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# Learning about learning

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Learning is nature's expression of the search for development. (Senge, 2000a, p. 57)

In order to help young people to become better learners, the first thing is for all teachers to start thinking, acting and talking as if learning were learnable. (Claxton, 2000b, p. 8)

Learning things is important 'cos I can learn more better (Khalid, year 1)

## Introduction

'Knowledge acquired by study', a traditional definition of learning found in the 1991 edition of the *Oxford Dictionary*, is too narrow for the *intelligent school*. A much more expansive view of what it means to study is needed if important forms of learning are not to be excluded from the definition. A broader view would include the natural and spontaneous way that young children learn as well as much of out-of-school learning. Learning, as implied in the discussion about achievement in Chapter 2, is a broader and more dynamic process than just studying and acquiring facts. Human beings have an innate capacity for learning as they live. As Claxton (1999, p. 6) points out: 'Learning is not something we do sometimes in special places or at certain periods of our lives. It is part of our nature. We are born learners.' One of the tasks for the *intelligent school* is to find out what its stakeholders, particularly,

the pupils, think learning is about.

A literature review published in 2001 identified different views of what learning is:

- increasing one's knowledge;
- memorizing and reproducing;
- applying general rules to particulars;
- understanding and making sense;
- seeing something in a different way;
- changing as a person. (Watkins et al., 2001, p. 1)

Initial school improvement research concentrated on school level change. Later studies showed, however, as Reynolds (2001, p. 36) points out, that 'the classroom learning level has maybe two or three times more influence on student achievement than the school level does ... . It is clear that the neglect of the classroom level and the celebration of the school level may have historically cost us valuable teacher commitment'. The impact of the classroom environment on pupils' learning and attainment is now taken much more seriously.

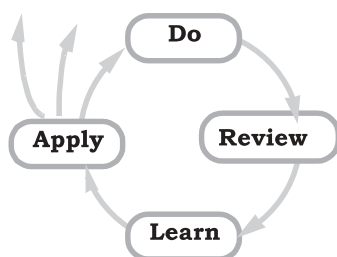
The knowledge base about learning has been growing rapidly and many practitioners with whom we have been working have been studying the literature, renewing their understandings, creatively investigating learning in their own schools and examining the implications for their school improvement practice.

The three of us work in a range of different partnerships with practitioners. This work has confirmed for us that effective learning is not a passive process confined to either the classroom or to the process of studying. It is an active process of making meaning that includes questioning, understanding, reflecting and making connections between existing and new information, and, subsequently, being able to use and apply learning in a range of situations. More often than not it involves learning with and from others, which means that much of learning is an interactive, social process.

A model of learning based on the work of Kolb outlining stages of 'planning', 'doing', 'reviewing' and 'learning' is shown in Figure 4.1.

The learning cycle provided by the model in Figure 4.1 demonstrates a *process* of learning, not just its content. We also have known for some time that learning is not only an intellectual process, it crucially involves the development of personal, emotional and social skills, and its success depends on the feelings, motivation and confidence of the learner.

Schools have a primary task of *enhancing and enriching* learning. By its very nature it is not possible to 'do learning' to someone. This is an important message in an era when teaching as telling, and learning as listening, have been in the ascendancy. Watkins (2001, p. 1), reflecting on this point suggested that:



**Figure 4.1** A model of the learning process

Source: Watkins et al. (2002, p. 1).

It's surprising how often talking about learning is hijacked by talking about teaching. Perhaps those of you who have been in teaching over recent years will notice as I have the term 'teaching and learning', which often means 'teaching and teaching', or is said so fast that it sounds like 'fish 'n' chips'. We have to have a clear focus on learning.

Watkins (2003) describes what he terms two further 'space invaders' that can get in the way of learning. The first is the tendency to refer to pupils' learning as their 'work'. This is a popular discourse in most classrooms, which have schemes of '*work*', exhort pupils to get on with their '*work*' and do their home '*work*'. The second is the confusion that currently arises between *performance* and *learning*, which we discuss later in this chapter. We would add that there is also confusion between notions of attainment and learning, which we particularly pick up in Chapter 5 when we look at the role of feedback and assessment.

The review of school effectiveness literature in Chapter 2 leaves us in no doubt that schools can make a difference to pupils' chances as learners. Young people can also learn very successfully when not in school. As we mentioned in Chapter 1, the gap between in-school and out-of-school learning and the connection pupils make between them may indeed be growing wider. Outdated assumptions and beliefs about learning mean schools can limit or even damage learning, adding little value, no value or even conferring negative value by damaging the image of oneself as learner. One of the questions for the next decade of school improvement activity will be to ask, 'How do we evaluate the value we are adding as a school to our pupils' learning?'

We want to assert that learning in the *intelligent school* is a continuous, life-long process, which starts well before its pupils arrive at school and continues each day as they walk out of the door and long after they graduate from school. This has profound implications for the organization of a school and the way it provides a nurturing learning environment. As we have already

noted, the responsibility a school has is much wider and more awesome than simply raising standards in national assessments. It can provide the beginning or not of an access to lifelong learning for all its pupils. The belief that *everyone* can learn, including profoundly disabled people, is becoming increasingly accepted now across the globe and is an important theme that is explored later in this chapter. This belief is providing an important new basis for educational practice.

