PGCert Performance Teaching – Written Assessment

This assessment closely mirrors elements of the PGCert Programme, working directly from one of the key readings.

- Please read the below paper (pages 2-17 of this document):
  Husbands, C. and Pearce, J. (2012) *What makes great pedagogy? Nine claims from research*. UK: National College for School Leadership.

- Select three of the claims (out of the total of nine claims), and write a short essay in response to them. You might consider some of the following questions:
  - What strikes you about the claims? What do you find really interesting?
  - To what extent do you agree or disagree with the claims?
  - Why? Is this coming out of your own practical experience of teaching and/or from your awareness of other literature?
  - How do these claims relate in practice to your own teaching, and your own particular context?
  - What steps might you take, or changes might you make, in your own teaching, as a result of these claims?

Word Limit
Between 1000-1500 words.

Submission
This essay should be uploaded as a pdf document in the 'supplementary materials' section of the online application form by the stated application deadline. <u>Please note: we cannot assess your application without the essay submission.</u>

The writing should be your own unaided work. Please include a declaration to this effect when making your submission.

National College
for School Leadership

What makes great pedagogy? Nine claims from research

Chris Husbands and Jo Pearce

Resource

Research and development network national themes: theme one

Autumn 2012

Great pedagogy: nine claims from research

There is a strong consensus that high performance in education systems is dependent on the quality of teaching. Barber put it simply: 'the quality of an education system cannot exceed the quality of its teachers' (Barber & Mourshed, 2007:13) and his report for McKinsey concluded that 'the best school systems are those that have the best teachers' (ibid:7).

Recent UK research concluded that 'having a very effective, rather than an average teacher raises each pupil's attainment by a third of [an examination] grade' (Machin & Murphy, 2011:5). In a review of the research on teacher quality, Machin argues that:

> Bringing the lowest-performing 5-10 per cent of teachers in the UK up to the average would greatly boost attainment and lead to a sharp improvement in the UK's international ranking. All other things equal, in 5 years the UK's rank amongst OECD countries would improve from 21st in reading to as high as 7th, and from 22nd in maths to as high as 12th...; over 10 years (the period a child is in the UK school system before the PISA examinations) the UK would improve its position to as high as 3rd in reading, and as high as 5th in maths.
>
> ibid:5

Whelan provides a useful summary:

> School systems need to ensure that their curricula are relevant and contain enough flexibility to accommodate different learners and different social and economic needs. They need to ensure that school buildings are in good condition... All these things are important and ultimately impact academic performance. However, none is nearly as important as the quality of teaching.
>
> Whelan, 2009:35

PISA data suggests that whilst variance in performance within schools is widespread – and particularly in countries that select pupils relatively early in the secondary phase – in almost all systems, in-school variation, or variance between teachers, is much greater (McGaw, 2008).

Summarising the evidence, Schwartz concludes that 'the most important school-related factor in student learning... is teaching' (Schwartz, 2009:online).

However, there is much less attention in the overall literature on what constitutes effective teaching, or, put differently, on the behaviours and actions of good teachers: what it is that good teachers do to promote good learning. At its worst, this produces a circular argument: good teachers are those who produce good outcomes, so that those pupils with good outcomes must have been taught by good teachers. In this paper, the research literature is used to advance nine strong claims about the characteristics of highly successful pedagogies.[1]

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1   In this review we refer to pedagogies rather than pedagogy. We do this in order to capture the variety of successful pedagogic practices which differ across the age range and between subjects.

1. Effective pedagogies give serious consideration to pupil voice.

2. Effective pedagogies depend on behaviour (what teachers do), knowledge and understanding (what teachers know) and beliefs (why teachers act as they do).

3. Effective pedagogies involve clear thinking about longer term learning outcomes as well as short-term goals.

4. Effective pedagogies build on pupils' prior learning and experience.

5. Effective pedagogies involve scaffolding pupil learning.

6. Effective pedagogies involve a range of techniques, including whole-class and structured group work, guided learning and individual activity.

7. Effective pedagogies focus on developing higher order thinking and metacognition, and make good use of dialogue and questioning in order to do so.

8. Effective pedagogies embed assessment for learning.

9. Effective pedagogies are inclusive and take the diverse needs of a range of learners, as well as matters of student equity, into account.

