

Boyle, B and Charles, M (2014) *Formative Assessment for Teaching & Learning*. London: Page Publications Ltd.

3

Differentiation

In this chapter we introduce differentiation as a planned, flexible process. We consider various misconceptions about differentiation, and set out alternatives.

Differentiation, although the key strategy of formative teaching, learning and assessment, is as much misunderstood as is formative assessment itself. Differentiation is synonymous with 'setting' in many teachers' practices (the 'locking' of pupils into sets from the cradle to the grave – see Boaler 2005) or with the school of thought which differentiates by 'outcome' or 'has something extra' for the 'fast finishers' to 'do'. The research literature offers some solutions to unlocking this pedagogical principle – although many teachers still require exposure to modelling in their specific pre-service and in-service training on the technique. Allal & Lopez (2005) remind us that 'Differentiation of instruction is planned rather than just being added on after observing difficulties' (p. 246), while Perrenoud is clear that 'If formative assessment is carried out on a fairly regular basis, the result is pressure to differentiate' (Perrenoud 1991, p. 89).

In the mid 1960s there was a greater understanding and insistence on individual pupils' interests and needs. The current thinking of that time favoured systematic differentiation in teaching: 'Teachers will have to adapt their methods to individuals within a class or a school. Only in this way can the needs of gifted and slow learning children and all those between the extremes be met' (Central Advisory Council for Education 1967, p. 460). Since 1988 (Education Reform Act – introduction of the National Curriculum in England and Wales) government reforms have shifted the focus towards achievement and standards. These aims are linked in official documents with particular pedagogic practices, namely with whole class teaching, and with various forms of ability grouping, for example setting: 'Unless a school can demonstrate that it is getting better than expected results through a different approach, we do make the

presumption that setting should be the norm in secondary schools. In some cases, it is worth considering in primary schools' (Department for Education 2011, p. 38). Differentiation is understood here as the process by which teachers adapt curriculum objectives, teaching methods, learning activities, resources and assessment to match the educational needs of individual pupils. Learning can be differentiated in many ways: by curriculum structure, course content, learning tasks, teaching approach, pace of learning, support, outcome and assessment. (See Figure 3.1 below)

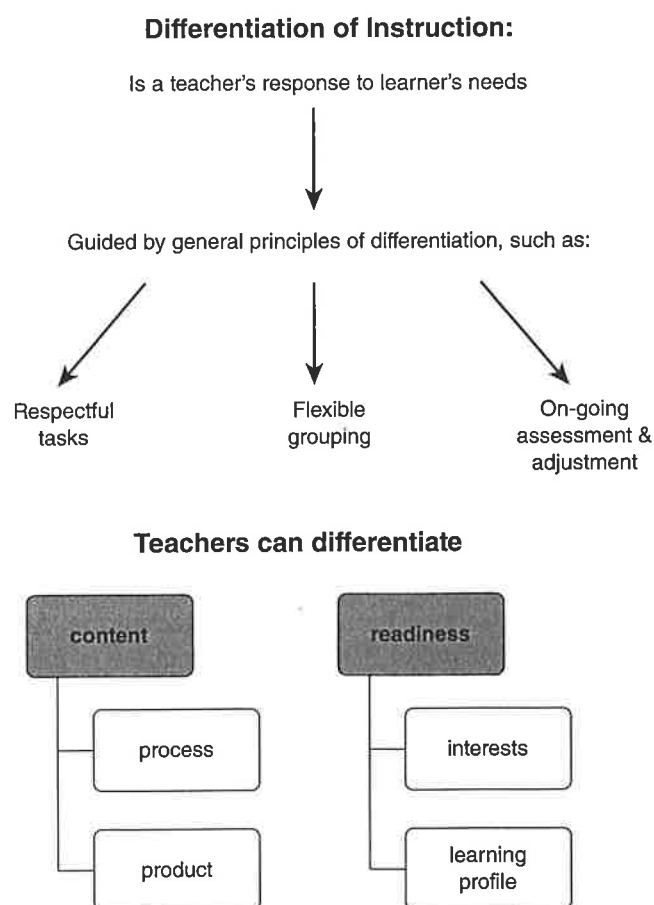


Figure 3.1 Differentiation of instruction

In any class, children are confronted with situations intended to make them learn: some do, some do not and others do to an extent. The classic approaches to difficulties in learning and failure in school look for a solution in the make-up of the child: the level of development, cultural and linguistic capital, knowledge previously acquired, motivation, ambition, attitude towards knowledge, family background, etc. In summary, schools provide

schools. In
rtment for
the process
ods, learn-
al needs of
ys: by cur-
oach, pace
elow)

standard learning situations, which, sadly are fruitful only for those children who have a specific profile which includes all the prerequisites for learning. For example, the teaching of reading at the beginning of a pupil's school life is designed for children with a normal intellectual, perceptual and motor development who wish to learn to read and whose family background encourages the written word and has almost certainly begun the pre-school reading process with the child. It should not therefore be surprising that a year or two later those children know how to read well enough to make 'the expected' progress through a primary school curriculum. The other pupils, not within the above socio-economic profile, proceed more falteringly, with weaknesses. These weaknesses in one discipline or domain will have an effect on all their learning as the curricular programmes assume that pupils know how to read from the second year of compulsory education onwards. 'Difficulties in schooling can be explained in the differences between pupils often described as failings or shortcomings in pupils who do not reach the norm: socio-cultural handicap, linguistic poverty, poor family background and lack of motivation and support, so many expressions which stigmatise pupils in difficulty' (Perrenoud 1998, p. 93). Bourdieu (1966) demonstrated that these difficulties do not explain inequality. 'Rather it is because the school ignored them in accordance with an indifference to difference which is embedded in the structure of teaching programmes as well as in the culture and practices of teachers' (Perrenoud 1998, p. 93). Bloom (1988) stated that 80% of pupils could manage the programmes if they were placed in learning situations which were optimal for them.

The question becomes, given the diversity of 6-year-old children in terms of level of development, relation to the written word or development of language, how do teachers lead them to an adequate reading level a year or so later? Differentiated teaching is an answer to the question. It is achieved through a diversified approach, that is, daily in learning situations with which the children are confronted, not just by noting differences, 'diversity of approach at the service of equality in the face of knowledge' (Perrenoud 1998, p. 93). Avoiding all pupils doing the same learning at the same time is not an aim in itself; it is only a consequence of differentiated teaching which attempts to locate each pupil in a learning situation which is optimal for her/him. 'To the extent that all pupils do not have the same abilities nor the same needs nor the same way of working, an optimal situation for one pupil will not be optimal for another' (Perrenoud 1998, p. 94).

The diversification of approaches has to be matched and fit for each particular case.

In a hospital one does not attempt differentiated treatment for its own sake; one only attempts to give each person what suits them best and the inevitable result is a differentiation in therapy. One can write a simple equation: diversity in people + appropriate treatment for each = diversity in approach. (Perrenoud 1998, p. 94)

