

Enquiry-based Learning and *Open Futures*

Enquiry helps children to understand the value of the skills they are learning

By Roger Sutcliffe

The *askit* strand of *Open Futures* has been developed by SAPERE, the UK charity for Philosophy for Children also known as P4C. P4C is an approach to teaching and learning which has been developed over 30 years, and is now practised in 60 countries worldwide. Research has clearly established it as a very effective way of raising academic achievement, enhancing pupils' social, emotional and behavioural development, and realising creative potential with any age group, any ability, and in any subject.

Throughout this publication *askit* is used to refer to P4C in the context of *Open Futures*.

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Aims & context of this handbook

Open Futures is not the only educational initiative specifically designed for the 21st century, but it is one of the best grounded, balanced and imaginative.

Open Futures is a skills and enquiry-based curriculum development programme, linking learning and life. It was developed to help children discover and develop practical skills, personal interests and values, which will contribute to their education and help to enhance their adult lives. It also, critically, builds on the modern belief that creative reflection is essential to deep learning – whether of skills ('know how') or of facts ('know what').

The practices of creative reflection and enquiry dominate and define the *Open Futures* curriculum. Split into four strands – *growit*, *cookit*, *filmit* and *askit* – the programme introduces schools and children to a new way of learning, embracing skills-based education, but in such a way that the fosters, above all, the spirit of discovery and curiosity.

As such, *askit* does not work independently of the rest of the curriculum, but rather informs the whole *Open Futures* approach to learning. Developed for *Open Futures* by SAPERE, the national charity that promotes Philosophy for Children (P4C), *askit* helps children to develop their ability to question, to reason, to hypothesise and, above all, to communicate.

This booklet is designed primarily to illuminate this pedagogy and to show how it can help teachers lead children's learning across the entire curriculum, and not just in the other three strands of *Open Futures*.

Attractive though this idea may be, however, it faces at least two big challenges. The first is to overcome an educational culture that places much more value on children's answers than on their



school. Practice in Early Years and in a few classrooms beyond may have redressed this imbalance more recently, but, in truth, most classrooms do not celebrate or cultivate children's curiosity as much as they comply with government curricula and adult priorities.

A second challenge lies in teachers themselves gaining a better appreciation, and then application, of enquiry skills. Again, studies right up to the end of the 20th century showed that a very small proportion of teachers' own questions (between 4% and 8%) were 'higher-order' ones, i.e. those likely to prompt and promote better learning and understanding in their pupils.

Open Futures addresses these challenges directly and optimistically. It aims to foster a different classroom culture, within which teachers and children collaborate in Enquiry-based Learning (EBL) – and, thereby, develop more personalised skills and values. This booklet is mainly about how this might be achieved, but it starts with a closer look at the roots and nature of EBL.

“Isn't most healthy learning based on a learner's desire to understand?”
“Isn't that what is making you read and wonder about these very words?”

questions. Not only is most formal learning in schools based on predetermined answers – what adults have decided students 'need to know'; but it is also well established that students' own questions are hugely outweighed in the classroom by those posed by their teachers.

A review of studies by Professor James Dillon (1988, *The Practice of Questioning*, Routledge, p. 7) found that in an average school hour, at both primary and secondary level, the teacher asks over 80 questions, while the students, between them, ask just two. This review came shortly after a study (Tizard and Hughes, 1984, *Young Children Learning*, Harvard University Press) that indicated that 4-year-olds ask on average 20–30 questions an hour, but that this figure drops dramatically during the time they are in



How this handbook may be used



Sections 1 – 3:

Because the first half of the handbook is mainly looking at EBL in relation to general educational purposes and processes, it may be of more immediate significance to Heads and Curriculum Coordinators than to individual teachers of the *Open Futures* strands. Put another way, these sections would support the planning and coordination of an increasingly creative curriculum and 'open' approach to learning and teaching. That is not to say, of course, that would not be of interest to anyone with an interest in education. Quite the reverse, in fact. Teachers, parents and governors may enjoy these sections, particularly because they give a sense of what is – and, more importantly, could be – going on in schools.

Sections 4 – 6:

To a greater extent, these sections detail particular models of Enquiry-based Learning, from which individual class teachers might draw a number of ideas for their own teaching and planning. These range from the 'dramatic-enquiry' approach to learning of the 'Mantle of the Expert', which may be used more, or less, systematically in the classroom, through to examples of very systematic enquiry curricula, such as the IB Primary Years Programme. They also provide many examples of tools or techniques that teachers may build into their repertoire, to stimulate their children to talk and to enquire.

There are, of course, many educational models or approaches that could be thought to promote, or at least support, Enquiry-based Learning, and this handbook seeks only to offer a few examples, sometimes with links to websites for further exploration.

Naturally, it is implicitly endorsing the samples it has chosen, but it refrains from recommending any particular one of these, in the belief that one size does not fit all.

Schools or teachers involved with *Open Futures* are encouraged, however, to discuss the models with *Open Futures* as part of the evolution of the project in their context. This would be consistent with the *Open Futures* philosophy that, just as the future (and therefore the learning) of every child needs to be regarded as open, so should the future (and therefore the curriculum) of the school be regarded as evolving.

Activity boxes:

Interspersed throughout the handbook are various activities designed to encourage enquiry about the nature and nurture of enquiry itself.

Such activities could be valuable for any teachers, not only those involved in *Open Futures*, and indeed it is envisaged that some readers may be inspired to develop their own enquiries into the very activities of learning and teaching. Such enquiries or researches could become part of M level studies, such as the MEd in Practitioner Enquiry at the Research Centre for Learning and Teaching, Newcastle University.

Even if the activities (22 in all) are not pursued systematically, Headteachers might find some of them to be useful catalysts for discussion and development among staff of the whole school. Or *Open Futures* coordinators and teachers might use them either as part of their own team and curriculum development, or as ways of showing their colleagues how *Open Futures* and its ethos can impact on children's learning across the curriculum.

What is Enquiry-based Learning?

It is the sort of learning that encourages children to be active and inquisitive, helping build a sense of wonder and fascination about the simple art of ‘wanting to know’.