The research underpinning the claims is outlined below.

1. Effective pedagogies give serious consideration to pupil voice

There is robust evidence that giving serious consideration to pupil voice can generate highly effective pedagogy. Listening to pupil voice involves more than hearing what pupils have to say as part of the process of learning and teaching, and increasing attention has been given in recent years to the issues involved in, and the potential benefits that flow from, *consulting* pupils about this process. According to Niemi, Heikkinen and Kannas, 'involving students… in educational decision-making, and listening seriously to their stories of experiences as learners [are] essential first steps in developing education' (Niemi, Heikkinen & Kannas, 2012:139). Rudduck explains:

> Consultation is about talking with pupils about things that matter in school. It may involve: conversations about teaching and learning; seeking advice from pupils about new initiatives; inviting comment on ways of solving problems that are affecting the teacher's right to teach and the pupil's right to learn; inviting evaluative comment on recent developments in school or classroom policy and practice.

Rudduck, 2005:online

Robinson and Taylor point to a 'wide ranging literature citing numerous examples of how student voice work has led to changes in schools', noting that in 'some cases this has been as a result of teachers increasing their understanding of students' experiences and as a result, choosing to change their practice' (Robinson & Taylor, 2007:14). Exploring foreign language learning, Payne found that pupils made a valuable contribution by acting as 'a "conduit" to their respective language communities and provided insight in linguistic terms into the complex and nuanced issues inherent in such communities' (Payne, 2007:89).

Ferguson, Hanreddy and Draxton urge teachers to involve pupils in '*meaningful* decision-making and dialogue' (2011:55; emphasis added). Aside from the questionable ethics of superficial pupil consultation, there are practical and pragmatic reasons for serious engagement with pupil voice. Evidence from the teaching and learning research programme (TLRP) on consulting pupils (TLRP, 2003:online) suggests that pupils respond with insight and intelligence when consulted meaningfully. Morgan reports on the valuable contributions that pupils have made to pedagogy in one school where they were directly involved in teacher observations. It is clearly not only the pupils who benefit from this particular expression of their voice:

> I continue to be astonished by the contributions students make to improving the practice of trainee teachers. I am continually impressed by the feedback they provide, particularly in face-to-face conversations, and by the professionalism and sensitivity they display, by their incisiveness and ability to prioritise, by their skill at encouraging trainees and making well-judged suggestions.

Morgan, 2008:20

Gilljam, Esaiasson and Lindholm argue that 'schools will likely function better if pupils are motivated to accept binding decisions, and/or if they perceive that decisions are fairly made' (Gilljam, Esaiasson and Lindholm, 2012:75). According to Sellman, involving pupils in decision-making directly impacts upon learning and teaching. He points to the work of Fielding and Bragg, and says that according to them:

> ...the benefits of such forms of involvement can include:
>
> — Improved academic, communication and civic skills amongst students, as well as an increased sense of agency, motivation and engagement with schools affairs;
>
> — Insights for teachers, which can lead to improved practice and relationships with students for teachers;
>
> — Important feedback for schools, which can help improve teaching and learning.

Sellman, 2009:33–4

Robinson and Taylor point out that the 'word "*voice*"... implies that a pupil group has only one voice' and, further, that 'such a monolingual assumption is illusory' (Robinson & Taylor, 2007:7). There are a number of pupil voices and the serious consideration of pupil voice does not allow for the selection of, or overgeneralisation from, the most palatable (easily accommodated?) of them (ibid). Ferguson, Hanreddy and Draxton point to Cook-Sather's warning that doing so 'may cause minority perspectives to become invisible' (Ferguson, Hanreddy & Draxton, 2011:55) and that he (Cook-Sather) advises that some minorities are silent because 'we do not know how to hear' them (Cook-Sather, 2007:394). In their study, Ferguson, Hanreddy and Draxton designed an alternative interview for students who did not use verbal language or symbolic communication. Other voices we are less able to hear can include those of some pupils who speak English as an additional language (EAL).