o make
: classic
olution
inguistic
ttitude
rovide

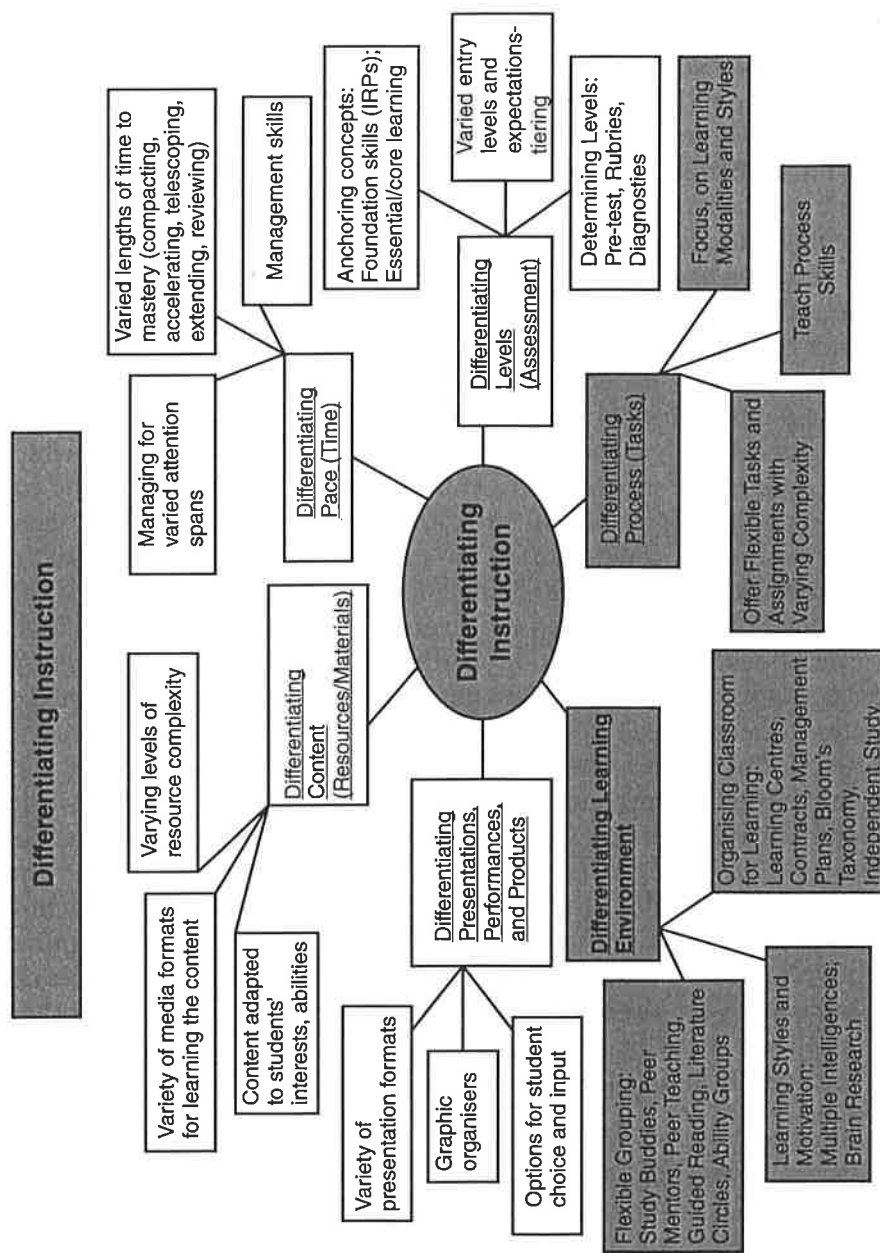


Figure 3.2 Differentiating instruction

Differentiation is simply the adjustment of didactic treatment to suit the individual pupil's needs. It has a simple premise – that there is no point locating children in a situation where the teacher knows in advance that the child will not learn very much.

The skills involved in regulation depend as much on the capacities of observation and dialogue of the teacher as the way he or she understands the cognitive obstacle in the mind of the child and subsequently analyses what prevents the child from overcoming the obstacle. The teacher requires the ability and the motivation to put him/herself in the place of the person who does not know, does not understand and sees no solution. These skills involve formative assessment in the richest sense of the term. These skills 'can only be enriched by a didactic culture based on experience as well as research which allows the teacher to mould not only the understanding to be developed but the way it will develop in the pupil's mind' (Bain 1988). In simpler terms, formative assessment furnishes the intention of regulating the learning process, whereas the didactic approach furnishes the terms of reference appropriate to the discipline and the knowledge in question.

How does a teacher organise the parallel teaching of 30 pupils within the constraints of school programmes and timetables?

Optimising the learning situation for each child must not be confused with the isolation of each child in individual tasks. Differentiated teaching does not consist of a succession of individual lessons nor is it a permanent arrangement of individualised learning, with each child being occupied with his/her own activities. The problem then becomes based on the reconciling of the individualisation of the learning trajectory, a condition of the optimisation of the learning situations for each child. On the other hand, the collective and interactive character of a significant number of the tasks is likely to produce interesting learning situations.

Undertaking differentiated teaching in schools involves the breaking up of levels and classes and the creation of broader areas of instruction in time and space, entrusted to teaching teams who will collectively take in hand for a period of at least two years, a group of children equivalent in number to two whole classes. 'Classroom management' is replaced by a complex organisation of work in which monitoring individual progress and didactic input poses difficult problems. Increasing the complexity and size of the input is vital to achieve a critical mass large enough to differentiate usefully; at the same time this development can cause a

Figure 3.2 Differentiating instruction

Teach Process Skills

Varying Complexity

Contracts, Management Plans, Bloom's Taxonomy, Independent Study

Motivation: Multiple Intelligences, Brain Research

crisis in professional skills, routines, organisation, the familiar groupings and trappings of the class situation, which could cause less learning and greater inequality if the teacher does not control for its negative effects. All of which makes it imperative to consider 'new tools' for collective development of the mechanisms of teaching programmes which presuppose different ways of organising schools and new forms of professional co-operation (Perrenoud 1997, 1998).

Case study

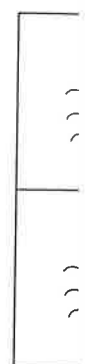
This study focused on 12 socially disadvantaged English and French classrooms and was based on two weeks of observations in each class (Raveaud 2005).

Context: Every one of the English teachers systematically provided differentiated tasks for written work, whereas not a single one of their French colleagues did so. All the English classes were mixed-ability classes. There was no streaming nor setting observed and the main form of grouping was within-class grouping of same-ability pupils. There were four or five such same-ability groups per class. Research based on wider samples indicates that these observations are typical of English classroom practice, with within-class ability grouping in the majority of classes (Blatchford et al. 2001; Galton et al. 1999; Hallam et al. 2004; Kutnick et al. 2002). In the French schools there was barely any differentiation: pupils were given identical tasks to complete and most work was undertaken either in the guise of whole class instruction or as individual work from a set book or worksheet handed out to each pupil. Depending on the class, pupils were seated in rows facing the whiteboard or grouped around tables. But in either case they worked individually and simultaneously on the same task (Alexander 2001). Though there were inevitably differences in the outcomes produced by the pupils, very rarely did teachers allocate pupils tasks tailored to their individual needs.

Example: Mathematics tasks were given to 5-year-old pupils in both countries. The French exercise consisted of a worksheet focused on the 'number 6', written by the teacher and handed out to the whole class at the same time. Interestingly, the class teacher referred to this task as 'differentiation' – yet there were no differences in the task required to be completed by all the pupils, regardless of their knowledge and understanding of number. In the class in England, the pupils were divided into four groups – Group 1 being the lowest attainers – and each group was supplied with a task that the teacher considered to match the pupils' level of understanding. Therefore the work was differentiated for four same-ability groups of pupils.

The research indicated a range of differentiation strategies used in the classes in England. These were based on the quantity, complexity and

degree
form of
times c
attained
require
ing tas
require
lines in
plexity.
count t
'spots'
peers in
degree c
cess of



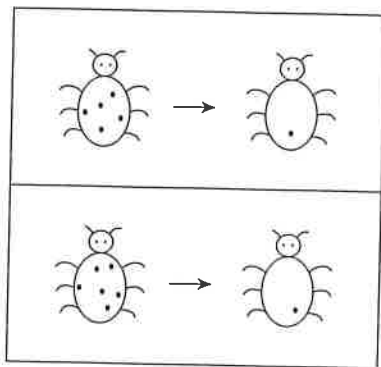
Group 1
ladybird
the same
the left



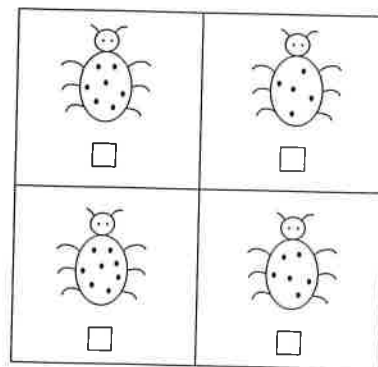
Group 2
each with
on the same
spots in

Figure 3.3

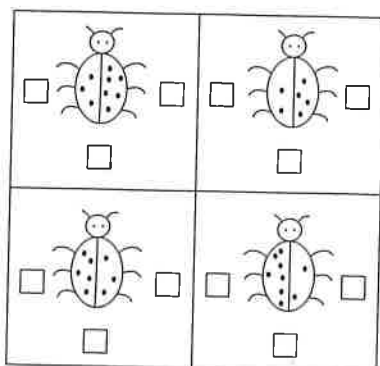
degree of abstraction of tasks. Quantitative differentiation is the basic form of differentiation: it concerns the length of a task or the number of times children are to repeat it. In this example, Group 1 (i.e. the lowest attainers) had a drawing of two ladybirds to complete, compared to the requirement of four ladybirds in the other groups in the class. For writing tasks, the teacher indicated the differing quantities of writing required by each pupil/group by the drawing of a different number of lines in pupils' writing books. Tasks can be differentiated by their complexity. Depending on which group they are in, pupils may need to count up to 6, 8 or 10. Also, Groups 3 and 4 were adding two lots of 'spots' corresponding to the wings drawn on the ladybirds while their peers in Groups 1 and 2 only counted one lot of spots. Variation in the degree of abstraction reflects the fact that 5-year-olds are still in the process of acquiring symbolical codes of representation such as words and