For the purposes of this book we focus on the experience of learning that takes place for pupils in school. At the same time we acknowledge the many other experiences of learning that occur beyond the classroom but can be influenced by an enriching diet and experience inside it. We suggest that such learning often involves an unspoken, unwritten and sometimes unconscious PACT between learner and teacher. We pick up this theme in the next chapter. For school learning to be enhanced, useful and interesting for the learner we argue that the *intelligent school* understands as much as possible about the different factors that can influence a pupil's motivation and ability to learn. In the process of doing this it updates and challenges its assumptions and beliefs about the nature of learning. This involves being:

- knowledgeable about learning;
- knowledgeable about learners;
- knowledgeable about learners' experience of their learning.

Throughout this chapter, we reflect on these three themes, together with some of the implications for teachers in the classroom.

## **Learning as an active process of making meaning**

Learning, like other fields of knowledge in our culture, has its own technical language. This includes terms such as '*meta-learning*' and '*metacognition*'. In this section we examine some of the research and theoretical perspectives that have generated these terms.

Through time there have been many theories developed about learning and some common themes appear in the literature. Carnell and Lodge (2002) identify three different approaches to learning. Reception (or instruction), construction and co-construction. At one extreme is reception; the dictionary definition is at the beginning of this chapter. This is based on a model which views learning as the reception of knowledge, the learner as passive and the learning style as fixed and formal. To caricature this approach the learner is seen as empty or passive and the teacher as the one who is active and responsible for 'filling up' the student's mind.

The passive learner responds to input provided mainly by the teacher on whom she is dependent for her learning. Here learning is a simplistic process that is linear and sequential, and little account is taken of what the learner may

bring to the experience in the way of existing knowledge, reflective capability, previous experience of learning and preferred approaches. This is not to discount a need to be taught particular skills, listen to a formal presentation or be trained for particular purposes. These forms of learning and instruction are still relevant in appropriate circumstances.

In the past 20 years there has been a significant shift in our understanding of how learning takes place. As Gipps and MacGilchrist (1999, p. 47) point out: 'Recent work in cognitive and constructivist psychology shows learning in terms of networks with connections in many directions; not as an external map that is transposed directly onto the student's head.'

The construction approach acknowledges and respects learners' engagement in the process of their learning and takes account of the inherent complexity of the process. Learning happens in the process of coming to new understandings in relation to existing knowledge. The research literature suggests that this is an active, collaborative process where learners take responsibility for their learning and also learn about themselves as learners. The constructivist approach acknowledges the importance of an interactive social component in learning, in contrast to the reception model that encourages more solitary learning. Maha, a year 6 pupil illustrates this well:

I learn best when someone explains it to me, then gives me questions based on it so that I can do it by myself and see how it works. Also, if people give me different ways to solve it, I can do them all and see which one's easiest. This extends my knowledge.

The co-construction model is an extension of the constructivist model. It reflects a view that remains under discussion amongst theorists that learning is more likely to occur through social interaction than just in the mind of the individual. It emphasizes the importance of discussion and dialogue between learners and each other, and between learners and their teachers and other adults. Carnell and Lodge (2002, p. 15) state that: 'Dialogue is more than conversation, it is the building of learner centred narrative, (it) is about building and arriving at a point you would not get to alone.'

Resnick (1987) points out that the dominant form of school learning is individual. She contrasts this with work, personal life and recreation which almost always takes place in social settings. Carnell and Lodge (2002, p. 15) suggest that more school learning should be based on dialogue as: 'It has the power to engage learners in learning conversations, keeps them open to new ideas and requires both honesty and trust.'

Annie in year 7 observes: 'You learn more because if you explain to people what to do, you say things that you wouldn't say to yourself, really. So you learn things that you wouldn't know if you were just doing it by yourself.' Bilal in year 6 agrees: 'I learn best in a group so then I can see the different

points of view from different people.’

## Learning and performance

The research of developmental psychologist Carol Dweck in the field of motivation and personality is of crucial importance to teachers. Her work challenges the view that learning is the same as performance and suggests that they are two different motivational positions. She suggests that people have beliefs about themselves that give meaning to what they do and how they see their world. For the purposes of classroom learning she has distinguished between pupils who are mastery or learning orientated and those who are orientated to performance. Pupils who are learning orientated are more likely to think about their learning and are less in need of proving that they can succeed in formal testing situations or in competition with others. Pupils who are performance orientated tend to equate their grades with their intelligence and in the face of difficulty have fewer strategies to help them to persist in their learning. They give up easily. This Dweck refers to as a position of helplessness and it too can be learnt!

Dweck’s research (1999) challenges beliefs about pupils that are still fairly firmly embedded among educators and also in society more widely. These include:

- students with higher ability are the ones with a learning orientation;
- successful school performance is based on a learning orientation;
- students’ sense of their own intelligence will give them a learning orientation;
- students who put effort into their work are less intelligent than those who do not.

Watkins et al. (2002, p. 2) summarize the difference between learning and performance orientations in the following way.