Although there is much to be gained from meaningful engagement with pupil voice, it should not be assumed that all teachers have found it easy. Ferguson, Hanreddy and Draxton found that 'despite the substantial body of evidence supporting student voice... student perceptions regarding their learning environment are still seldom considered a valid source of data by school leaders or even teachers' (Ferguson, Hanreddy & Draxton, 2011:61). Robinson and Taylor argue for a 'need to acknowledge the range of institutional and professional issues... which prevent dialogue, participation and transformation' (2007:15).

Ferguson, Hanreddy and Draxton suggest that teachers need not find the prospect of taking seriously pupil voice threatening, though it is not always comfortable. They report on the responses of teachers to pupil feedback about classroom environment and practice. In general, the teachers were of the view that the pupils had engaged seriously with the task. Sellman reports: 'when given such opportunities students often surprise adults by repaying trust with fair and realistic feedback' (Sellman, 2009:34). Robinson and Taylor argue for a 'need to acknowledge the range of institutional and professional issues... which prevent dialogue, participation and transformation' (Robinson & Taylor, 2007:15).

Ferguson, Hanreddy and Draxton found that most teachers were keen to take action as a result of pupil feedback, especially where the feedback suggested that a student's emotional wellbeing was at risk, but also found a minority of teachers unwilling to accept responsibility for learning difficulties faced by pupils, 'plac[ing] the locus of control entirely on the student' (2011:65). This points to the necessity of good pupil–teacher relationships, as well as a willingness on the part of both to engage with the process, if pupil voice is to be taken seriously. At the same time the right of pupils not to participate should be respected (Payne, 2007). Indeed relationships are integral to each of the strong claims offered in this literature review. In the words of Max van Manen: 'Pedagogy is about being in a relationship with a child' (1991:76).

The clear message from literature is that pupil consultation should be done properly or not done at all (Robinson & Taylor, 2007). Sellman refers to 'tokenistic "litter picking rotas"' (2009:34), while Gilljam, Esaiasson and Lindholm report that while opportunities and structures for pupil voice 'can provide meaningful participation, tokenism and exclusion may undermine their effectiveness' (Gilljam, Esaiasson & Lindholm, 2010:74).

2. Effective pedagogies depend on behaviour (what teachers do), knowledge and understanding (what teachers know) and beliefs (why teachers act as they do)

Pedagogy can perhaps appear a challenging, even difficult word. Some thirty years ago, the educational historian Brian Simon wrote a critique of educational practice in England under the title 'Why no pedagogy in England?' (Simon, 1981). He described pedagogy as the 'science of teaching' and argued that 'no such science exists in England'. He contrasted 'the educational tradition of the Continent, [where] the term "pedagogy" has an honoured place... The concept of teaching as a science has strong roots in this tradition' (Simon, 1981:77). In England, by contrast, Simon argued that thinking about teaching and learning was highly eclectic, confusing aims and methods, and with no clear philosophical or conceptual underpinning for what was done in the classroom.

An enormous amount has changed in classrooms since 1981, and a great deal more attention has focused on the way teachers teach in national policy and research. In the later 1990s, the government established the national literacy and national numeracy projects, which set out firm guidance on teaching primary literacy and numeracy based on research into best practice. The projects were subsequently taken up and expanded as the national literacy and numeracy strategies in 1997, which defined a clear national approach to teaching in primary schools. In the first years of the 21st century, the principles of the primary strategies formed the basis for the secondary national strategy, extending the national programme of best-practice-informed professional development to secondary schools (DfES, 2004). There was a concurrent interest in teaching and learning in research: the Teaching and Learning Research Programme (TLRP, 2003) was the most extensive programme of educational research ever undertaken in the United Kingdom, with a series of research and dissemination projects designed to explore, research and develop teaching and learning in schools. Nonetheless, in 2004, Robin Alexander argued that there was 'still no pedagogy in England' (Alexander, 2004:19). Defining pedagogy as 'both the act of teaching and its attendant discourse', framed by 'ideas, values and evidence' (ibid), Alexander argued that national policy remained ignorant about the theoretical underpinnings of pedagogy, and was underinformed on 'evidence and debate about children, learning, teaching, curriculum and culture' (ibid:26). Grimmitt, who defines pedagogy as 'a theory of teaching and learning encompassing aims, curriculum content and methodology' makes a similar point about the introduction of the national curriculum:

> It would have been wholly feasible for the government to have introduced a system of education which gave prominence to assessment while drawing upon an extensive and respectable body of educational theory. Equally they could have also established a unified National Curriculum grounded in well-established theories of teaching and learning. Instead they chose to prescribe a framework of content and outcomes for the National Curriculum which was... free of curriculum theory and made no attempt to address the characteristics of the learner or identify what the underlying principles of education should be.