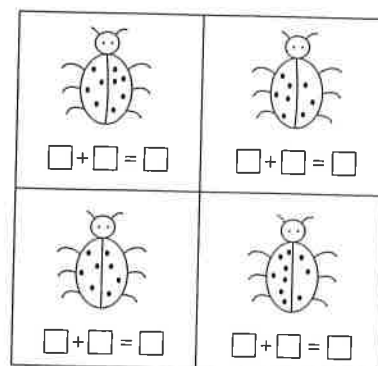
Group 1: children are to add spots to the ladybird on the right so that it contains the same number of dots as the one on the left



Group 2: count the number of spots and write it in the box



Group 3: count the number of spots on each wing, write the number in the box on the side, and the total number of spots in the box underneath



Group 4: count the number of spots on each wing, write the number in the box and add up the total

Figure 3.3 Differentiated tasks

numbers. In Group 1, pupils do not need to resort to numbers: they only need to identify a quantity and to reproduce it. Group 2 represents the next step up in the teacher's learning hierarchy, linking a quantity and its symbolical representation – the corresponding number. Groups 3 and 4 are progressing towards the formalised presentation of 'sums' as types of calculations. In a writing exercise this type of differentiation leads to some young pupils telling a story (narrative) by drawing a picture – while other pupils will have advanced to writing text.

The interviews with the French and English teachers suggest that the strong contrasts observed regarding the use or non-use of differentiation are not experienced as pedagogical choices but as necessities. The systematic creation of same-ability groups in England reflects a widely held assumption that it is absurd to expect all children to address the same levels of difficulty. The need to differentiate seemed to require no justification in the minds of the English teachers. In contrasting her situation with that of her French colleagues one teacher stated that it would be easy for her simply to provide all her pupils with the same task but that would be unrealistic and unfair on the pupils. 'It's just got to be differentiated'. French teachers rarely or never adapted tasks to cater for the range of attainment in the class. Some forms of support for pupils with special educational needs exist but these take place outside the classroom with specialised staff. In the course of the daily teaching programme, French teachers gave all pupils identical tasks to fulfil – only one of the teachers in the sample claimed to use differentiated pedagogy. However, in the course of the fortnight of observation, she did not once adapt tasks to the perceived ability or needs of a particular pupil or group of pupils. She explained her view of differentiation:

I differentiate work because I have children who say 'I don't know, I can't do it'. So I make the situation less threatening to them. I don't let them get bogged down in their mistakes. I sit down beside them if they need help and we go over it until they have understood. If they need to have it explained three times, then that is what happens. (Raveaud 2005, p. 469)

This teacher differentiated the means – by giving the 'weakest' more support – to maintain the same ends for all. Differentiating means rather than ends appeared to be the dominant way in which French teachers dealt with the diversity in the pupils' learning needs. There were great differences in the time French pupils took to complete identical tasks. 'The hares had finished before the tortoises had settled down to work' (Raveaud 2005, p. 469). This led to problems which the teachers in this study resolved through two strategies: timing and extra support. Egalitarian ideals meant that setting the 'faster' pupils extra work was not an option, as this would be seen as widening the attainment gap inside

the
ing
tas
sup
as i
a p
nis
'Th
the
(Ra
cla:
in l
(to
Fre
for
sm
chi
as :
(wi
ent
deg
deb
soc
pup
clai
at s
val
era:
tha
cap
boc
Pas:
this
the
196

v
n
e
w
le

Cho
but

the class. Instead, teachers usually proposed gap-fillers such as silent reading, colouring-in or playing, until all the other pupils had finished the set task. Secondly, although most work was individual, weaker pupils got support from their teacher or their peers. Much peer support was observed as involuntary on the part of other pupils, particularly in the cases where a pupil copied the work of the pupil sitting next to him/her. This mechanism has some beneficial effects as one French teacher pointed out: 'Those who are lost latch on to the others. If they have not understood the task, they can see what their neighbour is doing and then off they go' (Raveaud 2005, p. 469). The absence of differentiation in tasks in French classes meant that some pupils were under more pressure than their peers in England, but teachers in France compensated for this lack of flexibility (to some extent) by introducing some forms of support. Although the French teachers agreed that it might be necessary to take special measures for one pupil exceptionally, their explicit aim was for differences to be smoothed out. Although French teachers were willing to give individual children extra support, time and explanations, differentiation appeared as a last resort, in contrast to England where it is used more regularly (with a range of definitions). French teachers were reluctant to set different tasks and targets for different pupils, viewing differentiation with a degree of suspicion as a means of perpetuating social inequalities. French debates around the topic of differentiation tend to focus on issues of social equality, rather than its effects on academic achievements or on pupil disaffection. Promoters and opponents of differentiation both claim that their approach is the one that best contributes to democracy at school and in society (Zakhartchouk 2001, p. 34). This reflects the core values of the French education system. Schools are expected to strive to erase, as far as possible, differences that stem from social background, that is, middle-class pupils will arrive at school with greater cultural capital in the form of more developed vocabulary, more familiarity with books, more abstract notions than their working-class peers (Bourdieu & Passeron 1970a). Critics of differentiation argue that teachers following this approach would be promoting a self-fulfilling prophecy, leading to the reproduction of social inequalities in society (Rosenthal & Jacobson 1968). Alexander cautions that:

We should be alert to the power of pedagogy to deliver messages which may or may not be consistent with the educational goals which we espouse, just as we should understand that in importing teaching methods which we find admirable we may also import values with which we feel less comfortable. (1997, p. 25)

Choosing whether or not to differentiate rests on pedagogical concerns but also on wider views of pupils' social, cultural, developmental and

learning needs and of the school's educational aims. In summary, differentiation is NOT 'setting', in which pupils are consigned to a 'high' or 'low' ability group for a sustained period of the school year – or even longer. The teacher will review each pupil's learning situation (i.e., did today's guided group work for that pupil) and then make a fresh decision on group composition for the following day/subsequent lesson. The authors are not advocating in any way the 'locking-in' of pupils to permanent labelling or learning situations: group compositions will always be case or subject specific. However, the French position leads to the transmission of a highly valued body of knowledge and culture and to the development of citizens. The English ideal for differentiation in practice rests on respect for the individual and the needs of the pupil. Through the experiences of social construction which the pupils participate in and internalise, schools participate in a wider process of meaning making, shaping pupils' views of their society and their place in it (Raveaud 2005).

What is the relationship between differentiation and 'good' pedagogy?

Alexander posits a dynamic, evolving definition of pedagogy:

Pedagogy is the observable act of teaching together with its attendant discourse of educational theories, values, evidence and justifications. It is what one needs to know, and the skills one needs to command in order to make and justify the many different kinds of decisions of which teaching is constituted. (Alexander 2008, p. 29)

Similarly Alexander's definition is likened to Edwards's (2001) in that it has as its core ideas about learners, learning and teaching, and these are shaped and modified by context, policy and culture (Alexander 2008).