### A positive pattern:

‘learning orientation’

- belief that effort leads to success
- belief in one’s ability to improve and learn
- preference for challenging tasks
- personal satisfaction from success at difficult tasks
- problem-solving and self-instructions when engaged in task

### A negative pattern:

‘performance orientation’

- belief that ability leads to success
- concern to be judged as able to perform
- satisfaction from doing better than others
- emphasis on competition, public evaluation
- helplessness: evaluate self negatively when task is difficult

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concern for *improving* one’s competence    concern for *proving* one’s competence

We have found in our own work that encouraging practitioners to challenge these fundamental beliefs is a good incentive for discussion and change of practice. In several schools in which we have worked recently, the teachers have found that the pupils who do well in end of key stage assessments do not always have a learning orientation. There is a widespread belief that inspectors are looking only at performance data to make their judgements during school inspections. Our evidence suggests, however, that it is often schools with high standards based on pupils' progress in learning that have the most successful inspections.

Teachers from two Buckinghamshire primary schools working with one of us have been researching the learning orientation of some of their pupils. They wanted to find out why some groups of students were failing to make adequate progress and also had poor attitudes to learning. In one school a group of year 6 boys was invited to share their perceptions of learning and describe how they saw an effective learner. It was discovered that these boys were predominantly performance orientated in their learning. This meant that they had a desire to *prove* rather than *improve* what they were doing at school. In the second school teachers discovered through talking and observation that the pupils with a learning orientation were more likely to like learning and being at school than their performance-orientated peers. They were also more likely to compare themselves with their previous performance rather than compare themselves with each other. They also recognized the need to practise in order to get better. Furthermore, the teachers found that several pupils designated as having special educational needs had a very good learning orientation. The two schools have been carrying out beneficial school improvement strategies with both pupils and staff as a result of these findings. This has resulted in improving the learning and attainment of many more pupils.

## **Meta-learning**

Gipps and Murphy (1994) remind us how important it is that learners have a sense of ownership over what they are learning. They need to feel that what they are being taught is relevant to their purposes for learning. Research indicates that effective learners have a learning rather than performance orientation as we have already noted. They also have more complex views of themselves as learners and greater control of their learning. They can set goals, evaluate what they are doing and monitor their learning.

Watkins et al. (2001) distinguish between 'metacognition' which concerns an awareness of thinking processes together with 'executive control' of such processes and 'meta-learning' which is much broader and includes an awareness of goals, feelings, social relations and the context of learning.

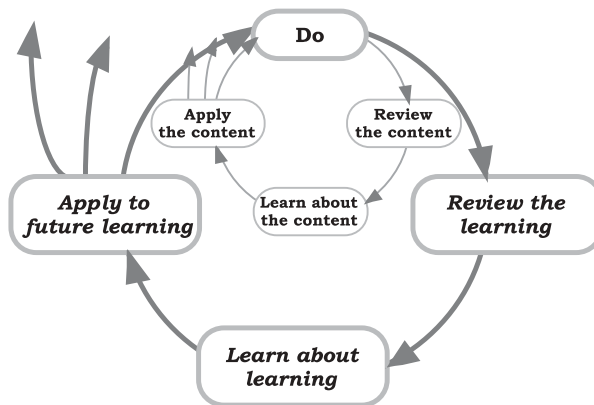
Metacognition refers to a second-order form of thinking: thinking about thinking. It is a process of being aware of and in control of one's own knowl-

edge and thinking and, therefore, learning. There are those who see it as ‘the engine of learning’ (Marzano, 1998).

Carnell and Lodge (2002, p. 18) describe the broader process of meta-learning as: ‘Standing back from the content of the learning and evaluating the effectiveness of the processes involved. The social and emotional processes implied here are broader than just ‘thinking about thinking.’ Developing a capacity to use meta-learning therefore means learners need opportunities to reflect on:

- their goals for learning;
- the strategies they are using to learn;
- how they are feeling about their learning;
- what the outcomes of their learning are.

We can conceptualize meta-learning as another central component of the learning process as illustrated in Figure 4.2. Learners here are reflecting on the *process* of their learning.



**Figure 4.2** An extra cycle in learning about learning

Source: Watkins et al. (2002, p. 6).

Teachers with whom we have been working have been developing successful strategies for enabling pupils to reflect upon and review their learning with each other. Some of the best practice is the use of ‘response partners’ who discuss their learning with each other and give each other feedback.

## **The nature of intelligence**

Claxton (1999) gives an example from the work of Robert Sternberg et al. (1981) of the unexamined way in which we view intelligence in our culture. Sternberg et al. say:



Suppose that admissions officers to colleges and graduate schools stopped using grade point averages and high scores on IQ-like admission tests to select students, and started using height ... . Under the new system, all the positions in society, which depend on educational success, would soon come to be occupied by taller people. Those at the bottom of the educational, financial and social pile would be shorter. Being tall would come to seem a natural corollary of success, and shortness of failure. As soon as such a society was established, the original arbitrary decision of the admissions officers would come to look like the most natural, obvious, necessary procedure in the world. Because tall people do well, it would be perverse not to select for expensive courses of education and training those people who already have the height qualifications. (Claxton, 1999, p. 30)

In this example, Sternberg and colleagues draw our attention to the arbitrary way in which we define intelligence in both school and society and hence exempt those who on a broader set of indices would be more successful.

Vicky Phillips, a District Superintendent in the USA, suggests that school improvement must be an attempt to build very different types of school communities to those of the past. Schools in these communities are built on a fundamental belief that all students can be successful, overcoming categories of below average, average and above average. The thinking behind the initiatives ‘Success for All’ and ‘No Child Left Behind’ in the USA endorses this view.