> Grimmitt, 2000:16,

For Alexander, drawing on international education practices, pedagogy has two meanings: 'the act of teaching' and a wider conceptual meaning – 'ideas, values and evidence' about 'children, learning, teaching, curriculum and culture' (Alexander, 2004:7–8). In continental Europe, 'pedagogy' is a term that refers to more than the practice and techniques of teaching in the classroom; it refers also to the theories – of children, of learning – that underpin practices. In the words of James and Pollard: 'pedagogy' expresses the contingent relationship between teaching and learning... and does not treat teaching as something that can be considered separately from an understanding of how learners learn' (James & Pollard, 2011:280).

In a study drawn from practice in history classrooms, Husbands (2010) argues that the knowledge-base for effective practice comprises the interaction of subject-matter knowledge, knowledge about pedagogic approaches and knowledge about children and their development. Similarly, Siraj-Blatchford (2008), commenting on the training of early years teachers, argues for the interactions of good subject knowledge, good knowledge of play-based approaches and free play, understanding of the pedagogy of subject-specific education and the hierarchy of conceptual development, and understanding of child development so that subject learning is approached constructively.

3. Effective pedagogies involve clear thinking about longer term learning outcomes as well as short-term goals

Few educators conceive of intended outcomes as restricted to securing good examination results. Though these are a vitally important part of the picture and, as James and Pollard put it, 'they should by no means [be] ignored' (James & Pollard, 2011:283) and neither should they take centre stage. James and Pollard urge us to question examination results:

> [Are they] good indicators of enduring understanding and capability in important domains of learning? [Do] they lead to personal fulfilment and well-being? [Do] they contribute to the economic prosperity of the nation or to greater social justice and inclusion?

James & Pollard, 2011:281

These indicate the broader outcomes with which good pedagogy should be concerned. Montgomery emphasises the importance of an overall strategic approach to pupil learning in order to focus learners' attention on what they will be doing and how they will be doing it (Montgomery, 2008).

Much of the literature on teacher effectiveness focuses on the conduct of individual lessons and lesson planning, and this has been reflected in policy interventions such as the national literacy strategy and in the assumptions underpinning much of the Ofsted inspection regime. Clearly, the quality of individual lessons is important, but it does not necessarily follow that effective pedagogy is built from a sequence of individually effective lessons. Pring (2004) argues in the context of the Nuffield 14-19 review that a critical question relates to an overall vision of what an educated person at the age of 19 needs to know, understand and be able to do. Consequently, considerable attention has been focused in the professional literature on what is often called 'medium-term planning'. This is the ability to relate individual lessons to a planned sequence of learning with a focus on overall intended learning outcomes – the lesson in the context of the scheme, the schema in the context of the annual curriculum plan, and the annual curriculum plan in the context of intended learning outcomes.

The key issue emerging from research is to consider issues of progression and outcome between short-term cognitive outcomes (gains in understanding) and longer term educational goals. Such thinking provides a rationale for the selection and positioning of individual lessons in the context of an overall view of pupil progression in learning. Effective pedagogies provide a means for considering longer-term views of learning, revisiting critical ideas as appropriate, reinforcing others, relating the introduction of new material to that where understanding is already relatively secure and connecting the acquisition of knowledge and understanding to appropriate skills. Such an approach is more likely to provide teachers and learners with coherence, and to secure long-term progression in learning.