The complexity of the subject is such that within the literature there is a range of definitions. However, any discussion on pedagogy 'cannot be just a matter of disembodied technique it reflects and manifests values. In turn these are not merely the personal predilections of individual teachers, but the shared and/or disputed values of the wider culture' (Alexander 2008, p.19). Rowsell, Kosnik and Beck (2008) suggest that 'pedagogy refers to an educational position or approach that includes both theory and practice' (p. 110). This definition clearly focuses on the strength or weakness of the connection between theory and practice in the teacher's pedagogical development. In short, there should be no end point in the teacher's development as a practitioner, and for that

devel
has t
(2001
tions
[thos
know
at the
vidua
which

How
is the
short
and a
on wl
focus
and s
as mu
is as c
emati
2008,
captu
childr
pedag
take q
their l
clearly
is wor
needs,
devolv
word
new ic
and fa
p. 162
the c
perfor

The t
rich -

To star
layerec
pedag
and th

development to produce a truly reflective formative practitioner there has to be a synthesis between theory and practice. However, Edwards (2001) develops this further as 'teaching is using informed interpretations of learners, knowledge and environments in order to manipulate [those] environments in ways that help learners make sense of the knowledge available to them' (p. 163). For Edwards the pupil is located at the centre of not only the curriculum, but of what that unique individual brings to those environments; the teaching is then informed, which leads to a differentiated pedagogy.

However, another missing component from both of these definitions is the failure to acknowledge the pupil within the affective domain, in short acknowledging that social development is equally important as, and a primary factor in, cognitive development, but the latter is the area on which curriculum and assessment and therefore pedagogy currently focuses. Alexander (2008) cautions against a simplistic interpretation and states that: 'For children then the preferred indicators are affective as much as cognitive and instrumental ... focussing on affectivity alone is as conceptually and empirically restrictive as is the treating of mathematical test scores and educational outcomes as synonymous' (Alexander 2008, p. 3). In support of this Hayes (2008) suggests that 'pedagogy captures the multi-layered and dynamic practice necessary to support children's holistic development' (p. 436). The importance of a nurturing pedagogy is recognised by Reeves (1993) who argues that 'if we are to take quality seriously we have to get closer to our learners, their needs, their learning styles and their motivation' (in Dadds 2001, p. 53). This clearly identifies the importance of the teacher understanding that s/he is working with 25 discrete individuals all with learning and emotional needs, not just delivering an atomised subject menu as centrally devolved. Going beyond Rowsell et al. (2008), Wink suggests that the word pedagogy involves human interaction and joy, and playing with new ideas, challenging 'all educators to look beyond the complexities and familiarities of their own teaching' (Wink 2005, in Graziano 2008, p. 162). Within the current climate this position seems unobtainable, as the dominant discourse is one of controlling pedagogy and performativity.

The teaching paradigm: 'Knowledge rich – knowledge poor'

To start with a simple question about something as complex and multi-layered as the science of teaching: why do some teachers have a strong pedagogical base while others do not? Through our questionnaire survey and the resultant school visits to observe teaching, we have evidence of a

profile of teachers without a learner-centred pedagogy (Boyle & Charles, 2010), reliant on prescriptive, centrally disseminated materials through which, 'politicians and bureaucrats are demanding greater conformity of education offerings which are transparent and superficially testable' (Patrick et al. 2003, p. 239). This period of change in the pre- and post-Education Reform Act (DES 1988) years is illustrated in Barber's (2002) 'knowledge poor – knowledge rich, prescription – judgement' matrix, as shown in Figure 3.4.

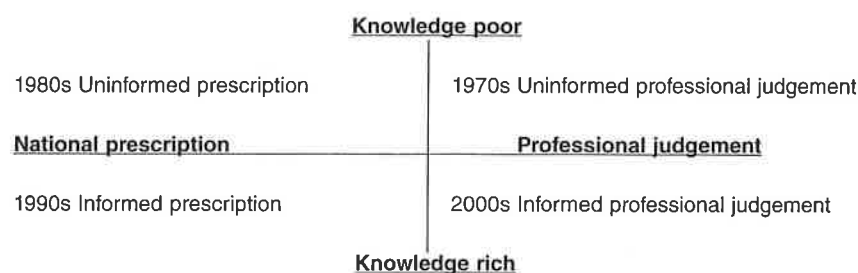


Figure 3.4 The knowledge/poor, knowledge/rich matrix of teacher development

Barber's matrix (he was then Director of the Ministry of Education's Standards and Effectiveness Unit) provides a model of the dominant political influence of successive UK governments on teachers' pedagogy, and his advice to the government on how to improve 'standards' was based on the belief that 'the education system will never be world class unless virtually all children learn to read, write and calculate to high standards before they leave primary school' and that 'at the time of the 1997 election the national data showed how far we were from achieving this goal' (Barber 2001, p. 23). He also suggested that the initial stages of such government-imposed top-down change would challenge teacher ownership of such change:

winning hearts and minds is not the best first step in any process of urgent change ... sometimes it is necessary to mandate the change, implement it well, consciously challenge the prevailing culture ... the driving force at this critical juncture is leadership ... it is the vocation of leaders to take people where they have never been before and to show them a new world from which they do not want to return. (Barber quoted in Mahoney et al. 2004, p. 452)

This emphasises that 'the teacher is no longer the autonomous self-directed individual, but rather someone who interacts at the boundaries of expertise, knowledge specialism and state control' (Eraut 1994, in

Patrick et al. 2003, p. 243). The dominant pedagogical model throughout the period has been and still is that of substantial whole class teaching, which Myhill (2006) suggests causes 'an orientation towards coverage and elicitation of facts rather than the creation and co-construction of interconnected learning' (p. 34) and evidences no 'substantial use of progressive child centred methods' (Gammage 1986, p. 107). As Alexander stated in his critique of the government's research which underpinned the National Strategies and the adherence to whole class teaching: 'direct instruction through whole class teaching is the commonest teaching approach world-wide so it is as strongly associated with low educational standards as with high' (Alexander, 2004, p. 17).

Origins of a teacher-centred pedagogy

Galton, in his follow-up to the ORACLE studies of the 1970s, found that teacher-centred pedagogy had increased between 1976 and 1996 (Galton et al. 1999, p. 24). If teachers are, according to Eraut (1994, p. 243), no longer 'autonomous self-directed individuals', this suggests a movement from a position when teachers were autonomous. The next question then has to be: how was that autonomy eroded and ultimately dismantled? The basis for the government intervention, which began in the mid-1980s with the legislation of a prescribed National Curriculum (1988 Education Reform Act (ERA)), the introduction of national testing (1991) and regular inspection of schools (1992), and resulted in a standards-driven agenda (DfE 2011), was a developing understanding of the importance of being seen to be intervening effectively in education as a political message to the electorate. Throughout this process teachers' autonomy was being reduced and they were being pushed towards performativity (Patrick et al. 2003), becoming more compliant in utilising the centrally developed materials which focused on the production of test outcomes (Alexander 2004; Brehony 2005; Hall & Harding 2002; Patrick et al. 2003; Topping 2001; Wyse et al. 2007) at the expense of child-centred pedagogy.

In 1991 Kenneth Clarke, then Education Minister, defended the government's position with an attack on his perceived critics, 'the British pedagogue's hostility to written examinations of any kind can be taken to ludicrous extremes. The British Left believe that paper and pencil examinations impose stress on pupils and demotivate them' (Clarke 1991, in Ball 1994, p. 40). Clarke here uses the word 'pedagogue' as a term of abuse (Edwards 2001, p. 164) to reinforce the philosophy of the right, that is that testing is the sole way of measuring children's learning and the only way forward. That message of central government became the dominant discourse throughout the 1990s. Clearly there was a shift

of emphasis in pedagogy as the centrally imposed methodologies eroded and marginalised child-centred education. The newly instituted Office for Standards in Education (Ofsted) was now used by central government to support their version of pedagogy. Ofsted's review of school inspection data for the years 1994–99, 'remarked with approval on the revival of the more traditional whole-class, brisk, subject-specific, directly-focused method of teaching' (Ofsted 1999, paras 4.1 and 4.5). This is reinforced by research evidence (Kutnick et al. 2002) which reported that teachers in the 1990s experienced pressure towards an increased amount of whole class teaching 'at the expense of a more interactive pedagogy' (in Osborn et al. 2000, p. 140). In summary the reforms of the 1990s introduced 'performative regimes into English primary schools. Legislated changes, the stated purpose of which is to raise standards by supporting and improving teachers have resulted in the introduction of assessment regimes linked to accountability systems' with 'each teacher being set measurable performance objectives which are systematically reviewed' (Troman et al. 2007, pp. 549–50).