Our conceptualization of intelligence for the *intelligent school* is that:

- there are many different kinds of intelligence;
- intelligence is not fixed;
- it is possible to learn how to be intelligent and how to live intelligently;
- effort is the basis of intelligent learning.

It is still predominantly the belief in UK culture that intelligence is a fixed commodity; some people have more of it than others. This view can lead to the labelling of pupils based on fixed views of ability particularly in a school system driven by normative assessment results and the publishing of league tables. So, unfortunately, in many schools and classrooms phrases such as ‘Well what can you expect from these children?’ have not yet totally disappeared from professional vocabulary.

For a long time educators have questioned the value of IQ tests as an adequate measure of intelligence. They are limited because they only test particular abilities such as verbal and non-verbal reasoning, and do so at one point in time. Children labelled ‘below average’ may well live up to expectations regardless of ability. There are also problems labelling pupils as ‘gifted and talented’. For this reason, we are wary of the Gifted and Talented Programme within the Excellence in Cities initiative, whilst in no way wishing to deny that

pupils should be given every opportunity to pursue their talents. We believe that all children have talents and therefore we fear that unless this initiative is creatively handled it will merely reinforce the worst prejudices about the nature of intelligence.

Research suggests that intelligence can be expanded through learning in real situations. It can also be enhanced through instruction, self-instruction and experiences that cultivate metacognition. Pupils can be enabled to develop their gifts and talents, particularly if they learn to use effort-based strategies. The implication, as suggested earlier, is that teachers can provide activities that develop and enhance these aspects of intelligence and teach pupils how to develop effort-based learning.

Dweck (1999) suggests that the development of a mastery or learning orientation depends on the way that people understand the nature of their intelligence. She has identified two very different ways that people understand and internalize intelligence. The first is an entity view; the idea that intelligence is something fixed and unchangeable within. For others, intelligence is something that can be developed through learning. This is an 'incremental' view of intelligence and what Claxton means by learning being learnable. Dweck calls this the theory of 'malleable intelligence'.

According to the psychologist, Howard Gardner (1999), all learners have the capacity to develop and extend a number of different aspects of their intelligence. We would caution limiting learners in any way to these and suggest that the following list of Gardner's intelligences are expansive rather than reductive. They are not for either labelling pupils or limiting learning. Believing that all of us have the capacity to develop in all these areas, though some may need more help than others, has an impact on our view of ability and consequently on teaching strategies.

- 1 Linguistic: the intelligence of words.
- 2 Logical-mathematical: the intelligence of numbers and reasoning.
- 3 Spatial: the intelligence of pictures and images
- 4 Musical: the intelligence of tone, rhythm and timbre.
- 5 Bodily kinaesthetic: the intelligence of the whole body and the hands.
- 6 Interpersonal: the intelligence of social understanding.
- 7 Intrapersonal: the intelligence of self-knowledge.
- 8 Naturalist: the intelligence of context and environment.
- 9 Existential: the intelligence of ultimate issues.

The question we should be asking of our pupils is not 'how smart are you?' but 'in what ways are you smart?' (MacBeath, 1997).

Gardner's work has helped educators to see that the content of learning is not just about the types of cognition traditionally associated with school. Goleman (1996) supports this view. He demonstrates the nature and

importance of emotional intelligence and the need to become emotionally literate. This means realizing that the mind and the emotions are working in a fruitful partnership when learning is taking place. What Claxton (1999) refers to as drawing on ‘the rich mud of someone’s experience’. We discuss emotional intelligence in Chapter 7.

Handy (1997, p. 120) argues that: ‘Everyone can be assumed to be intelligent, because intelligence comes in many forms.’ From his experience of life he makes his own provisional list of 11 intelligences with the proviso that they need not, and usually do not, correlate with each other.

- 1 Factual intelligence – the facility that ‘Mastermind’ addicts have developed
- 2 Analytic intelligence – reasoning and conceptualising
- 3 Numerate intelligence – being at ease with numbers of all sorts
- 4 Linguistic intelligence – a facility with language
- 5 Spatial intelligence – an ability to see patterns in things
- 6 Athletic intelligence – the skill exemplified by those who excel in sports
- 7 Intuitive intelligence – an aptitude for sensing and seeing what is not immediately obvious
- 8 Emotional intelligence – self-awareness and self-control, persistence, zeal and self-motivation
- 9 Practical intelligence – the ability to recognise what needs to be done and what can be done
- 10 Interpersonal intelligence – the ability to get things done with and through others
- 11 Musical intelligence – this one is easy to recognise in opera singers, pianists and pop groups (ibid.).

A combination of the first three intelligences equips us for most tests and examinations. But we are arguing there is more to intelligence than succeeding in formal assessment. From our reading of the literature we have come to see that both Gardner’s and Handy’s intelligences describe the range of rich and varied outcomes of effective learning. Undoubtedly some of us have both preferences for and elements of aptitude for some aspects of intelligence rather than others. However these are not fixed, they vary at different times of life and can be learnt.

Resnick (1987) identifies a core theory of aptitude underlying most practice in American classrooms. This is generally believed to be hereditary and therefore effort makes no difference to learning; indeed, learning requiring effort could signal that you are not intelligent. Resnick views effort-based learning as the theory replacing aptitude theory. By treating pupils as if they are already smart then they come to believe that they are. They can then be successful. During a recent discussion in a first school Oliver remarked ‘If my teacher says that I can do it then I think that I can and then I can!’