4. Effective pedagogies build on pupils' prior learning and experience

A confident conclusion from research is that it is impossible to develop a coherent framework for thinking about pedagogy without a conception of learning, ie without a set of assumptions about how young people think and learn. Ideas about teaching and learning change. In the mid-20th century, research into children's learning and cognitive development was heavily influenced by the work of Piaget, which emphasised the way in which the child interacted with objects and experiences. Piaget's approach to child development emphasised three elements: the way a child explored her environment, the developmental stages through which children passed in making sense of the environment and the role of adults in assessing a child's readiness to learn. In later 20th-century research, Piagetian ideas were largely supplanted by constructivist

theories of learning, heavily influenced by the work of Vygotsky. In place of the lone child interacting with her environment, Vygotsky stressed the centrality of language and dialogue. Learning, for Vygotsky, depended on social and cultural interaction, and importantly, on the role of an adult who is able to scaffold a child's understanding through structured learning:

> What the child can do in cooperation today he can do alone tomorrow. Therefore the only good kind of instruction is that which marches ahead of development and leads it...For a time, our schools favoured the 'complex' system of instruction, which was believed to be adapted to the child's way of thinking...In offering the child problems he was able to handle without help, this method failed to utilise the zone of proximal development and to lead the child to what he could not yet do. [Alexander notes that the phrase 'zone of proximal development' is perhaps better translated as 'zone of potential development.']

Vygotsky, cited in Alexander, 2000:431

As Alexander's preferred translation suggests, the 'zone of potential development' is the 'distance between the child's actual developmental level... and the higher level of potential development' (Vygotsky, 1978:86).

The importance of beginning from prior understandings and perceptions is affirmed by a range of research evidence. CUREE's (2009) review of research for the Qualifications and Curriculum Development Authority (QCDA) into requirements for effectively designed curricula emphasises the importance of real-world contexts, out-of-school learning, collaborative opportunities and pupils' existing understanding at all stages of development. This emphasis on real-world contexts is a reminder that 'effective pedagogy recognises the significance of informal learning' (TLRP's principle 8) as being 'at least as significant as formal learning' (James & Pollard, 2011:299).

James and Pollard highlight the point that ignoring prior learning (whether formal or informal) can put future learning in jeopardy:

> The importance of taking account of prior learning... has been shown to be important in teaching and learning subjects such as mathematics and science where misconceptions established at an earlier stage create serious barriers to new learning and need to be tackled.

James & Pollard, 2011:290

This finding from the TLRP projects is supported by 'the psychological literature on meaning-making... [and] further evidence emerging from neuroscience' (ibid, 291). As James and Pollard acknowledge, unaddressed prior misconceptions are likely to be similarly obstructive to learning in other curriculum areas.

5. Effective pedagogies involve scaffolding pupil learning

Piagetian ideas were dominant in the 1960s and 1970s, and emphasised the importance of the child's interaction with the world and the importance of teachers' ability to assess a child's readiness for learning. Now, constructivist theories tend to be dominant in research, with an emphasis on the importance of discussion, dialogue, the social context of learning and teachers' ability to scaffold pupils' learning beyond their current stage of understanding. Scaffolds are transitional in two senses: they support a developmental change in the learner; they also change themselves in that as the learner develops a higher level of understanding, earlier scaffolds are no longer necessary and new ones are put in place to move the learner beyond the newly acquired stage of understanding.

In part, and perhaps most obviously, strategies offering intellectual support provide scaffolding for learning. Strategies offering social and emotional support are also important scaffolds for learning (James & Pollard, 2011), as are those that foster motivation. Kim and Hannafin found that students who 'failed to develop an interest [in their] study' made little progress in that they 'rarely generated arguments with supporting evidence' (Kim & Hannafin, 2011:275).

Despite the dominance of constructivist theories in research, relatively few teachers are likely to have a close acquaintance with these ideas as a direct result of their initial training or professional development, so constructivist ideas have tended to spread in a relatively haphazard way. Where these ideas have underpinned practice, the results have been successful (Van Kuyk, 2009).

Kim and Hannafin emphasise the importance of phased – or repeated – scaffolding in the form of problem-solving in the science classroom. They argue that problem-solving has 'long been considered important for learning and understanding in science' (Kim & Hannafin, 2011:255). They define problem-solving during classroom scientific inquiry as:

> deliberate activities in which students pose, investigate, and solve meaningful scientific problems by inquiring through five iterative, non-sequential phases: problem identification, exploration, reconstruction, presentation and communication, and reflection and negotiation.
>
> Kim & Hannafin, 2011:256

Here learning is conceived as process- rather than content-oriented, and scaffolds that spiral around key concepts (problems to be solved) support learner development.