In 1997 the Labour government replaced 18 years of Conservative administration, announcing its arrival with a renewed focus on 'education, education, education' (Blair 1997, BBC News), but with the retention of Conservative initiatives such as national testing and the piloting of literacy and numeracy strategies. Ofsted oversaw the arrangements for raising standards and it did so with clear calls for explicit, direct, whole-class teaching. 'The grip which Ofsted exerted on the teachers and teacher educators was formal and bureaucratic' (Hartley 2002, p. 90). For the Labour government 'the raising of standards has become something of a clarion call. League tables abound. Performance – and its measurement – has become the watchword. There has been a pedagogical drift back to basics, back to whole-class, direct teaching' (Hartley, 2002, p. 90). Teachers 'play safe, even though some remain committed to individualised work' (Pollard et al. 1994, in Hartley 2002, p. 90). The National Literacy Strategy (1998) and National Numeracy Strategy (1999) were formally introduced and strongly influenced pedagogy with recommendations such as 'a daily mathematics lesson to all pupils, lasting between 45 and 60 minutes depending on pupils' ages. Teachers should teach the whole class together for a high proportion of the lesson ...' (DfEE 1998, p. 2, in Brown 1998, p. 362). Hamilton asserts that 'good practice cannot be handed over ready-made, like ... technical operatives to receive packages of pedagogy from the outside which can be "read off" and "read in"' (Hamilton 1994, in Dadds 2001, p. 48). However, performance management systems are in place throughout all phases of the schooling system to ensure that these technicians can be evaluated for surface accountability (Strathern 2002; Troman et al. 2007).

What was all this doing to pedagogy?

'Education can either socialise students into critical thought or into dependence on authority' that is, according to Shor (1992), 'into autonomous habits of mind or into passive habits of following authority, waiting to be told what to do and what things mean. Unfortunately in traditional schooling the latter often occurs' (in Graziano 2008, p. 153). According to this definition the teacher's pedagogical positioning is at the centre of the 'how' and 'what' of teaching and learning. In short, pedagogy is dichotomous, it can encourage and support growth for children, locate and empower children at the centre of learning, or it can stultify and reduce the process to following externally prescribed schema (Dadds 2001; Dunphy 2008; Edwards 2001; Macleod & Golby 2003).

However, the 'how' and 'what' of teaching for Edwards (2001) is 'an intense, complex and discursive act which demands considerable expertise' (p. 163); for Siraj-Blatchford (2004), 'it is the practice (or the art, the science, or the craft) of teaching ... it refers to the interactive process between teaching and learning and the learning environment (which includes family and community)' (in Dunphy 2008, p. 56). For McFarland (1999) 'teachers shift from control of knowledge to creation of processes whereby students take ownership of their learning and take risks to understand and apply their knowledge' (in Graziano 2008, p. 154). Makin and Whiteman (2006) state that 'teachers and children are partners in teaching and learning transactions. We need to find ways of interacting with children to co-construct shared meanings in ways we cannot do if the children themselves are not active participants in exploring the situation' (p. 35). However, Hayes (2008) recognises that, 'child centred teaching includes behaviours that actively involve the children in guiding the learning process, such as offering choices, encouraging activity and suggesting solutions' (p. 433). This pedagogy is operationalised in, for example, Northern Italy and New Zealand. In New Zealand the National Curriculum Framework for early childhood is called Te Whāriki (Ministry of Education 1996). Written in both English and Maori and originating from Maori epistemology (Carr 2001), it has an holistic approach based on a socio-cultural view of the child as expressed by Vygotsky (Soler & Miller 2003, p. 63). This model envisages the curriculum as a web or woven mat rather than a set of stairs; Eisner (1985) contrasts the step model of the English national curriculum with the spider's web of the New Zealand system:

The step or staircase model conjures up the image of a series of independent steps that lead to a platform from which the child exits and at which point measurable outcomes can be identified ... Te Whariki emphasises a

model of knowledge and understanding for young children as a tapestry of increasing complexity and richness. (Carr & May 1996, in Soler & Miller 2003, p. 63)

The New Zealand model recognises the intricacies and complexities that children develop in a non-linear way. The metaphors used in both models provide an interesting representation of how children learn, the 'woven mat' representing the ever-expanding development of children's learning in a horizontal rather than a vertical linear 'stepped' way. Similarly to New Zealand, in Northern Italy the teachers of Reggio Emilia 'have challenged the dominating discourse and accepted practices of early childhood pedagogy by "deconstructing" the dominant ideas and theories that have shaped our conceptions and images of children and childhood' (Dahlberg 2000, in Soler & Miller 2003, p. 65). Reggio Emilia has many similarities to the Te Whāriki model but the main difference is that 'Reggio Emilia is not a compromise between a national curriculum framework and a learner-centred curriculum' (Soler & Miller 2003, p. 64). What is unique about the Northern Italian school concept is that its core philosophy of child-centredness has been accepted, maintained and strengthened since its 1967 inception. A criticism levelled at the schools is based on their absence of a written curriculum leading to a perception of a lack of measurable accountability. Reggio Emilia's philosophy is based on 'opposition to a focus on standardisation and outcomes' (*ibid.*, p. 65). Its authenticity has enabled it to retain its child-centred philosophy because of the absence of any rigid accountability as experienced in many other countries (*ibid.*, p. 65).

However, current pedagogy in the UK is represented by a philosophy in which 'the teacher (rather than the child) has greater control of the content' (Hayes 2008, p. 439). This control has led to the situation which Dadds (2001) describes as '... the potential consequences for teaching and learning when teacher professional judgement is dislodged by government in favour of centralist prescription of curricula and pedagogy' (p. 44). How did teaching and learning, and consequently teachers' pedagogy, become so reduced? This was mainly caused by the focus of the government's education agenda on the testing of the sub-domains of three subjects to the virtual curriculum exclusion of the remainder (Boyle & Bragg 2006). This Standards agenda (Brehony 2005), reinforced by the National Strategies (NLS 1998; NNS 1999a; DfEE 1998a & 1999a), was strengthened by the introduction of percentage success targets for schools, which became the sole measurement tool for a school's perceived success or failure. As a result, in the time-honoured 'teaching to the test' tradition, pedagogy became reduced to the acquisition of facts rather than focusing on meaning

and learning (McNaughton & Williams 1998, in Dunphy 2008, p. 57). Research observation evidence (Boyle & Charles 2010, p. 295) indicates that children 'become dependent rather than independent, passive rather than active and powerless rather than powerful' (Dunphy 2008, p. 66). Despite the criticisms by teachers of the Strategies, many teachers obviously welcomed the changes in teaching approaches, especially at key stage 2, which saw 'more changes in teaching approaches than in the previous two decades' (Webb & Vulliamy 2007, p. 561). The Ontario Institute's School of Education's (2003) evaluation report stated that 'many teachers report that their own learning has been positively affected' (in Barkham et al. 2008, p. 5). Beard's (2000) evidence suggests that the teaching of literacy methodologically improved after the introduction of the National Literacy Strategy (NLS), as 'direct teaching of literacy skills was surprisingly rare' before the introduction of the NLS (in Jolliffe 2004, p. 2). However, according to Burkard (2004) 'since the Literacy hour was launched in 1998 over a million children have left primary school with poor literacy skills' (p. 2). This is a significant level of failure. Have teachers failed to transfer learning across learning situations? Do teachers have 'strong pedagogical content knowledge and high levels of pedagogical skills?' (Dunphy 2008, p. 66). Despite the dissemination of strategies, frameworks and policy documents, our evidenced view of current teaching practice (pedagogy) would be that it is uninformed and lacks a focus on the learning needs of the individual child. Why do teachers not have an understanding that to have a child-centred pedagogy requires them to have a philosophy shaped by learning theory and its practice? Why is there not a theoretical construct underpinning their practice? Rowsell et al. (2008) suggest that 'pedagogy refers to an educational position or approach that includes both theory and practice' (p. 115). This definition focuses on the strengths or weaknesses of the connection between theory and practice in the teachers' pedagogical development. There should be no endpoint in the teacher's development as a practitioner, and for that development to produce a truly reflective formative practitioner there has to be a synthesis between theory and practice.