Nida, a year 6 pupil in a primary school which has worked really hard at developing a learning orientation in children, sums up effort-based learning rather nicely:

Learning means that I have put my effort in to do something good and important. When I learn something it makes me feel really proud of myself because I know that I have learnt something new and wonderful. I know that I have learnt something because I haven't done it before, or I haven't done it properly before. I feel that my learning has improved for me because I can set myself goals which helps me to achieve much more, and I can take myself into my visual memory. Knowing that I can learn more makes it more easier not much more harder. It makes it easier because I know that I can do everything if I put a bit of effort into it.

## **The contribution of neuroscience**

Findings from neuroscience are giving us further insights into the nature of learning. While we are still not entirely sure how our brains work, Abbott (1994, p. 63) argues that:

One major discovery, which has revolutionised the way we think about the brain and how it learns, has been the fact that we know that it has plasticity, which means that the physical structure of the brain actually changes as a result of experience. The brain will change if stimulated through interaction with the environment

and, 'The brain learns when it is trying to make sense; when it is building on what it already knows, when it recognises the significance of what it is doing; when it is working in complex, multiple perspectives' (ibid., p. 73).

Researchers have known for some time that there are 'critical periods' in the development of the brain that require the right kind of stimulation. The work of Marian Diamond (1998) has enabled us to see the importance for brain development of rich, stimulating play environments for young children. She identified several factors in the learning environment that make a difference:

- a steady source of positive emotional support;
- providing a nutritious diet with sufficient protein, vitamins and calories;
- stimulating all the senses (though not all at once);
- an atmosphere free of undue pressure and stress, but with a degree of pleasurable intensity;
- presenting a series of novel challenges that are neither too hard nor too easy;
- encouraging social interaction for a percentage of activities;
- promoting the development of a broad range of skills and interests that are mental, physical, aesthetic, social and emotional;

- encouraging the child to be an active participant rather than a passive observer (ibid., pp. 107–8).

Recent work in the field of neuroscience has also reminded educators of the crucial role that spoken language plays in the cognitive development of pupils at all stages of schooling. Primary practitioners with whom we have been working on school improvement projects with a specific focus on improving learning, have been concerned to ensure that their curriculum is providing sufficient opportunities for speaking and listening alongside the current emphasis on literacy and numeracy. Research in a school one of us is working with has provided evidence to show that a deliberate attempt to enrich young pupils' opportunities for enquiry-based learning through talk and problem-solving has raised standards in both literacy and numeracy. Other schools we know are revisiting the role of drama and role-play in their curriculum for all ages of primary pupils.

The potential of the brain for learning is, in neurological terms, limitless. It is estimated that there are something like 2,000 billion brain cells each of which has tens of millions of possible connectors, or 'hooks', to other brain cells. In other words, there are billions of learning pathways, only a few of which are travelled. The untravelled paths become overgrown and fall into disuse. While this is, in part, a process of ageing, the capacity to learn throughout life, even into old age, depends on knowing how to make use of the brain's untapped potential.

## **Learning styles**

Researchers have also identified different learning styles and these have been of great interest to classroom practitioners. Dryden and Vos (1994) for example, have linked Gardner's work to the way we learn. They believe that each of us has a preferred learning and a preferred working style, and identify at least five style preferences.

Some of us, they suggest, are mainly visual learners: our learning is helped when we see pictures or diagrams. Others learn more by listening or are kinaesthetic learners: we learn best by using our sense of touch or by moving our bodies. Some of us are print orientated: we learn most easily by reading books. Others learn best when interacting with others. They suggest that we can and do use a combination of these strategies to learn, but one approach may be more dominant.

No doubt a contributory factor to some pupils' disaffection at school is that they do not have sufficient opportunity to learn in a way that helps them to access the curriculum. Schools with which we have worked have found that it is useful to be aware of the range of learning styles in their classrooms and, more importantly, for their learners to be aware of these too. Pupils who iden-

tify themselves as weak in one or more of the areas need to consider how they develop strategies to be able to learn through these approaches. However, given our argument about both intelligence and learning being learnable, we think these are best treated as a *range of possibilities for enriching learning rather than further fixed views of pupils*. In a culture that is prone to label and categorize we need to be aware of this danger with learning styles.

We prefer to think of different *approaches* to learning. Different learning situations need different approaches. For example, everyone is being given access to becoming a more visual learner in art or when they are out on school trips, whilst physical education (PE) and dance enhance the possibilities for kinaesthetic learning for everyone. Part of this process is selecting the most appropriate approach for the type of learning required. The *intelligent school* enables pupils to maximize the different ways in which they learn and not to be limited by the labels of particular styles of learning.

In this section we have reflected on some current theories and thinking about learning. In the next sections, we consider the nature of the learner herself. We pay attention to individual and group differences and then consider the importance of the perception learners have of themselves.