Any educated English speaker will, of course, have an immediate intuitive understanding of this idea, and of what it might look like in practice.

They will be able to envisage a person or group – not necessarily young people - who are endeavouring to learn something or other.

They may be envisaging a formal situation, though, again, not necessarily so - learning often happens informally, perhaps more often than we recognise.

What will certainly characterise this sort of learning, though, is a particular attitude on the part of the learners.

They will be attending to something with a particular goal – namely, understanding (or, perhaps even beyond that, of being able to apply understanding by taking some action or other).

Because understanding is complex – grasping at least one thing in the context of another, though more usually grasping several things in the context of many - they will be attending with a particular readiness to ask questions as a means to understanding.

“ If you should ever be charged in actual fact with the upbringing and education of these imaginary children of yours, so you will make a law that they must devote themselves especially to the technique of asking and answering questions.”

– Plato’s Republic

Like so many things – especially practices – that are given labels, ‘Socratic Questioning’ has ended up meaning different things to different people. That is in the spirit of enquiry, but, most important in this context is the fact that Socrates’s enquiring mind continues to provide an inspiration to teachers and students alike.

Another, perhaps equally important, inspirer of Enquiry-based Learning was the American philosopher, John Dewey (1859 – 1952).

Activity 1

Wondering about Active Reading and Understanding

Again, is that not what you are doing now, as an active reader?

Are you not wondering:

- Whether understanding is, in fact, the goal of learning?
- Whether all understanding is complex?
- What the step is from understanding/ comprehension to application?
- Or, perhaps, whether questions are the only/best means to ‘getting’ it?
- Or, indeed, whether questions have to be verbal?

In short, this sort of learning depends upon the learner’s being active and inquisitive.

Of course it is no simple matter to create and preserve a culture of inquisitiveness and curiosity in the classroom. Something of the history or tradition behind EBL will help refine the idea and consolidate the practice.

Art Costa, the American educationalist who promotes ‘Habits of Mind’ and what in the UK is called ‘Concept-based Learning’, attributes the coining of the phrase ‘Inquiry-based Learning’ (the American version of EBL) to J. Richard Suchman, a professor at the University of Illinois in the late 1960’s. He acknowledges, however, that such learning was effectively at the heart of what Socrates taught. The philosopher was well known for posing questions that made people recognise their need to think harder in order to understand.

His influence on the general theory and practice of education in the 20th century began with the setting up of the first Laboratory School, at Chicago University in 1896. To this day, the school celebrates the founding principles on its website:

“Learning by doing has guided the efforts of the University of Chicago Laboratory Schools since Professor John Dewey first began testing his educational theories in 1896. Beginning with a handful of children and growing to over 1770 students Lab has earned a well-deserved international reputation for excellence.”

It will be clear from this that the *Open Futures* emphasis on practical skills is following in a fine tradition. If you are particularly interested in Dewey’s educational theory – from which the so-called ‘learning through doing’ approach was thought to derive – there is more about him in Appendix 1, including his ‘six steps’ of enquiry.

Activity 2

A ranking exercise about Wondering

Even the simple remark of Socrates, “*Wisdom begins in wonder*”, could set the tone for a new approach to learning in a classroom.

Here are 5 other quotations celebrating enquiry and wonder. For yourself, or with your class, rank the 6 quotations in a 2 x 3 order (3 favourite, and 3 least favourite), and consider using one or more of them as banner displays in the room.

1 *Learn from yesterday, live for today, hope for tomorrow. The important thing is not to stop questioning. Curiosity has its own reason for existing.*

– Albert Einstein, Scientist, 1879 - 1955

2 *He who asks a question is a fool for five minutes; he who does not ask a question remains a fool forever.*

– Chinese proverb

3 *You can tell whether a man is clever by his answers. You can tell whether a man is wise by his questions.*

– Naguib Mafouz, Egyptian novelist, 1911 –

4 *The power to question is the basis of all human progress.*

– Indira Gandhi, Politician, 1917 – 1984

5 *Questions are the tools with which to take control of your own learning.*

– Roger Sutcliffe, Teacher, 1952 –



The Spirit of Enquiry

askit provides the framework within which the desire and confidence to question and investigate will be fostered, helping to turn classrooms into communities of enquiry.

The 'holy grail' of EBL, of course, is to turn one's classroom into a 'community of enquiry', in which everyone has both the will and the skill to communicate with, and learn from, each other.

A route to such an outcome is provided by *askit*:

- natural to children, building on questions about things ('big ideas') that can be puzzling to them, such as friendship, family, fun and freedom (or the lack of it)
- accessible to all children because it involves no technical language and is to do with their own experiences
- engaging for children because the 'big ideas' are important to them, and because they want to hear what their peers have to say about them
- inclusive in the sense that its main form is whole, or small, group dialogue, so that everyone can share the benefits of good thinking and learning
- creative, since other people's ideas prompt children to come up with ideas of their own
- disciplined towards critical thinking because of the need to communicate well and the desire to reach agreement based on sound reasoning.

The emphasis on creative and critical thinking is not new, but *askit's* further emphasis on caring and collaborative thinking marks it out as a special, holistic approach to the development of Personal, Learning and Thinking Skills (PLTS – see Appendix 4).

Once children have developed the will to think together, and enough skills to think confidently for themselves, they can bring the spirit of enquiry to almost any classroom activity – and certainly to the sort of collaborative learning that is being encouraged in *growit*, *cookit* and *filmit*.

The spirit of enquiry can be developed in other ways, but it is important to emphasise the spirit or ethos of enquiry (rather than particular tools for stimulating enquiry) that is central to *askit*. Students learn to use tools for enquiry in the traditional 'subjects', but sometimes this context of learning suffocates the spirit of enquiry. The ethos of enquiry has more to do with healthy attitudes (on the part of teachers as well as learners) than with the mere accumulation of knowledge or application of skills.

If the 'knowledge explosion' was of concern in 1976 – well before the age of the personal computer – it should be concentrating the minds of educators all the more in the 21st century.

“ To my mind, education is the spirit of enquiry, the ability to keep one's heart and mind open to beauty and goodness, indeed all that surrounds us, to be able to think and judge for oneself. Education should inculcate a lifelong habit of learning. And today this is all the more necessary because the corpus of knowledge is increasing at a tremendous pace, often making what one has learnt obsolete.”