Despite the evidence to the contrary in the current practice as reported and observed, our hypothesis is that a knowledgeable basis of theories of learning leads to the natural evolution of an informed personal teaching philosophy, that is, a philosophy which locates the child at the centre of learning, involved in the co-construction and self-regulation of that learning with the teacher, and therefore, independent of an over-reliance on centrally devolved one-size-fits-all strategies. However, while an outcomes-based teaching and measurement of learning culture exists, teachers can only verbalise their philosophy of pedagogy in the concrete terms of using a traffic light system as a learning strategy

'to close the gap' – at best a highly dubious self-assessment tool used for a misunderstood aim – and trade in the language of cohort and population targets for level accretion and effect size predictions.

Studies on learner-centredness and restricted pedagogies

At the beginning of this chapter, Rowsell et al. (2008), Hayes (2008) and Edwards (2001) described theoretical aspects of a definition for pedagogy. In practice, Siraj-Blatchford (2004), through her Effective Pedagogy of Pre-School Education (EPPE) study of effective settings from ages 3–7, highlighted the importance of 'the presence of a "good" pedagogue who is seen to orchestrate a pedagogy by making interventions that were suitable to children's potential level of learning or to the concept or skill being taught' (Dunphy 2008, p. 59). Related to that definition she identified three salient features for a 'good' setting: (i) adult-child verbal interactions; (ii) differentiation; and (iii) formative assessment. The related Researching Effective Pedagogy in the Early Years (REPEY) report (Siraj-Blatchford 2002) supported the findings of EPPE (these studies are best understood as one continuous sequential explanatory mixed-method study (Creswell 2003; Siraj-Blatchford et al. 2006)) and revealed that 'the excellent settings encouraged relatively more "sustained shared thinking"' (Siraj-Blatchford, in Dunphy 2008, p.60). 'Sustained shared thinking' can be defined as: 'an episode in which two or more individuals "work together" in an intellectual way to solve a problem, clarify a concept, evaluate activities, extend a narrative, etc. Both parties must contribute to the thinking and it must develop and extend thinking' (Sylva et al. 2004, in Dunphy 2008, p. 60).

Significant points to consider from REPEY are the importance of the practitioner's role in balancing adult-led and child-initiated activities, the need to engage in 'sustained shared thinking' and the kind of interactions that will guide but not dominate pupils' thinking (DfES 2005, p. 10). Even more significantly, 'Sustained Shared Thinking' (Section 4c) has now been included as one of the core 'Principles of Learning and Development' of the Early Years Foundation Stage Guidance (DCSF 2008) applied to all schools from September 2008. However, in their report, Siraj-Blatchford and Manni (2008) stated that:

It was found that 94.5% of all the questions asked by the early childhood staff were closed questions that required a recall of fact, experience or expected behaviour, or a decision between a limited selection of choices or no response at all. Only 5.5% were open-ended questions. (Siraj-Blatchford & Manni 2008, p. 5)

Edwards's (2001) statement that 'teaching is informed interpretations of learners, knowledge and environments' (p. 163) is congruent with Allal & Lopez (2005) and Perrenoud's (1998) formative or self-regulative philosophy of the co-construction of learning between teacher, learner and environment. Similarly, Alexander (2008) supports a model of pedagogy that includes 'teacher formative experiences' and 'pupil formative experiences' (p. 27). Unfortunately, the REPEY (Sylva et al. 2002) findings indicate that this positive profile is optimum and does not occur very frequently (Dunphy 2008, p. 60). Of particular importance is Siraj-Blatchford et al.'s (2004) profile of 'good' settings in which she describes three pedagogical features – differentiation, formative assessment and adult-child verbal interactions – which have been positively discouraged in the post-Strategy period. On this theme, Alexander states that: 'This rigidity has its pedagogical roots firmly in the National Numeracy and Literacy Strategies with the formalism of highly structured lessons, whole class plenaries' (Alexander 2008b, p. 107). However, 10 years before the Strategies, Tharp and Gallimore (1988) in their classroom observations based on whole class teaching reported that 'all stages of schooling were dominated by the "recitation script"' (in Smith et al. 2004, p. 396). Earlier research by Sinclair and Coulthard (1975) originated the notion of the three-part exchange of teacher recitation – Initiation, Response, Feedback, shorthand as IRF – demonstrated as 'directive forms of teaching' and consisting of 'a series of teacher questions that require convergent factual answers and pupil display of known information' (in Smith et al. 2004, p. 396). Significantly, Williams's (2008) *Review of Mathematics Teaching in Early Years Settings and Primary Schools* strongly asserted that 'first and foremost pedagogy must be learner-centred in the sense that it is responsive to the needs of the particular children being taught' (para. 234, p. 64). This scenario is diametrically opposite to the current national profile of pedagogy reported by Alexander (2004, 2005) and Boyle & Charles (2010). Williams comments that the National Strategies do not explicitly state a pedagogical model related to pupils' learning (2008, para. 232, p. 63). This provokes several questions: how can a pupil's voice be heard within this structure? How can a teacher differentiate within a system predicated upon a whole class approach? How can formative teaching flourish when the target is to move whole cohorts at pace through units of work?

The Organisation for Economic and Cultural Development (OECD) study (2004) provided data from a survey of 15 classrooms to respond to these questions. It found that 'in general the pedagogy was not focused on the observed interests of the children but sought to interest them in the concerns of the teacher'. In short, what the OECD team observed was a teacher-centred rather than a learner-centred pedagogy

(OECD 2004, p. 59), characterised by 'a focus on literacy and numeracy related activities, with evaluation criteria narrowly focused on cognitive outcomes, and the early introduction of written symbolisation' (ibid, p. 59). Moyles et al. (2002) studied nine early years settings. They reported that:

the pedagogy observed was inappropriately 'formal' and seen to be dominated by lessons, subjects, timetables and tightly defined learning objectives, the daily rhythm of classroom life generally observed was described as being made up of long, inactive plenary sessions working through a list of learning intentions, an overriding emphasis on literacy and numeracy. (Adams et al. 2004, p. 105)

In 2008, Hayes reported on findings from classroom observations of 400 primary school children that they 'have limited choice in or control over the activities they engage in and although teachers are recorded as proposing active participation the findings did not show children actively participating in their learning' (p. 434) and the 'children mainly observed worked silently' (p. 433).

There was movement towards offering an alternative menu in 2003 when the DfES 'called for a rich, varied and exciting curriculum' (Troman et al. 2007, p. 551). Entitled *'Excellence and Enjoyment: A Strategy for Primary Schools'* (DFES 2003), this document stated that teachers could achieve excellence in performativity allied to a more creative teaching and learning agenda. However, Brehony (2005) responded that in the context of the current Standards agenda 'there is an irresolvable contradiction in excellence and enjoyment' (p. 31). While Webb and Vulliamy (2006) point out 'that much of the text of "Excellence and Enjoyment" is devoted to reiterating the familiar messages of the Standards agenda because "testing, targets and tables" are here to stay' (p. 20). The tensions and the contradictions between pedagogy and performativity would seem, as Brehony (2005) states, to be irresolvable within this summative measurement agenda (p. 31).

The evidence discussed above strongly suggests that because of the focus on whole class teaching, the concept of the individual as the focal point of planning for teaching and learning and of pedagogy has been reduced, replaced by the provision of centrally devolved test materials and pre-planned packages delivered at pace to cover the maximum amount of material regardless of depth of learning. Issues of the pace of teaching in the current outcomes-based climate have concerned researchers with regard to the opportunities available for the development of critical language and reasoning capabilities for the individual (Eke & Lee 2004, p. 220). The National Literacy Strategy's legacy of lists of learning outcomes by term and by year still holds sway in many schools and produces a requirement for strong pacing of 'teaching as coverage'.

Ofsted has exacerbated this situation as its inspectors' 'concern to sharpen pace in teaching has led to the pursuit of pace at all costs, regardless of the fact that pace without attention to [children's] understanding leaves all but the fastest learners stranded' (Alexander 2008, p. 18). Following Bernstein's research into elaborated and restricted codes of language (1973) this has two consequences '... since time is at a premium what counts as appropriate talk, in both length and form, will reduce pupil speech and increase teacher talk' (Eke & Lee 2004, p. 220). Myhill's (2006) research found that

contrary to the advocacy of the National Literacy and Numeracy Strategies much whole class teaching involved relatively little interaction which supported and scaffolded children in their learning. Teacher talk dominated whole class teaching ... the child's answer served to end an interaction sequence and rarely to begin or initiate it. (p. 24)

Despite evidence that the teachers had a strong sense of cognitive concepts and skills 'which they hoped would be addressed through their teaching' (p. 34), this cognitive and conceptual understanding in principle was not realised in the practicalities of the classroom learning situation. As Myhill stated:

The low percentage of questions making links between prior knowledge and present learning and the relative paucity of process questions giving children opportunities to reflect and articulate their learning points to whole class discourse more oriented to teachers' curriculum delivery goals than to guiding pupils towards greater understanding. (p. 35).