## **The nature of learners**

### *Learners come in different shapes and sizes*

Some children arrive on their first day of school being able to read. Others do not but will have developed aptitudes in other aspects of the curriculum. Some arrive appropriately dressed, well fed and well cared for. Some are fit and healthy. Some will enjoy sitting down quietly, speaking and listening to each other and the adults in the classroom. Others will prefer to move around boisterously. Different pupils will have had varying opportunities to develop the different intelligences identified by Gardner. The list of potential differences is very long and does not diminish as we get older. The consequence is that all learners will have experienced different learning opportunities and have different learning needs. Some will easily be able to play their part in the learning and teaching PACT (p. 91). Others will need more encouragement. Members of both sexes and all minority ethnic groups will be represented in all these categories.

### *Girls and boys: some differences*

There has been considerable concern recently about the underachievement of boys. As always it is important to look beyond the headlines and ask further questions. Which boys should we be concerned about (some of them are actually doing very well)? What about the girls (some of them are not doing very

well)? Class, race and gender are inevitably interrelated and it is very difficult to disentangle the individual effect. For example, when we focus on the achievement of Afro-Caribbean boys we need to consider race *and* gender *and* class issues.

We know that boys and girls can be socialized into different habits and that over a period of time there has been a change in their achievement patterns. For example, before 1988 (and before the compulsory National Curriculum) more boys than girls studied physics and chemistry subjects up to the age of 16. Current statistics show that entries and achievements are broadly even. This would indicate that whatever biological, physiological and genetic differences exist between girls and boys (and the jury is still out on what exactly these differences are) there are other factors at play. It is also important to remember that whatever the findings for the 'average' male or 'average' female there will be huge variations from the mean. So, for example, the average male is taller than the average female. However, the range between the tallest man and the smallest is greater than the difference between the average male and female. The implications for the classroom are that not everyone conforms to expectations and we need to look beyond the stereotype when addressing issues of equity.

Several researchers have argued that males and females tend to respond differently to the same stimuli or situation. Gilligan (1982), for example, demonstrated how girls tend to consider contexts and analyse the 'whys and wherefores' before making a judgement about a moral dilemma, whereas boys are more likely to create and stick to rules when deciding their opinion. It is important to note that Gilligan does not suggest that girls and boys have different abilities, but that they have different ways of using their abilities: that is, different cognitive styles. (See Figure 4.3.)

Calibration, which means making sense of new knowledge, may be very different for males and females as well as for people from different cultures. While there are conflicting theories about why these differences occur there is some evidence that females are more field dependent than males (although there is also criticism of the methodology used in some of the research which demonstrates this). Field-dependent learners are interested in the context and relevance of the issue being discussed. Field-independent learners are interested in concepts for their own sake.

Murphy (1988, p. 169), for example, argues that:

Typically girls tend to value the circumstances in which activities are presented and consider that it gives meaning to the issues to be addressed. They do not, therefore, abstract the issues but consider them in relation to the content, which then becomes part of the whole problem. Boys as a group, conversely, do consider the issues in isolation judging the context and the content of the activity to be idiosyncratic.



Figure 4.3 Helen Cusack in Myers (1992, p. 133)  
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Murphy (1988) gives several examples of this phenomenon. One is when primary and secondary age pupils were asked to design a vehicle and a boat to go round the world. As can be seen, the girls and boys in this example had very different perceptions of the same problem:

The boys' designs were army-type vehicles, sports cars, powerboats or battle-ships. The detail the boys included varied except the majority had elaborate weaponry and next to no living facilities ... . The girls' boats were generally cruisers, the vehicles family transport, agricultural machines or children's play vehicles. There was a total absence of weaponry in the girls' designs and a great deal of detail about living quarters and requirements, including food supplies and cleaning materials (notably absent in the boys' designs). (Ibid., p. 170)

Head (1996) points out that on occasions a field-dependent approach is advantageous and on others a field-independent approach is more appropriate. It is not suggested, therefore, that either way of responding is superior to the other. They are both valuable and sometimes one is preferable in a particular situation. Head (1996, p. 62) argues therefore that:



Field dependence and independence can be seen as value-free terms. In some contexts, for example locating which component of a car engine is malfunctioning, the extraction mode of thinking is needed. In other contexts, for example in environmental biology, the embedding mode is better, as we would need to consider how a change in one part of the eco-system affects other parts.

Learners need to develop both ways of responding. Gipps and Murphy (1994) make the point that those who set and mark test papers need to be aware of the different ways in which pupils could respond to the same question.

Some research by Daniels et al. (1996) focuses on special needs in primary classrooms. It demonstrates how much girls help each other to learn and how much more they do this than boys. The researchers speculate that this may have at least three important consequences. First, it may help reduce the number of girls needing extra support because they can get it from their peers. Second, the support given is likely to be appropriate because the peers know exactly what type of 'scaffold' is needed. And, third, the person giving the support can embed her own learning through the process of teaching someone else. She has extended opportunities to calibrate the information she is passing on.

Boys seem to be more motivated by competition with each other whereas research has found that girls prefer to work in co-operation with each other. Head (1996, p. 64) illustrates this point: 'If two girls are asked to co-operate in painting a picture together they negotiate an agreed plan. Under similar circumstances two boys may simply draw a line down the paper so each has half the page to complete and they then work quite independently.'