– Indira Gandhi, Convocation address to the North-Eastern Hill University, Shillong, April 24th 1976



Happily, a consensus has emerged in the UK that the National Curriculum had placed too much emphasis on information to be processed, rather than the skills for processing it. As the executive summary of the Rose Report made clear:

Many teachers have told the review that because the existing curriculum has so much prescribed content they do not have time to teach it in depth, or for children to consolidate their learning. The Cambridge Primary Review and the Children, Schools and Families Committee also take the view that the curriculum is overloaded. This issue gave rise to a central requirement of this review: to reduce prescription and overload by reviewing the current programmes of study so that schools have greater flexibility to meet pupils' individual needs and build on their prior learning.

Even before this review, the QCDA had already begun to reconfigure the curriculum, through its work on the 'Big Picture'. Not only did the Foci of Learning extend the skills dimension by adding Personal, Learning and Thinking Skills to the basic skills of Literacy, Numeracy and ICT, but there also was a new, separate focus on attitudes and aptitudes.

The other very significant innovation in the QCDA Big Picture was in regard to the focus on 'knowledge and understanding'. This was now pointed in the direction of 'big ideas that shape the world' – providing a simple and sustainable way of managing content pressure.¹

Finally, it is important to distinguish the spirit of enquiry from that of debate. The latter is a formal process, the object of which is to win an argument. This process can so easily descend into point-scoring and rhetorical tricks, with speakers rarely changing their position.

The spirit of enquiry is very different from this. It aims to understand people or things better. Often this is achieved by another key disposition or mindset: 'humble listening', not arrogant talking.

Above all else, in enquiry it is regarded as healthy to change one's mind. It is a sign of growth and development, not of weakness. This is the spirit that a community of enquiry should be deliberately and steadily cultivating.

Ideas for catching and coaching the spirit of enquiry

1 Validating questions

This is largely a matter of raising the profile and valuation of questions in the classroom. It could be done in various ways:

- a Responding, unlimitedly, every time a child asks a question – always by commenting in some way, and sometimes by having the question recorded. That could be done in a class 'question book', or perhaps more easily on special 'question memos' or post-it notes. The slips could be put into a 'question box'; the post-it notes could be stuck on a 'question wall'.

The questions could be attended to later – as examples to be categorised or connected (to each other or to wider learning) and some could be carried forward for further research or reflection.

It is important to note that we are not talking only, nor even mainly, of 'philosophical' questions here. All children's questions should be valued, though not all need become the focus of whole-class enquiry.

Furthermore, the distinction drawn between 'research' ('factual') questions and 'reflection' ('philosophical') questions is an important one, but so is the relationship between them. More is said about this in the section on the role of concepts in learning, pp 28.

Activity 3

Recognising and Ranking Healthy Mindsets

Determination, adaptability and risk-taking were given as examples of healthy mindsets. These, undoubtedly, are related to the spirit of enquiry. However, other habits of mind (to use Art Costa's expression see Appendix 5) might play an even bigger part in enquiry – for instance, open-mindedness, empathy, accuracy, connection-making, perspective-taking, and, of course, criticality.

As an exercise in appreciation, by yourself or with your class, you might consider arranging these 9 habits of mind (or others of your choice) in 3 x 3 formation, i.e. 3 most important, 3 least important and 3 in the middle.

In the process you might even do some 'thinking about thinking' (or metacognition, to give it its technical term), and decide which of them is helpful in completing this particular task, of ranking. For more on habits of mind and healthy mindsets.

¹ A video explanation of the Big Picture is still available on <http://curriculum.qcda.gov.uk>

- b** Appointing a new 'question monitor' or 'question counter' each week, or perhaps each day, whose job it is to tally the number of questions that the teacher asks the class, and the number that the children ask. Bearing in mind the research of Professor Dillon, it would count as a community success if the ratio of the latter to the former were higher than 1: 40! Perhaps a new target might be set occasionally.

Of course, the target should not be one of quantity alone. Quality of questioning is ultimately more important than quantity. Following the advice of the late Ted Wragg, children should be particularly encouraged to ask higher order questions of meaning and value.

- c** Celebrate questions asked by children. For example, pupils could be invited to nominate questions for 'Question of the Week'. This should be displayed prominently. The Head could reinforce the award, either in person or in assembly. Or children could write their own questions on special slips, to be signed by the teacher and taken home for parents to share. Particularly good questions for reflection could be taken home for 'hometalk', with time the next day earmarked for discussion.

2 Questioning questions (and other forms of enquiry)

This can be done precisely to improve the quality of children's questioning. Through thinking about questioning itself, children should, over time, become more appreciative of what would count as a good question and become more inclined to practise the art of questioning.

- a** A first focus might be on the different sorts of questions that people can ask. Questions can be sorted by subject, of course, such as historical or scientific. However, we do not live our lives in subject-boxes. An alternative approach could be to collect questions from everyday life (including the classroom) with children as 'collectors'. Classes can then see if any other categories emerge naturally. Would they all be, still, essentially by 'subject', (a 'sports question', for example), or might some be by 'purpose'? For example, what sort of question was the one you have just been asked? What sort of question is this one?
- b** A second, even more precise, focus might be on the different forms of questions. At the elementary level this might be a matter of noticing how often the main 'starter' forms are used. More advanced analysis might lead to distinctions between more 'closed' starters, such as Where, When, Who, and more 'open' ones, such as Why and How. Usually the former are looking for specific places, times or people, while

the latter are looking for more complicated reasons, causes or processes.

Such analysis could also lead to a recognition that questions come in other important forms, not least through the use of question 'enders' or 'tags', such as isn't it? Or doesn't it? Or should it?

- c** Perhaps the most advanced awareness of all is to recognise that enquiry may not be in the form of a direct question at all. Some statements, such as the one before this, beginning 'perhaps', can be put forward as tentative proposals; while others, such as this one, might be deliberate provocations for their audience or readers to respond to.

In either case, a response is being sought or invited. At the least this might be some private reflection, but in some cases, such as in an exchange of speeches or letters, it would be an oral or written answer.