In support of this finding, Eke & Lee's (2004) research revealed that in one class of 30 children 'over half of pupil utterances were less than six words' (p. 222). This unbalanced relationship is even recognised in current government policy statements: 'Teacher talk continues to dominate pupil talk despite efforts to the contrary' (DCSF 2008, p. 9). Inevitably the individual is diminished as the focus for teaching and learning and pedagogy sits within a contradiction – the 'closed recitation script' (Alexander 2004) with its basic assumption that all children learn in the same manner. That manner or pedagogical style is the predominance of whole class teaching as espoused by the Strategies, while by contrast, for the formative teacher it is a given that

... pupils do not have the same abilities nor the same needs or the same way of working, an optimal situation for one pupil will not be optimal for another ... one can write a simple equation: diversity in people + appropriate treatment for each = diversity in approach. (Perrenoud 1998, pp. 93–4)

Deregulation defines differentiation

Pryor and Crossouard (2008) extend this definition of Perrenoud's of differentiated teaching and his philosophy of the changing relationship or 'regulation' between teacher and pupil (Perrenoud 1991, 1998) to its inevitable conclusion. In that 'the educator teaches different definitions of themselves to the students and develops different relationships with the students through them' (Pryor & Crossouard 2008, p. 10). Those identities include 'teacher, assessor, subject expert and learner' and all 'involve different division of labour and rules shaping their interaction with students' (p. 10). This is problematic to some teachers who have become used to the neatly planned rigidity and conformity of whole class teaching, but as Martin et al. (2005) recognised 'Learning is *messy* and *takes time*' (p. 235, italics in original).

The evidence from our 2010 sample (Boyle & Charles 2010) indicates the notion of differentiated planning for teaching is not seen as a pre-requisite for formative assessment by the majority of teachers (only 7% of our sample stated that formative assessment enabled the setting of differentiated targets for lessons). This is a still-strong legacy from the National Numeracy Strategy with its discouragement of differentiated teaching; 'we are concerned that children should not continue to work at many levels, with the teacher placing them in a wide range of differentiated groups' (DfEE 1998a, p. 54) and 'its format as a fixed curriculum to be taught to all pupils regardless of attainment indicates that very little curricular differentiation is recommended' (Brown et al. 1998). This legacy is so strong that five years after *Excellence and Enjoyment* (DfES 2003) we are observing a majority of lessons in which differentiation is totally absent. Why are we observing lessons with one static learning objective which embraces the whole extent of a class's learning? This signals that the pedagogical messages of the National Literacy and Numeracy Strategies in which differentiation was frowned upon and the absence of teacher understanding of the need for a differentiated menu to match the range of learning needs, as well as the presence of a 'one size fits all' paradigm, is proving difficult to shift.

In conversation with teachers during our 43 school visits we raised the word 'differentiation' and there was vagueness in the responses. We were told 'I set one task and then I differentiate by what they produce' or 'I have an extension task ready for those who finish'. Our observations indicated that this is what AfL in practice has been reduced to. The responses demonstrate misconceptions of the basic principles of how pupils learn and the sacrifice of developmental learning on the altar of 'coverage', 'pace', 'moving the cohort on' and 'getting through the pre-planned package'. Clearly our initial teacher training programmes need to return to the conceptualisers and theorists of formative assessment to change technicians back to

pedagogues. Principal amongst these theorists is Philippe Perrenoud whose philosophy is based on the principle that

to the extent that pupils do not have the same abilities nor the same needs or the same way of working, an optimal situation for one pupil will not be optimal for another ... one can write a simple equation: diversity in people + appropriate treatment for each = diversity in approach (Perrenoud 1998, pp. 93–4).

In even simpler terms, 'good teaching forces differentiation' (Perrenoud 1998). Linda Allal reinforces the point, 'differentiation of instruction is planned rather than just being added on after observing difficulties' (Allal & Lopez 2005, p. 246).

Is this because the complexity inherent in pedagogy, as outlined by Flower (the requirement forced on the pupil to 'juggle' often conflicting learning themes and concepts, for example in one lesson a pupil may be required to 'juggle' visual/graphemic elements of a letter, the spelling of a word, character development, sentence organisation, coherence, etc.) and Perrenoud (the need to differentiate your teaching and learning programmes), may cause 'a perceived crisis in teachers' professional skills, routine and organisation'? (Perrenoud 1998, p. 98). Has the summative agenda of the last twenty years reduced the capacity of the teacher so that 'juggling' and differentiating is now beyond them? In short, has the teacher been reduced to the technician who has been trained to deliver the whole class menu but cannot diverge in his/her pedagogy to meet the learning needs of the individuals in their classrooms?

Differentiation is an essential element of teaching for learning rather than for coverage. It is based around the theory of pupil individual learning differences and the resultant complexity of learning therefore requires different treatments, that is, differentiated teaching.

Perrenoud's definition seems very obvious and difficult to dispute if one reflects on the differences in learning behaviours in any class of pupils. However, many teachers need support to change from the common pedagogical model of 'one size fits all' conformity of planning for whole class 'movement' through a set of learning objectives. Teaching in many countries has been reduced to preparing pupils to solve problems/questions in specific ways to obtain test marks/levels. Learning is not linear, however; it is messy and involves regressions as well as progression – it takes time and different pace and routes for different pupils, hence the need for differentiation. As we quoted from Perrenoud at the beginning of this chapter, formative assessment and differentiation are integrally linked chains, implicitly synonymous: 'If formative assessment is carried out on a fairly regular basis, the result is pressure to differentiate' (Perrenoud 1991, p. 89).

Case study 1 Elaine's reading lesson



Context: Snowy day; Elaine has a class of six children in Reception (ages 4–5). She had prepared sentences about a snowman. The sentences were differentiated by the teacher but the sentences were not matched to the reading ability of the pupils. The teacher asked the pupils to read each word to complete the sentence and then to cut up the words to demonstrate understanding.

The teacher reads: 'A hat on a snowman'. She asks Ismail to read the sentence aloud to the group, holding the sentence in a position which visually is upside down for the child. The child manages to read the sentence, but only with lots of phoneme prompting from the teacher.

Teacher: We are going to chop the words up and make the sentence again. Do you think you can do that?

[Ismail: Nods]

Teacher: If I make a line here [she sections off each word so that the child can cut off each word from the sentence], you cut them out and put them in the right order. Then draw me your picture.

Teacher: Are we all looking? [Teacher motions to the other four children to pay attention.]

[moving on to address Rebecca, sitting next to Ismail]:

[Teacher then points to first word on the child's sentence which reads: I am a snowman.]

[Rebecca voices phoneme 'i' sound for the word 'I'.]

Teacher: It says 'I' [she points to the next word, 'am'].

[Teacher voices] a ... m. What does it make?

[Rebecca looks up with no response.]

Ismail [shouts]: and.

Teacher: No, not and but am. [Rebecca is struggling with the strategy of blending phonemes.]

Teacher: You help each other. [Teacher points with pen to the words 'I am'. She shouts] Are you practising with yours? [motioning to the other four children. Teacher sounds out] a ... mmm. It says am ... we practised this on the carpet didn't we?

Rebecca: [No answer.]