In their studies of classroom science, Puntambekar and Kolodner (2005) found that five features are central to effective scaffolding for learning: common goal, ongoing diagnosis, dynamic and adaptive support, dialogues and interactions, and fading and transfer of responsibility.

Building learning is a complex business that relies on the knowledge and expertise of the teacher. The teacher must be knowledgeable about the current developmental level of her pupils and about what to teach (subject content), as well as the most appropriate strategies and structures for scaffolding. It is impossible to overstate the necessity of high-quality teachers in the effective building of learning in schools. This is the case whether the teacher takes on the role of leading or facilitating scaffolding.

In some cases, the teachers make widespread use of peer tutoring or technology-supported learning. In such cases, the teacher takes on the role of facilitator in peer- or technology-led scaffolding (Kim & Hannafin, 2011). Kim and Hannafin identify the different roles of peer-, teacher- and technology-led scaffolds:

> Through peer scaffolding, students confirmed answers, confronted and reconciled conflicts, encouraged and challenged further thinking, and shared perspectives. Through teacher scaffolding, students monitored progress, revised answers, remained on task, and refined strategies and investigated evidence. Technology-based scaffolding... helped students to externalize and visualize their understandings, find and locate resources, save and access notes, and manage cognitive loads.
>
> Kim & Hannafin, 2011:276

Despite the increasing availability of technology-enhanced scaffolding, Kim and Hannafin report that in practice 'technology has rarely been employed to promote critical thinking or higher order problem solving in everyday classroom settings' and conclude that 'teachers and students need support in order for technology to scaffold higher order scientific inquiry and reasoning' (Kim & Hannafin, 2011:257).

6. Effective pedagogies involve a range of techniques, including whole-class and structured group work, guided learning and individual activity

One of the key outcomes of research on successful pedagogies is that there are no 'magic bullets' in terms of classroom strategies (Muijs, 2010:23). Whilst there is frequently research evidence to suggest the positive impact of particular strategies, little of it is rigorously comparative between different approaches, and the evidential basis for the claims around specific strategies can be weak (Muijs & Reynolds, 2001)[2].

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2   See for example Lemov, 2010.

Advocates of particular teaching approaches make strong claims for those approaches, and are able to adduce direct effects of, for example, group work or independent learning (Pell et al, 2007). More sophisticated research suggests that the key factor in the success of many pedagogies is less their intrinsic impact than the effectiveness and rigour with which they are pursued. Galton and his collaborators argue that this is the case, for example, in relation to group work (Galton & Hargreaves, 2009; Galton, Hargreaves & Pell, 2009): there is some research evidence to assert the importance of effective collaborative learning, but equally evidence to suggest the ineffectiveness of poorly planned or implemented collaborative learning. The critical factor is therefore the fitness for purpose of particular pedagogies, and the ability of teachers to select, plan and deploy pedagogies to particular effect (Stronge et al, 2007). It is the combination of pedagogic strategies and their deployment in combination that makes for success, and this in turn has implications for teachers' ability to draw on a pedagogic range. It is not then that particular teaching approaches are effective; it is rather that with careful planning, good organisation and considered implementation they can be used effectively as part of a range of strategies (Stronge et al, 2007). As Hattie (2003) might put it, it is not strategies but the ways in which teachers use the strategies that make a difference.

7. Effective pedagogies focus on developing higher order thinking and meta-cognition, and make good use of dialogue and questioning in order to do so

There is extensive evidence that language plays a critical role in effective teaching and learning spanning several decades from the relatively early work of Britton (1970) and Barnes (1976), through the work of Sutton (1992) and Howe (1992) to the more recent work of Alexander (2004). Early work documented the ineffectiveness of what Barnes called 'transmission teaching', which frequently focused on extensive teacher delivery of information, and paid insufficient attention to the classroom and pupil processes by which material was mastered. Subsequent work, including that of the National Oracy Project, explored in detail the pedagogies of pupil talk and some of the characteristics of more and less successful pupil talk for effective learning (Norman, 1992). More recent work has stressed that whilst exploratory pupil talk can support highly successful concept formation and investigative work, such work needs to be clearly planned, effectively structured and to play a part in a wider frame of thinking about learning (Galton et al, 2009; Mercer, Wegerif & Dawes, 1999).