As well as provocations and proposals, statements can be put forward as speculations or hypotheses. It could be a good idea to introduce children to such 'invitational' words, of which challenge, argument, theory, guess and suggestion are examples. What counts, though, is not so much the forms of words but the spirit in which utterances are made. Again, enquiry comes down to (intellectual) will rather than (verbal) skill.

Activity 4

What about 'What'? A small research project

Ask your children to look out for, and make up, questions beginning with 'What'.

Some might be more **closed**, such as:

'What time do we finish?'

and some might be more **open**, such as:

'What could we do to improve our classroom?'

By examining a number of questions, children might not only grasp more clearly the difference between closed and open questions, but also get a sense of the role and range of such questions in enquiry and learning. The project could be extended, of course, to consider other question-starting words, or to questions in general, preferably examining 'real life' questions, rather than ones made up specially for the exercise.

Pointers for parents as well as teachers

Isidore Rabi (1898 – 1988), a Nobel Prize winner in Physics, is reported to have said that when he was at school, his mother did not ask him at the end of the day what he had learnt, but what questions he had asked.

"The test of a good teacher is not how many questions he can ask his pupils that they will answer readily, but how many questions he inspires them to ask him which he finds it hard to answer."

– Alice Wellington Rollins (1847 – 1897)

The point is that questions are not all, and not the only, signs of an enquiring spirit. Some statements can be thought of as enquiries, and even some actions, too. Think of everyday trial and error experiments, or even of babies exploring with their hands and mouths.

3 Questioning answers

Another part of good enquiry practice is to be continually checking how well questions have been, or are being, answered.

Of course, when teachers ask closed questions, there may be little doubt whether 'the' answer has been given. However, when a teacher asks a more open question, their management of the attempted answers takes on more importance. They need, on the one hand, to encourage a range of answers, in the spirit of open enquiry, but also, on the other hand, to probe for relevance and reasons, assumptions and evidence, implications/consequences and complexity/comprehensiveness, in the spirit of accurate enquiry. Of course, they will hope that their own modelling of such probing questioning will, in due course, become part of their children's practice.

There is little doubt that philosophical enquiry is among the best ways of practising precisely such questioning. In the study of philosophical enquiry in 18 primary schools in Clackmannanshire,

it was found that teachers doubled their use of open-ended follow-up questions in response to pupil comments, while the students themselves showed an increase in critical thinking skills. 'Pupils supporting their own view/opinion with a reason' doubled in the experimental group over a six-month intervention.

There is more about the Clackmannanshire research, and about probing questions, inspired by Socrates's practice, in the *Askit Level 1 handbook*.

The commonplace observation that students in exams – even at HE level – often fail to answer the question suggests another very good reason for spending time on the comparison and evaluation of attempted answers.

4 Practising questioning

Questioning is like any other skill. It improves with concentrated practice. Later in this booklet there will be some suggestions of games or activities that specifically practice questioning. The point to emphasise here is that such deliberate practice is not only effective in itself, but is both a sign of, and a stimulation of, the spirit of enquiry. One of the ways of telling what EBL looks like is to have evidence that the children regularly practise questioning. Having an *askit* lesson at least once a week, of course, is a good way of ensuring this. Such practice need, and should, not be confined to *askit* lessons. It will be shown shortly how topic/theme work can also provide opportunity for regular practice.

Activity 5

Questioning TV answers (and questions)

Perhaps another good way of raising awareness of the need to check the quality of answers by asking probing questions is to listen critically to interviews on the television or radio.

Politicians' answers, of course, are notorious for failing (no doubt deliberately in many cases) to address the question. But the 'non-answer' is very common, whether because of nerves, or lack of practice.

Try recording some interviews from TV – *Newsround* might be suitable, or perhaps an animal documentary – and discussing with your children how well the interviewers' questions have been answered. How could they have been answered better? What second or 'follow up' questions could the interviewers have used to get better answers?

Practising EBL

There are a number of strategies and concepts about Enquiry-based Learning that have been espoused by educationalists over the years. A knowledge of their theories will help to show you what EBL looks like in practice.

Having explored how the spirit of enquiry can be nurtured on a regular basis, we can now focus even more on what EBL looks like in practice, and on what makes it significantly different from other approaches to learning.

The approach suggested in Activity 6, of building learning from children's own experience and observations, is part and parcel of the wider philosophy or pedagogy of EBL, as articulated in the *Open Futures* handbook:

Enquiry-based learning and teaching starts from the beliefs that:

- Effective teaching builds on what children already know and gives them the tools to move their thinking forward.
- Learning happens naturally by discovery and problem-solving, which requires pupils to hypothesise, ask questions, discuss lines of enquiry and find solutions.
- The natural desire to know, to explore and to wonder is what defines children and developing that intuition is central to any pupil's development.
- Teachers should help pupils to grasp the fundamental principles of a subject and the connections between ideas within and across subjects.

These EBL beliefs are probably espoused in principle by most teachers, but in practice there does not seem to be so much EBL going on. Why is this?

- One answer might be that they are not clear what tools the children can be given to 'move their thinking forward'.
- Another might be that teachers cannot provide children so easily with opportunities for discovery and problem-solving.
- A third might be that teachers are not quite sure how to develop the children's natural intuition or desire to wonder.
- And a fourth might be that the convenience of dividing the curriculum into subjects works against connecting ideas between subjects, while also making it harder to grasp the fundamental principles of those subjects.



Activity 6

Thinking about Questions to start Enquiries

One way of contrasting EBL with other approaches is to consider the remark by Guy Claxton, Co-Director of the Centre for Real-World Learning and Professor of the Learning Sciences, at the University of Winchester:

“ Good learning starts with questions, not answers.”

You might discuss with colleagues and pupils

- just how much of their learning starts with questions
- how much more could

Here are a few more thoughts to provoke:

“ The conventional way of teaching history is to focus on events of long ago, whilst the conventional way of teaching science is to focus on the here and now. But children might be more engaged with both ‘subjects’ if we switched the focus around.”