Cultural differences depending on ethnicity, country of upbringing and class will interplay with gender differences. So, for example, an upper-class Asian boy reared in Pakistan is likely to perceive the world differently from a working-class Asian boy whose upbringing has been in Tower Hamlets – though they will have race and gender in common. However, Head (1996, pp. 66–7) argues that:

The distribution of gendered roles in the work place shows broad similarities across many cultures. Although there may be regional variations in social practices in detail nevertheless there are enough underlying structural similarities for the explanatory models to have widespread credence. We might therefore expect both gender identities and preferences in cognitive and learning styles to be broadly similar in most cultures.

Head (1996, p. 68) states that the implication of all this for teachers is that if girls and boys:

prefer different learning procedures then teachers should be flexible in their choice of teaching and assessment methods. But these gender differences are not absolute, there is considerable overlap between the two sexes and considerable

variation within one group. A flexible approach to pedagogy should therefore be of general benefit to the school population.

## **Pupils' experience of their learning and the role of their teachers**

One of the goals of the work of ISEIC at the Institute of Education has been to re-engage with learners and learning rather than to improve teaching in isolation. This gives a powerful impetus to classroom-based improvement and has the benefit of involving the pupils in the process.

We begin to do this in five different but related ways:

- listening to pupils;
- noting and respecting their perspectives;
- giving their perspectives significance;
- reflecting on the meaning and implications we find;
- taking account of these in further research and action.

Surprising things come to the surface when we do this. Particularly, we learn how articulate and in touch even the youngest pupils can be when they are given time to talk about their learning and their experience of it at school. When asked what the word 'learning' means to them, primary-aged pupils replied: 'trying to achieve something you do not already know'; 'to be taught something and remember it'; 'when you have done something and know it well enough to do it again'; 'working hard'; and 'what the teacher tells you'. It is possible to discern in what they say that they also share the range of conceptions of learning that have been described earlier in this chapter.

Similar responses occur in relation to the question 'What makes a good learner?': 'listen to your teacher'; 'don't be afraid to ask for help'; 'have a go is better'.

We all had teachers that we recall because we remember learning with them. One of us was a head of house, advising year 9 pupils about their option choice, and remembers they would frequently want to pursue a subject because they liked the teacher who was teaching them that subject. The school 'line' was that that was not a sensible or mature way to choose subjects to take to examination level. Choices should be made on rational grounds based on future career ambitions rather than emotional and subjective feelings. Although she endorsed the pursuit of 'balance' and widening pupils' aspirations she always harboured feelings that choices based on teachers rather than subject content were actually just as sensible and rational (Myers, 1980).

As adult learners, the three of us know that we learn better, whatever the topic, if we find the teacher empathetic, interesting and inspiring. We like the teacher to explain the topic well, not to make us feel stupid when we do not understand immediately, and to treat us as someone who may have something

interesting to say. We like to be stretched and challenged but also to be allowed to challenge conventional wisdom. We suspect that we are not alone here and that these preferences are common to all ages and stages of learning.

A few years ago, one of us informally interviewed secondary pupils in a number of schools about their views on their education. Their answers to questions about how they learn were almost always the same, whatever their age. They said they learn best with teachers who:

- explain things well;
- listen to them and are concerned about them as an individual;
- show them how to get better;
- keep control of the class;
- have a sense of humour.

In response to a question in a survey asking pupils in one secondary school to describe a good teacher the following were typical responses. A good teacher is someone:

- who helps you do your work;
- who can control the class;
- who listens to me;
- you can talk to and ask them when you are worried or stuck;
- who helps you and teaches you something;
- who is good with kids, can control kids, who knows what they are doing;
- who has a laugh but gets some hard work done.

A year 10 pupil summed up the general feeling: 'A good teacher is someone who, if you don't understand the work, explains it to you patiently. Isn't too strict but when pupils are being pathetic, can control them, and you can talk to and have a laugh with him/her' (Myers, 1996a).

Rudduck, Chaplain and Wallace (1996) have emphasized the importance of asking the learner about her/his needs. They tracked pupils during their last four years of secondary schooling. They claim that although the pupils were very appreciative of the support and time they received from their teachers, they felt that the *conditions of learning* they were subjected to did not adequately take account of their social maturity: 'nor of the tensions and pressures they feel as they struggle to reconcile the demands of their social and personal lives with the development of their identity as learners' (Rudduck, Chaplain and Wallace p. 1). The authors consequently suggest six principles that would make a significant difference to learning. They acknowledge that the conditions are not new and that many schools will have already incorporated them in their practice. However, the importance of these principles, outlined below, is that they are presented from the pupils' perspective; not what we think is good for them, but what they think is good for themselves.

- 1 Respect for pupils as individuals and as a body occupying a significant position in the institution of the school.
- 2 Fairness to all pupils irrespective of their class, gender, ethnicity or academic status.
- 3 Autonomy – not as an absolute state but as both a right and a responsibility in relation to physical and social maturity.
- 4 Intellectual challenge that helps pupils to experience learning as a dynamic, engaging and empowering activity.
- 5 Social support in relation to both academic and emotional concerns.
- 6 Security in relation to both the physical setting of the school and in interpersonal encounters (including anxiety about threats to pupils' self-esteem) (Rudduck, Chaplain and Wallace, 1996, p. 174).

To create appropriate conditions of learning, the authors suggest that we need to consider organizational structures and pupil–teacher relationships. They also argue that in addition: ‘pupils need to have a sense of themselves as a learner; status in the school; an overall purpose in learning; control over their own lives; and a sense of their future’ (ibid., p. 174).

