper presented to the *International Conference on the Learning Potential of the Workplace*, Enschede, Netherlands, 3–5 March.

Boreham, N. & Morgan, C. (2004) A sociocultural analysis of organizational learning, *Oxford Review of Education*, 30(3), 307–326.

Codd, J. A. (1999) Educational reform, accountability and the culture of distrust, *New Zealand Journal of Educational Studies*, 34(1), 45–53.

Cowley, T. & Williamson, J. (1998) A recipe for success? Localized implementation of a (flexible) National Curriculum, *The Curriculum Journal*, 9(1), 79–94.

Cuban, L. (1998) How schools change reforms: redefining reform success and failure, *Teachers College Record*, 99(3), 453–477.

Diamond, J. (2005) *Collapse: how societies choose to fail or survive* (London, Allen Lane).

Doyle, W. & Ponder, G. A. (1977) The practicality ethic in teacher decision-making, *Interchange*, 8(1), 1–12.

Fullan, M. (1993) *Change forces: probing the depths of educational reform* (London, Falmer Press).

Geijsel, F., Sleegers, P., Leithwood, K. & Jantzi, D. (2003) Transformational leadership effects on teachers' commitment and effort toward school reform, *Journal of Educational Administration*, 41(3), 228–256.

Hallam, S., Kirton, A., Peffers, J., Robertson, P. & Stobart, G. (2004) Evaluation of Project 1 of the Assessment is for Learning development programme: support for professional practice in formative assessment, final report. Available online at: http://www.scotland.gov.uk/library5/education/ep1aldps-00.asp (accessed 17 May 2005).

Hayward, L., Kane, J. & Cogan, N. (2000) *Improving assessment in Scotland: report of the national consultation on assessment in Scotland* (Glasgow, University of Glasgow).

Hayward, L., Priestley, M. & Young, M. (2004) Ruffling the calm of the ocean floor: merging practice, policy and research in assessment in Scotland, *Oxford Review of Education*, 30(3), 397–416.

Helsby, G. & McCulloch, G. (Eds) (1997) *Teachers and the National Curriculum* (London, Cassell).

Hutchinson, C. & Hayward, L. (2005) The journey so far: assessment for learning in Scotland, *The Curriculum Journal*, 16(2), 225–248.

Levin B. (1998) An epidemic of education policy: (what) can we learn from each other?, *Comparative Education*, 34(2), 131–141.

LTScotland (2002) *Assessment is for Learning*, Summer 2002 – Issue One (Glasgow, LTScotland). Available online at: http://www.ltscotland.org.uk/assess/about/newsletter/issue1.asp (accessed 17 May 2005).

LTScotland (2005) *Assessment Online Toolkit*. Available online at: http://www.ltscotland.org.uk/assess/index.asp (accessed 17 May 2005).

Popkewitz, T. S. (1997) The production of reason and power: curriculum history and intellectual traditions, *Journal of Curriculum Studies*, 29(2), 131–164.

Priestley, M. (2005) Making the most of the *Curriculum Review*: some reflections on supporting and sustaining change in schools, *Scottish Educational Review*, 37(1), 29–38.

Ruddock, J. (1991) *Innovation and change* (Buckingham, Open University Press).

Sime, D. & Priestley, M. (2005) *Introducing formative assessment: the case study of a Scottish school* (Stirling, University of Stirling).

Spillane, J. P. (1999) External reform initiatives and teachers' efforts to reconstruct their practice: the mediating role of teachers' zones of enactment, *Journal of Curriculum Studies*, 31(2), 143–175.

Swann, J. & Brown, S. (1997) The implementation of a National Curriculum and teachers' classroom thinking, *Research Papers in Education: policy and practice*, 12(1), 91–114.

Torrance, H. (1997) Assessment, accountability, and standards: using assessment to control the reform of schooling, in: A. H. Halsey, H. Lauder, P. Brown & A. S. Wells (Eds) *Education: culture, economy, society* (Oxford, Oxford University Press), 320–331.

Torrance, H. & Pryor, J. (2001) Developing formative assessment in the classroom: using action research to explore and modify theory, *British Educational Research Journal*, 27(5), 615–631.

Vygotsky, L. S. (1978) *Mind in society* (Cambridge, MA, Harvard University Press).