“ We could be encouraging children to enquire historically: ‘How come things are as they are now?’ And we could be encouraging children to enquire scientifically: ‘What problems led people to make discoveries that we now depend upon?’ ”

You could even begin addressing the last question by inviting your children to make a class list of some of the main things we depend upon in our daily lives; then ask them to imagine what sort of discoveries might have been needed for those things to be available to us (assuming, that is, that most, if not all, of the things could not be found ‘naturally’).

This could be the starting point for some individual or small group enquiries – perhaps even discoveries – of their own.

Activity 7

A Challenge or a Chance?

Thinking about reasons for learning/subjects

If you have to learn about history as part of the curriculum, the important question ‘why learn history?’ might seem unnecessary. However, children, even young children, could think of perfectly good reasons for learning from the past, and if they were given the chance of articulating them, their motivation to learn would be much the greater.

Why not give your own children the chance to ask such a question about history, or indeed any subject in the curriculum? You might be surprised by their appreciation.

If you have a class of natural philosophers, you might even consider giving them this quote and asking if they agree with it. They might have to agree on its meaning first!

“History is philosophy learned from examples.”
– Thucydides, 460 – 399 bce

Art Costa, who was referred to earlier as the advocate of ‘habits of mind’ had this to say of EBL:

“ Some of the discouragement of our natural inquiry process may come from a lack of understanding about the deeper nature of inquiry-based learning. There is even a tendency to view it as ‘fluff’ learning. Students who actively make observations, collect, analyze, and synthesize information, and draw conclusions are developing useful problem-solving skills. These skills can be applied to future ‘need to know’ situations that students will encounter both at school and at work.”

But perhaps the following gives the best account of EBL for our purposes:

“ Knowledge, understanding, tools, skills and strategies are the essential components of teaching and learning through enquiry. An enquiry-based curriculum provides opportunities to introduce, practise, share and evaluate each of these components and their relationship with each other. Effective enquirers use each component to exploit the others to their full extent. Thus enquiry makes sense of skills by providing them with a context and a framework.”

– Dr. David Leat and Rachel Lofthouse,
Research Centre for Learning and Teaching,
University of Newcastle upon Tyne

Knowledge for EBL

In a way it is peculiar to talk about ‘knowledge for EBL’, since a more natural thing might be to talk of ‘EBL for knowledge’, with knowledge more as the outcome of enquiry than the other way round.

The point, though, is that existing knowledge is a continual resource for building further knowledge. The properly increasing emphasis in the curriculum on helping children develop skills for learning and for life should not be seen as an undervaluing of knowledge, either for its own sake or for important personal and social purposes. As Steve Williams, former editor of *Teaching Thinking and Creativity*, put it:

“ Knowledge, good thinking and creativity are mutually supportive. For example, making a decent analogy, a crucial aspect of good thinking, would be much harder without a reasonable level of general knowledge. Making meaning is often brought about by making connections. The more knowledge we have the more connections we can make. The same is true of creativity and imagination for, other things being equal, the greater our store of knowledge, the more likely that interesting associations will be thrown up in our minds.”

– *Teaching Thinking and Creativity, Issue 15*

So, the celebration, as well as the pursuit, of knowledge is part and parcel of an EBL curriculum and school practice.

There is another goal to be pursued in any healthy curriculum, and one, in fact, to which raw knowledge itself is subservient. That goal is wisdom (or, put another way, ‘good judgement’). We will return to this point when we look at the extent to which the *Open Futures* project can provide a basis for the pursuit of a healthy life in its fullest sense.

Activity 8

Thinking about Independent Thinking and Judgement

“The development of the general ability for independent thinking and judgement should always be placed foremost, not the acquisition of special knowledge.”

– Albert Einstein, ‘Out of my later years’, 1950

- How much time in classrooms is spent deliberately developing independent thinking?
- How much time is spent cultivating good judgement?
- How could schools make a better job of these responsibilities?

Open Futures would not be the only way of addressing them, but each strand could make a special contribution to the process.

askit and *filmit*, with their emphasis on critical and creative thinking, provide excellent opportunities for children to think independently, but also collaboratively; and *growit* and *cookit*, with their emphasis on practical skills and decision-making, provide equally good opportunities for children to exercise good judgement – ie. the choosing of good ends or goals, and of good means or steps towards those ends.

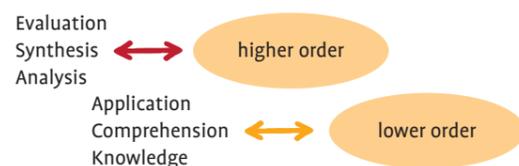
Strategies for EBL

Nurturing the spirit of enquiry could be regarded as a strategy towards the goal of increased knowledge or wisdom. However, there are other approaches to the same goal that could be regarded as complementary to EBL, or, indeed, conducive to it. The recent developments of Assessment for Learning (AFL) and Assessing Pupils’ Progress (APP), wisely applied, could certainly reinforce it. Of longer vintage, and perhaps more permanent value or at least structure, are the following.

1 Bloom’s Taxonomy

This approach is named after Benjamin Bloom, the psychologist whose team produced the original scheme. The scheme has been recently revised by Lorin Anderson, a student of Bloom, in collaboration with his original co-author, David Krathwohl.

Bloom’s original scheme put thinking (and learning) into 6 hierarchical classes from ‘lower order’ to ‘higher order’, as follows:



This scheme or model has been hugely influential in nudging educational theory and practice away from the 19th century ‘Gradgrind’ model (as caricatured by Dickens in ‘*Hard Times*’: ‘Teach these boys and girls nothing but Facts. Facts alone are wanted in life’) towards a more human-centred process in which there is a place for values as well as facts.

Arguably, however, it suffered from precisely the problem it drew attention to – of something’s being learnt but not applied either directly or creatively. One even wonders how many teachers in their training (perhaps a particularly suitable word here) learned the 6 categories to the point of recall, and perhaps comprehension or even application (quoting it in an essay) without taking the next steps: Analysing it, applying aspects of it in new ways and situations and continually evaluating it as a model, so as to improve upon it.