Rudduck and Flutter (2002) suggest that involving pupils in their learning can help them develop a stronger sense of membership of the organization and a feeling of belonging to it. This is particularly relevant for young people who feel marginalized. They recommend that schools abide by the following principles when consulting pupils:

- that the desire to hear what young people have to say is genuine;
- that the topic is not trivial;
- that the purpose of the consultation is explained to the young people;
- that young people know what will happen to the data and are confident that expressing a sincerely held opinion or describing a feeling or an experience, will not disadvantage them;
- that feedback is offered to those who have been consulted;
- that action taken is explained and where necessary justified so that young people understand the wider context of concerns, alongside their own input, that shape decisions (ibid., p. 3).

Consultation can be about relationships between teachers, pupils and the community, for example what happens about racism, school-level issues such as rewards and sanctions, or at classroom level about learning. Rudduck and Flutter suggest that schools wanting to consult pupils about their learning may wish to raise the following questions with pupils:

- What gets in the way of learning in class and what helps learning?
- What are the qualities of a good teacher?

- What makes a good lesson?
- How can feedback be used to improve work?
- Which friends do you work best with and is that different for different subjects?
- Why do boys do less well than girls and vice versa in different subjects?
- What could be done about this? (ibid., p. 3).

Consulting pupils is not always easy and on occasions the messages from pupils may be sensitive to manage. Nevertheless, their feedback is an essential part of school self-evaluation.

### **The physical, emotional and social environment of school**

A perennial topic that is raised when pupils are asked about their school is the state of the toilets. This is not a trivial topic and their condition gives pupils important messages about what the institution feels about them. Appropriate, attractive and well cared for physical conditions support and facilitate learning. The *intelligent school* understands that an attractive, welcoming, comfortable and safe environment, with access to adequate appropriate resources, enables learning to take place and we refer to this again in Chapter 8. Schools that take these requirements seriously will take account of individual circumstances by, for example, considering what is ‘safe’ for pupils who are racially harassed on their way to and from school, how people whose first language is not English may be encouraged to feel welcome, and how pupils who do not have access to the latest technology at home can have this opportunity during and outside school hours. We can learn in different conditions (and in some parts of the world students have to), but it is much easier to do so when conditions help, rather than hinder, learning. External physical conditions can aid learning but learners also have internal requirements. For example, we are likely to be more responsive to learning if we are not hungry and not cold. Some learners are ‘morning people’ and some prefer to work late at night (the latter being difficult to cater for in schools that are open 9.00 a.m. to 4.00 pm.). In addition, we have emotional and social needs and preferences: ‘Emotion plays a vital part in learning. It is in many ways the key to the brain’s memory system. And the emotional content of any presentation can play a big part in how readily learners absorb information and ideas’ (Dryden and Vos, 1994, p. 351).

Some learners respond well to a competitive classroom environment, others do not. Some learners prefer to learn on their own and others learn best by working with other people. This preference may have as much to do with the task in hand as with the favoured learning need. Some learners prefer to work in peace and quiet, others like background noise such as music and others like to work in the midst of hustle and bustle. One of our colleagues who

has her own office chooses to write her academic papers in the midst of the comings and goings of the secretaries' office. When questioned about this she explains that she cannot work in silence.

Schools may find it difficult to respond to these varied preferences but during the course of the day or the week it should be possible to ensure that learners experience a range of conditions, some of which will suit them more than others.

## **Conclusion**

In this chapter we have reflected on thinking and research about learning, stressed that learners have different learning needs and discussed what learners say they want from their teachers and schools. We have suggested that learning involves a PACT. This PACT is between the learner and whoever the learner is interacting with. We develop this idea further in the next chapter.

In summary, the *intelligent school* is up to date with recent literature about learning and knows how to create contexts for learning. It understands how to motivate and inspire its learners and how to encourage them to participate in learning. Its goals are to help the learner understand how to learn and to *believe that it is possible* to do so. It knows that learners need to make sense of what is being learnt. This will be dependent on many factors such as the learner's prior experiences, her self-esteem, her heritage, her attitude to learning and her attitude to what is being taught. It will also be dependent *on the way* she is being taught. This part of the process has traditionally been in the control of the teacher. Increasingly we are seeing the importance of teaching being much more open to feedback from learners. The teachers themselves need to be learners as well as being knowledgeable about what they are teaching. Their side of the PACT is to be aware of these factors, in order to be able to assess what is needed and to provide the appropriate conditions for learners to continue to develop their learning orientation and love of learning. The following chapter looks at the implications of this for teaching.

## **Questions for discussion**

- 1 Think of something you have enjoyed learning recently. What were the factors that made your learning work well for you? What did you do?
- 2 What are the implications of the section on recent research and thinking about learning for your classroom practice? What are the implications for those with leadership responsibilities?
- 3 In what ways do you prefer to learn? What are the ways you need to develop your orientation to learning? How does this influence your approach to teaching?
- 4 Do the girls in your classes support each other in different ways from the

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- boys? If so, does this matter? Can you/should you do anything about it?
- 5 Ask your pupils what helps their learning. Do their answers surprise you? Do they differ depending on their age or ability (or some other variable such as sex) or is there considerable consensus?
  - 6 Are your approaches to teaching appropriate for your pupils' learning needs? How do you know?