Extensive work has focused on questioning. Wragg and Brown (2001) claimed that teachers ask up to two questions every minute, and so up to 400 in a day, around 70,000 a year, or two to three million in the course of a career, and calculated that questioning accounts for up to a third of all teaching time, second only to the time devoted to explanation. However, Wragg's classroom research suggested that anything between 30 and 60 per cent of the questions asked are procedural rather than learning based: in simple terms, they tend to be of the 'Is your name on it?' or 'Have you finished yet?' variety. There is extensive classroom research to suggest that relatively few teacher questions demand higher order thinking. Research in the later 1980s and early 1990s found proportions of between 4 per cent and 8 per cent (Kerry, 1998) and Wragg argues that this figure is consistent with much earlier empirical studies in 1912, 1935 and 1970. The prevalence of lower order questions is frequently associated with their apparent ability to generate momentum, though in practice such questioning merely requires pupils to recall information in the form in which it has been presented to them.

For these reasons, work has focused on structures that support the development of higher order questioning. Cotton (1988) reviewed 37 United States research projects on questioning across the US and offered two general conclusions. First, that at all ages, a combination of higher and lower order questions was the most effective method to generate successful learning, and second, that with pupils of top primary or secondary school age, increasing the proportion of higher order questions to around 50 per cent brought significant gains in terms of student attitude and performance. Bloom's taxonomy of educational objectives (1956) has been used as a basis for arguing that successful questioning moves through a hierarchy from knowledge recall though comprehension, analysis and application, to synthesis or evaluation. Others have argued that this is an over-formal model which encourages a focus towards the lower end of the taxonomy, particularly for lower attaining learners, and that effective pedagogies focus explicitly on open-ended questions at the upper end of the taxonomy (Morgan & Saxton, 1994).

Recent work has been extensively influenced by Alexander's (2001) work on teaching and learning in five cultures, and his subsequent development of the concept of 'dialogic teaching'. Dialogic teaching is an approach to teaching which in a highly disciplined fashion harnesses the power of talk to stimulate and extend pupils' thinking and advance their learning and understanding. It is as distinct from the question-answer and listen-tell routines of traditional and so-called interactive teaching as it is from the casual conversation of informal discussion (Alexander, 2006). Dialogic teaching involves considerably more than the conventional focus on speaking and listening (Alexander, 2003), since it is as much about the teacher as the learner. It relates to teaching across the curriculum, and focuses on the quality of interaction and the sustained level of such interaction as a means of supporting higher quality pupil thinking.

8. Effective pedagogies embed assessment for learning

The evidence that formative assessment is a powerful lever for improving outcomes for learners has been steadily accumulating over the last quarter of a century. Over that time, a series of substantial reviews of research, synthesising several thousand research studies, have documented the impact of classroom assessment practices on students (Black & Wiliam, 1998; Hattie & Timperley, 2007). While many of these reviews have documented the negative effects of some assessment practices, they also show that, used appropriately, what Wiliam called 'embedded formative assessment' has considerable potential for enhancing student achievement (Wiliam, 2010). However, Wiliam and Leahy have also drawn attention to the wide gap between assessment for learning theory and assessment for learning practice (Leahy et al, 2005). Wiliam (2009) summarises some of the definitions for formative assessment (and assessment for learning) that have been proposed over the years, and suggests that the most comprehensive definition is that adopted by Black and Wiliam:

> Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken in the absence of the evidence that was elicited.

<div align="right">Black & Wiliam, 2009:89</div>

The importance of effective feedback strategies is further enhanced by Hattie's (2008; 2012) wide-ranging review of some 800 meta-analyses of over 50,000 studies of the influences on pupil learning. Hattie describes exceptional effect sizes for successful assessment for learning and feedback strategies. A key finding of the study is that the most powerful single influence enhancing achievement is feedback. The quality of feedback is critical: what is needed is good-quality feedback and that feedback has the greatest effect when teachers receive more and better feedback about their teaching. The ripple effect back to the student is then high (Hattie & Timperley, 2007). Drawing on a series of meta-analyses, Hattie concludes:

> Achievement is more likely to be increased when students invoke learning rather than performance strategies, accept rather than discount feedback, benchmark to difficult rather than easy goals, compare themselves to subject criteria rather than to other students, possess high rather than low efficacy to learning, and affect self-regulation and personal control rather than learned helplessness in the academic situation.