Happily, however, Anderson and Krathwohl have come up with a revision of the model that is potentially more dynamic (using verbs rather than nouns, for example), while also being, perhaps, easier to translate into planning and practice in the classroom. Here is the basic model:



The most significant alteration is the reversing of the last two categories, placing a greater emphasis on evaluation as a means to the end of more creative application of knowledge and understanding. In the original model it was as if the ultimate goal was mere judgement – evaluation – rather than better action as a result of better judgement. In another context one might say that the goal now is not merely reflection *on* action, but reflection *in* action.

This emphasis on evaluating and creating is particularly relevant to *Open Futures*, for two reasons: Firstly and globally, because, by its very name and intent, the project is focused upon helping children to think about their lives and values, and to play an active and creative part in preparing themselves for their futures.

Secondly, the pedagogy of *Open Futures* is, essentially, based on the belief that each of us actively creates our own understanding of the world using constructs or concepts (what could be termed a constructivist approach). These are partly given to us through culture (not least through language), but are partly what we make of the culture and language around us. The making, of course, can be more, or less, active and self-determined, and, in that sense, more, or less, creative. In the final analysis, however, *Open Futures* believes and promotes that no one else can do your thinking – or your learning – for you.

Finally, for this thinking and learning to be most creative, a key factor is the extent to which the individual practices reflection – thinking critically and creatively about thinking and learning themselves. This is what was meant in the introduction by creative reflection.

How does this model work in (creative) practice? The brief answer to this is that the most creative application would be via a simple and steady push in the classroom towards higher-order thinking (HOT). In essence, this would involve the teacher’s pushing for depth (through critical questioning and prompting) and for breadth (through inviting connections with life and between ideas).

According to Steve Hastings, in a *TES* article on 4/7/03, a review of 37 projects in 1988 suggested that increasing the proportion of higher-order questions to 50% brought significant improvement in student attitude and performance. Given the figures quoted in the introduction, of 4 – 8% higher order questioning found in classrooms, most teachers probably need to push for more depth and breadth in their interactions (let us call them dialogues) with learners. Here, on the right, is a short exercise to help you analyse, evaluate and create HOT questions of your own.

There are many internet resources that illustrate how the Bloom/Anderson model can be used to promote good learning within subjects and across the curriculum, but one of the best is: www.kurwongbss.eq.edu.au/thinking/Bloom which contains an excellent powerpoint presentation among other things.²

² Taxonomy of Educational Objectives: The Classification of Educational Goals; pp. 201–207; B. S. Bloom (Ed.) Susan Fauer Company, Inc. 1956. Anderson’s revision was published as: A Taxonomy for Learning, Teaching, and Assessing – A Revision of Bloom’s Taxonomy of Educational Objectives; Lorin W. Anderson, David R. Krathwohl, Peter W. Airasian, Kathleen A. Cruikshank, Richard E. Mayer, Paul R. Pintrich, James Rath and Merlin C. Wittrock (Eds.) Addison Wesley Longman, Inc. 2001.

Activity 9

Applying HOT to HOQs

Rank the following from the question that offers the lowest challenge to thinking up to the one that offers the highest challenge. Then assign one of Anderson’s categories to each question.

1. What was the best thing about what you have just done?
2. What does X make you think of?
3. What other ways might there be of doing this?
4. What did Y just call it?
5. What problems do you see in that?
6. What is Z’s main point?
7. What does that mean for our plans?
8. What order did we do it in?
9. What do you think of that, then?

Do you think that the Bloom/Anderson classification is a clearcut hierarchy (from LOT to HOT), or that it is just a helpful guideline to raising the level of teacher (and learner) questioning?

Finally, create a new example in each of Anderson’s six categories, and imagine in what context you might use each of your examples in the classroom.



Activity 10

Plutarch's Puzzler

How to nurture the will to be a life(long) learner

“The mind is not a vessel to be filled, but a fire to be ignited.”

– Plutarch

The source of this quotation is interesting. It is taken from a lecture, ‘On Listening to Lectures’! More interesting, was

that Plutarch was not suggesting that teachers could effect learning through inspirational performances. His point, rather, was that it is the job of teachers to inspire students to ‘light their own fires’ – in other words, to bring their own wills and skills to the learning process. Plutarch’s puzzle, or at least challenge, to teachers (including himself!) is how to nurture such autonomy – such a will to be a lifelong learner.

If you had to identify the most important thing that you do to this end, what would it be?

2 KWL

A second strategy, originally designed for better reading-for-learning, but now more widely used for learning via any medium is KWL.

One of the perennial attractions of this strategy is its simplicity:

- **K** stands for ‘what you (the learners) already Know’
- **W** stands for ‘what you Want to know’
- **L** stands for ‘what you have Learnt’

The strategy embeds three important principles of EBL: The first (represented by **K**) being that further knowledge (and understanding) is built upon existing knowledge. This is obvious enough at the level of language-learning; most, if not all, new words are learnt in terms of words that have already been understood. However, new facts are best learned and understood if they can be readily connected with other ‘facts’ that the learner has already grasped.

Though explored later, it is also worth noting that there is another way of looking at this, which is to think of the increase in knowledge and understanding as being an expansion of concepts, which are the basic means through which we understand and operate in the world. This is the idea of ‘concept-based learning’.

The second principle, represented by **W**, is that learning is more likely to take place when it is invited by the learner rather than imposed by the teacher.

The third principle, represented by the **L**, is that of reviewing, or better still reflecting, upon one’s learning. This has the effect not only of consolidating learning that might otherwise be very short-term, but also of opening the mind to further learning and connections to be made. In effect, it points to a fourth letter: **S** – what do you still want to learn (and understand)? Not only individual lessons, but whole topic learning can be planned and developed using this strategy, as will be encouraged further in the section to come (5) on learning through topics/themes.



3 Problem-based Learning

There is one other EBL strategy that *Open Futures* particularly recommends, which may be more precisely labelled Problem-based Learning (PBL). This is an approach that lies at the heart of some of the most successful ‘thinking skills’ interventions of the last 20 years, such as CASE (Cognitive Acceleration through Science Education), Thinking Through Geography (and various parallel interventions summed up in the approach known as Thinking for Learning), not to mention its common use in practice-based professions such as medicine, especially nursing.