- Teacher: I am a snowman. Now I want you to cut these words up. [Teacher sections off each word and asks Rebecca to cut them out and put them in the right order.]
- Teacher: Let us see if Peter can read this one ['a pin on a tin'].
 Peter [reads]: A pin... [then struggles with the word 'on'. Peter does a return sweep as reading strategy and returns to the beginning of the sentence for meaning, before reading on successfully. The teacher ignores the successful reading strategy which Peter has just used.]
- Teacher: Cut up your sentence and stick it in your book.
- Teacher: Are you ready for your word? [Reem's sentence is: Pat the snowman.]
 [Reem reads 'Pat', struggles with 'the'.]
- Teacher: Now this is one of our tricky words, now if it is a trick word we cannot sound it out can we?
- Reem: Mmm.
- Teacher: We have to look at this word, point to it and say it [points at 'the'].
 [Reem: Says 't'. Looks at teacher for response.]
- Teacher: I will tell you today and we will see if you can remember it tomorrow. Pat the, the... Just look at it because a 't' and a 'h' doesn't make 'the' ... 'Pat the...' What is the big word we have been looking at today? [Reem is rocking back and forth in chair.]
- Reem: Snowman.
- Teacher: Right, read it again...
- Reem: Snowman.
- Teacher: Right read it again.
- Reem: Pat... [Child struggles with 'the' and looks at teacher for help.]
- Teacher: the ... ssss...
- Reem: Snowman.
- Teacher: Now I will draw the lines down and let's see if you can make this sentence again.
 [Teacher moves on to Sultan, who, already with his fingers over his mouth, is looking at the teacher with confusion.]

(Continued)

(Continued)

Teacher: What's that word? [Covers up the rest of the sentence] OK, let's see if we can read this word [Snowman].

Sultan: Snowman.

Teacher: OK, we have got snowman. Now on to the next word [big].

[Sultan sounds out 'b']

[Teacher sounds out and isolates the three phonemes, 'b','i','g']

Teacher: Now put them together.

[Sultan points to 'b' but skips back to the beginning of the sentence and voices 'a'.]

Teacher: No, no, not that one, this one 'b'.

[Sultan points to 'big' and voices 'b' 'i' 'g' 'g']

Teacher: Now, what word does that make?

Sultan: 'g' [then puts his fingers over his mouth].

Teacher: No, not 'g'. What does 'b','i','g' make?

Sultan: Big.

Teacher: Big [motions with her finger to the beginning of her sentence and reads 'a' 'b...']

[Sultan looks confused.]

Teacher: Now what did we just say?

[Sultan looks at the teacher and then looks at the word the teacher is pointing to.]

[Teacher points to the word 'snowman']

Sultan: Snowman [child continues to rock back and forth in chair with his fingers in his mouth].

Teacher: I want you to cut out the words and put them in the right order again.

[Sultan is left to cut out a big snowman.]

[Teacher returns to talk to Reem. The child has cut out the words and appears confused.]

Teacher: Now, can you find the word 'pat'?

[Reem places the word 'pat' on the table. Teacher replaces it at the beginning, left hand side of the paper. Child is silent throughout, rocking back and forth.]

Teacher: Right ... Pat ... the

Sultan [shouts]: Snowman.

Reem [voices]: 'Pat the snowman'.

Teacher: No, yours does not say 'Pat the snowman'. Remember, we are not copying are we? [Reem is looking at Sultan's sentence]

Teacher [reads and points out to Reem]: I am the snowman [using her fingers to point at each word.]

[Peter finds 'I' and glues it down. Peter says 'I am a snowman'.]

Teacher: Let's find the glue ... I asked Ismail to put them in the right order before he put them on. Did you?

Teacher: Have a look for 'pin'.

[Rebecca locates and places in order 'a pin on a snowman'.]

Teacher: What is that big word?

Rebecca: Snowman.

Teacher: Let's read it all together.

Peter: A 'p', 'i', 'n' 'o' 'n' a snowman.

Teacher: Now, I want you to read that without saying 'p', 'i', 'n' [isolating each phoneme].

Peter [reads]: A pin, 'o', 'n' a snowman [isolates two phonemes 'o', 'n'].

Teacher: Stick them on now and draw your picture.

Reem [shouts]: I like to play snowballs.

Teacher [taking the word 'snowman' from his hand]: Now come on, we have got the words and I know you know this big word here, 'snowman'.

Teacher: What is the first word of your sentence? [A big snowman. Points to word 'A' to prompt Joanne to read the word. Child looks confused.]

Teacher: What was your snowman? [Gestures with hands to make a big shape.]

(Continued)

(Continued)

- Joanne: Bigger.
- Teacher: Yes [Points to the word 'A']. Now what does this say?
- Joanne: Big.
- Teacher: No, A big snowman. [Places the sentence in order for the child.] Now stick them on.
- Teacher [turns round and asks Ismail]: What did your snowman have on?
- Ismail: A hat.
- Teacher: Where is it?
- Ismail: I am doing it. [Teacher then gives pencils out to the group and the children continue to glue words and draw their pictures in silence.]

Analysis

A more formative teacher would have understood that:

- Each child should have been encouraged (as language users) to generate their own sentences to study and read from – this would have enabled a differentiated teaching and learning opportunity as each 'baseline' drafted sentence would therefore have been unique.
- Written representations of the children's oral language/contributions in the form of modelling/scribing print in action are essential components of the child's conceptual development as a reader.
- An integrated whole language approach including rich dialogue would have deepened the children's learning experience, particularly in a group situation (social mediation of learning: Vygotsky).
- There was no metacognitive approach to the learning situation from the teacher, for example the interrogatives 'Why', 'How', 'What', 'When', were not relayed to the children.
- Having each child's baseline at word level would have revealed questions such as, Step 1: Is the child aurally able to hear initial phonemes?; Step 2: Can the child isolate individual phonemes?; Step 3: Can the child hold the phonemes in their short-term memory?; Step 4: Can the child blend isolated phonemes into a whole word? And finally, can the child produce orally the target sound?

Case study 2 Sue's mathematics plenary session



Context: Whole class plenary – Differentiation (Year 2). The teacher is talking the whole class through a differentiated maths problem devised by one pair of the children (Joe and Daniel).

Teacher: I can remember what we did yesterday that was quite difficult – it was Joe's question about [takes it from the child and reads] the hen lays 65 eggs in 2 hours how many in 3 hours?

Joe: 65 doesn't have a half.

Teacher: That's right, now Daniel you worked out...

Daniel: You can't use 65 because it's either going to be 33 or 32 ...

Teacher: Because 65 is an o... [motions to child to finish].

Daniel: Odd number.

Teacher: So we changed it, well you changed it to the hen lays 20 eggs in 2 hours – how many in 3 hours? How did you solve that problem? What did you have to do?

Joe: Well I knew that there were 20 eggs in 2 hours but then I put on 3 hours – I put a 0 on it to make it 30...

Teacher: Yes, but what did we have to solve – work out?

Daniel: I had to work out – he had to work out much the egg lays in each hour ...

Teacher: For 1 hour, yes, so when you knew that the hen lays 20 eggs in 2 hours – so what did you do then?

Daniel: Erm ... I halved it, from 2 you get 1.

Teacher: Half of 20, is that 1?

Daniel: No I mean 1 hour.

Teacher: Oh I beg your pardon – so how many in 1 hour?

Daniel: Because it's 20 I took off 10, so it's 3 x 10.

Teacher: Fantastic, that is brilliant and I think that is an excellent one to end on. Where would you put that question?

[Teacher motions to three boxes labelled 'hard' 'easy', 'OK' – child puts it in the 'OK' box. The child next to him says 'I would put that in the hard box'.]

Teacher: Who agrees? Who would put that in the hard box? [A mixture of hands go up for each 'level of difficulty' box.]

So it depends who you are doesn't it? So you have to decide for yourselves, that's what you have to do, if you feel that something is too easy you have to find a question that is more challenging for you.

Analysis

Sue's plenary session provides an authentic example of developing children's metacognitive skills through an integration of the recursive elements of their learning. The teacher recalls a previous day's learning to consolidate this aspect and validates their mathematical problem through a differentiated strategy. This collaborative approach provided rich assessment information on their understanding of the divisible aspects of two-digit numbers and their ability to re-work a problem using even numbers. This differentiated pedagogy in which the child was allowed enough time and space to explain the 'how' and 'what' of their calculations revealed the multiple number operations at work within each child. This internal exposition allowed the rest of the class to access higher order thinking and demonstrated the individual/collaborative complexity which can be nurtured and developed through self-regulated learning and a differentiated pedagogy.

Summary

What is differentiated instruction?

- It is starting where the pupils are rather than using a standardised approach.
- It is responsive teaching rather than one-size-fits-all teaching.
- It is about helping teachers to plan varied approaches to identify what pupils need to learn and how they will best be able to learn it.