<div align="right">Hattie, 2003:47</div>

According to Locke and Latham (1992), goals inform individuals as to what type or level of performance is to be attained so they can direct and evaluate actions and efforts. Feedback allows them to track performance in relation to their goals so that adjustments in effort, direction and even strategy can be made as needed. Assigned goals have impacts on self-efficacy and confidence, which in turn affects the choice of difficulty of goals.

9. Effective pedagogies are inclusive and take the diverse needs of a range of learners, as well as matters of student equity, into account

The expert review of the framework for the national curriculum in England (DfE, 2011) argued that there are stark differences between the conventional approach to thinking about the relationship between curriculum and pedagogy in England and that:

> A distinctive feature of some of the high-performing systems...appears to be a radically different approach to pupil progression and to differentiation. Crude categorisation of pupil abilities and attainment is eschewed in favour of encouraging all pupils to achieve adequate understanding before moving on to the next topic or area. Achievement is interpreted in terms of the power of effort rather than the limits of ability.

DfE, 2011:45

This concern with pupil performance irrespective of issues of ability or attainment reflects important recent research in England, and was extensively promoted by Learning without limits (Hart et al, 2004), which considered how it is possible to create inclusive learning environments without relying on ability or attainment as organising principles for teaching. Hart et al describe the relationship between teaching and learning in terms of the core idea of transformability. Transformability asserts the principled belief that 'all children's capacity to learn can change and be changed for the better as a result of what happens and what people do in the present' (Hart et al, 2004:166). This informs thinking about the relationship between teaching and learning in two ways: that the present is the future in the making; and that 'nothing is neutral' (ibid:170). With this understanding of the interdependence between teaching and learning and its effect on achievement, it becomes unacceptable to predict or predetermine a learner's ability or capacity to learn. Instead, learning is achieved as a result of relationships within communities as expressed through the principles of co-agency, trust and everybody:

— Co-agency: the notion of transformability, and the principle of 'nothing is neutral', demands that the responsibility for learning is shared between teacher and learner. A central assumption of transformability is that teachers cannot do it alone. They are powerless without the participation of learners.

— Trust: for learners to take up the invitation to co agency, teachers must trust that they make meaning, and find relevance and purpose through their experiences. Learners need to know that they are the ones who can tell the teacher about how they learn. Trust enables a shared responsibility for the transformability of young people's capacity to learn, and the sharing is seen in the coming together, not the dividing of responsibility.

— Everybody: transformability and the practical principles of trust and co agency demand that there is also the 'ethic of everybody': teachers have both the opportunity and responsibility to work to enhance the learning of all. In the relationships that support teaching and learning, nothing is neutral: whatever the teacher does will have an effect, positive or negative. Teachers are in a privileged position to act to change things for the better. Choosing to plan opportunities for learning that will be part of a shared experience establishes an understanding of achievement through participation in a community, and equity is demonstrated through unity, not sameness.

Florian and Linklater (2010) develop Hart et al's ideas into a framework for pedagogy which involves a shift in thinking from an approach that works for most learners existing alongside something additional or different for those (some) who experience difficulties, towards one that involves providing rich learning opportunities that are sufficiently made available for everyone, so that all learners are able to participate in classroom life.

Concluding comments

This review has set out nine claims about what makes for great pedagogic practices drawing on a range of research evidence. The evidence which has been reviewed suggests that outstanding pedagogy is far from straightforward. Classrooms are complex, multi-faceted and demanding places in which to work and successful pedagogies are correspondingly sophisticated. Highly successful pedagogies develop when teachers make outstanding use of their understanding of the research and knowledge-base for teaching in order to support high-quality planning and practice. The very best teaching arises when this research base is supplemented by a personal passion for what is to be taught and for the aspirations of learners.

There is a robust evidence base which helps to identify the ingredients of outstanding pedagogic practices. However, truly effective practices depend on teachers making active connections between the ideas from research. The most effective successful classroom practices work these ideas together in systematic and sophisticated ways, and the best teachers are active in building relationships between them. Understanding the ways in which these relationships are built – what Leahy et al (2005) have called 'minute-by-minute classroom practices' – is itself a fruitful area for both further research and improving practice.

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