The essence of the approach is to set up some sort of cognitive challenge (= problem or mystery) as a stimulus to new learning. The power of the approach derives, in part, from the fact that throughout our lives humans are challenged by problems, some of which we successfully meet through applying prior learning, but most of which require us to learn anew. Whether a particular problem is unexpected and unwelcome, or willingly taken on (eg. Sudoku, or Lego, or planning a holiday) the human mind is predisposed to absorb whatever learning might help in its solution.

In meeting the challenge of problems, the human mind applies and refines whatever skills it can. Certainly, if the learners grasp the challenge, they are more likely to develop skills and understanding – deep learning – in the field presented to them, than if they were simply presented with facts and theories to remember.

What is obvious from this, and was also at the heart of the thinking skills interventions mentioned above, is the importance of enquiry and discussion in the progress towards solutions. More recently, the same theme has been taken up by Robin Alexander (who led the Alexander Report team) in his promotion of concept of Dialogic Teaching.

A similar refinement might be made in regard to the practice of PBL. It remains the norm in PBL for the teachers to pose the problems for the learners to solve. What *Open Futures* encourages, especially in the context of *growit* and *fillmit*, is for children to grow in terms of their alertness to the existence of problems themselves. This is where *askit* comes in, as as an enveloping *Open Futures* strand it routinely invites children to identify challenges of a conceptual nature and to generate the questions and enquiry themselves.

To sum this up, let us recall the belief mentioned at the start of section 2, on the practice of EBL:

“ Learning happens naturally by discovery and problem-solving, which requires pupils to hypothesise, ask questions, discuss lines of enquiry and find solutions ”

Activity 11

Practising Word Problematising or Noticing Similarities and Differences

CASE and TfL of course are well planned interventions with problems or mysteries specially chosen to challenge learners of different ages.

It is not so easy to identify suitable problems or puzzles for any part of the curriculum. Nevertheless, finding – or at least pointing out – problems for children to think about should become part of a teacher’s repertoire or habit.

In *askit* such a habit is called ‘problematising’, and can most easily be done in regard to the meanings of words.

A particularly useful technique is called ‘colliding’ concepts.

The idea is take two concepts that might be similar or different and to ask, respectively, what makes them different or similar.

So, for example:

- **what makes ‘problems’ different from ‘mysteries’?**

or

- **what makes good learning similar to good teaching?**



Exemplars of EBL approaches

There are a number of different but equally rewarding examples of putting EBL into practice. At the end of this chapter is a case-study of a school that has implemented P4C, which highlights all the benefits of the *askit* approach.

1 The Mantle of the Expert

www.mantleoftheexpert.com

One of the leading practitioners of Mantle of the Expert – Tim Taylor – provides an excellent summary of what it entails:

Mantle of the expert is an approach to teaching and learning that was originally developed by Dorothy Heathcote in the early 1980s. Working with her students at Newcastle University, Heathcote had been exploring different methods of supporting and training teachers to use drama as a medium for learning. She had noticed that, although teachers often used drama to create exciting moments for children to experience, they found it very difficult to use it to construct more meaningful and engaging contexts – contexts in which children could explore the curriculum in a wider sense.

Later, when Heathcote began to identify and develop further the different elements of this way of working, she decided to call it ‘*mantle of the expert*’, ‘*because I couldn’t find a better name*’⁴ – and began to use it first with her students and then with teachers in school.

The name, ‘mantle of the expert’, was a problem from the beginning and remains one today. Heathcote herself has called it ‘crazy’ and ‘fanciful’⁵, and it has put people off even before they have found out what it is. Nevertheless, however ‘uncatchy’ it is, mantle of the expert really is the best name for it.

In the mantle of the expert approach the learners are positioned within the developing fiction as the ones who know, and, more importantly, the ones who carry responsibility⁶. This is in contrast to the traditional way that classrooms operate, with the teacher as the expert. In a faithful application of mantle of the

Activity 12

A Step Towards being a MoE expert

As with all pedagogies that have substance and sustainability, one cannot become an MoE expert overnight. However, the whole point of putting on the ‘mantle’ of an expert is that the learner – ‘It could be you!’ – is prepared to take a risk and imagine having to be in a certain role and to make certain decisions.

Imagine, then, that you were Dorothy Heathcote working with the young boy-kings. Discuss with a partner or two what sort of tasks and consequent decisions you might have encouraged the boys to take on in their role. In doing so, try to be explicit about the areas of learning that they might be motivated to explore in order to fulfil their own imaginary tasks and make their own decisions.

She felt that drama was being interpreted in a very narrow way, as a series of encounters within a narrative that created tension, but remained restricted within the drama session itself. Frustrated by this, Heathcote wanted to create a way of working that contained all the elements of her own method and, at the same time, supported teachers in ways they could realistically use within the limits of a normal classroom.

In a recent interview³, Heathcote remembers she had been working with a group of young schoolchildren at this time, creating scenes for a nativity play. In particular, she recalls working with three boys who were to be the kings. The first thing they decided they needed to do was to make their wills, “*because you can’t leave a kingdom [without one], you might not come back.*” Throughout the week, working both alongside the boys as a collaborator in developing the story, and for them, as their servant, within the story, she invented a series of tasks that made the journey ‘happen’ for the boys and created ‘productive tension’.

expert everyone in the community of learning is positioned as being resourceful. The adult’s role, is to mediate the approach for the learners, to make it a meaningful and purposeful experience and to create authentic curriculum learning opportunities.

A teacher using the mantle of the expert approach creates within her classroom an imaginary context, where a team of experts are commissioned to fulfil a particular assignment for a client or client(s). The tasks involved in completing the assignment (and other associated activities) create authentic and purposeful reasons for exploring the curriculum (in its widest sense).

It is important to stress that this process is not done to the learners, but with them, in collaboration. The context and, its diverse elements, are built together within the community, through a range of the different forms of representation, including dialogue, the making of artefacts, and the use of dramatic action.

Activity 13

Another MoE Step

A ‘real’ example, and others imagined

For example, a team of transporters – with a successful history of removing, transporting and returning objects of great value and historical importance – are commissioned by the British Museum to move a tomb of priceless historical artefacts from a site in Egypt to an exhibition in London. (The full planning for this context, created by Luke Abbott, can be found at: <http://www.mantleoftheexpert.com/planning/the-egyptian-tomb/>)

Now, again with a partner or two, think of recent lessons that you have taken that might have lent themselves to an MoE approach. (History lessons might come most readily to mind, but the situation does not have to be in the past. A Science lesson might evoke speculative roles in the future, or a Geography or PSE or PE lesson might be turned towards a situation in the present.) Anyway, proceed to discuss possible tasks and decisions that might engage and enlighten your learners.

In planning, the teacher selects various prescribed elements – the area of study (Ancient Egypt), the expert team (transporters), the commission (moving artefacts from Egypt to London), and the client (the British Museum) – but as much as possible they should aim to keep everything else open to negotiation. In this sense, the curriculum for a teacher using mantle of the expert is both prescribed and contingent⁷. Some aspects are set and must be included, while others emerge from contributions and from chance.

A similar pattern is followed by *askit*. There are prescribed elements (the text and, often more by association, the theme) that give form and structure to the session, but there is also an explicit invitation to the class to make contributions, to offer their thoughts and to express their opinions.

Another common feature of both mantle of the expert and *askit* is a pedagogical emphasis more on generating questions than on supplying answers.

Both approaches, in contrast to the current establishment’s obsession with children’s acquiring facts and a narrow set of skills, view the primary aims of education as the development of open minds and the application of reason to unfamiliar circumstances.

Mantle of the expert invites learners to apply their imagination and reason to a series of layered, interrelated, fictional challenges (or enquiries). For example, in the Transporters context mentioned earlier, it is easy to imagine a whole sequence of tasks that will require the learners to solve problems, deal with people with alternative points of view and to act with professional responsibility. More than this, there are also deeper, more philosophical inquiries that need to be faced by the team:

- “Is it right to disturb the resting place of the dead?”
- “How can we respect the past whilst helping people to understand it?”
- “What can the rituals surrounding death tell us about the culture of Ancient Egypt?”

In this way enquiry might be said to inform everything done by the learners, big and small. In a sense it is part of its DNA.

This is also true of the other dimension of mantle of the expert, drama for learning. While it is a common mistake to think of mantle of the expert as a simple drama convention, or as a sequence of ongoing drama episodes, drama is nevertheless fundamental to the successful application of the approach. It creates the context or frame in which the imagination applies and develops meaningful reasons for enquiry.

Drama creates, what Heathcote calls, ‘now time’, where things are happening to learners in the moment, where they are forced to make choices and to test their reasoning as things happen. Drama creates situations where they have to come face to face with people, to explain themselves, to argue, justify their thinking and their actions.

It also protects them from real consequences; it allows them to make mistakes, to stop and think, to re-run, to test and to make changes. Mantle of the expert is an authentic laboratory approach: It creates safe environments where learners can make mistakes, without real world penalties, in situations they would never normally have the opportunity to explore.

2 The Futurelab ‘Enquiring Minds’ Project

www.enquiringminds.org.uk

Another recent flourishing of an EBL approach to the curriculum is ‘Enquiring Minds’, a project developed by Futurelab, based in Bristol, and funded by Microsoft. Although focused on secondary schools, the project draws on many good ideas and practices from the primary schools tradition, and from the more recent ‘Thinking Skills’ movement.

³ Podcast of this interview is on the mantle of the expert website: www.mantleoftheexpert.com/podcasts/an-interview-with-dorothy-heathcote

^{4–5} Ibid

⁶ Brian Edmiston, *What’s My Position? Role, Frame & Positioning* www.mantleoftheexpert.com/about-moe/articles

⁷ Luke Abbott & Brian Edmiston, *Curriculum and Pedagogy in the Classroom* (<http://www.mantleoftheexpert.com/about-moe/articles/>)

For example, it regards students' experience and ideas as a good starting point for learning: "Students need to be supported to be curious about, to challenge, and to enquire into their experiences, interests, assumptions and aspirations."

This is not, of course, to say that all learning has to start from students' experience, at least not in the crude way that some critics of the approach might suggest.

The point of the 'experiential' approach to learning is not to limit learning to the personal horizons of each student. The point is, rather, to help students make meaningful links between the experiences that they have had – of hardship or loss, for example, or excitement and love, or of simple encounters with the material world – and the experiences of others, as presented to them through accounts, stories and, of course, theories.

What also distinguishes the Enquiring Minds approach, however, and the EBL approach in general is its emphasis on questioning those accounts. Enquiring Minds specifically adopts a 'problem-posing' approach to teaching and learning, attributed to Paulo

Activity 14

Problem-posing in Curricular Subjects What if? and What else?

The 'what if ...?' approach to accounts and stories is well-enough known, and easy enough to practise. You might try, in small groups, coming up with a handful of questions such as: 'What if Guy Fawkes had succeeded?' in history, or 'What if Romeo had lived?' in literature.

Could you also come up with such questions in the more practical subjects of science and art?

And could you, finally, think of other forms of question that might model for children how else the traditional subjects might be problematised? (eg. 'How can we be sure of this?')

Freire, the famous Brazilian educator. This approach has been condensed into the slogan, "listening, dialogue, and action," with dialogue between learner and teacher at the heart of the process.

Listening carefully to each other is an essential part of dialogue, of course; but listening also has the sense, here, of being open to different accounts and perspectives on the world. Action is interpreted as the means by which individuals make sense of the world for themselves - which may be through oral articulation (not underestimating the importance of public reflection on one's learning), but may equally be through writing or some other creative activity.

Shot through the whole process, however, is an encouragement to ask questions about different people's accounts or stories, and about different theories about what happened or might happen. Such questions can and should be asked in every 'subject' – history, science, literature, art and more.

As 'Enquiring Minds' puts it, the dynamism of this quest for knowledge, and of knowledge itself, 'is not reflected in the school curriculum, where there is a tendency to present knowledge as 'tidy' and 'packaged'. This is reflected in the metaphor commonly used to describe teaching: that the curriculum is to be 'delivered'. This view of knowledge has little in common with the ways in which knowledge is produced and transformed in reality.'

To those involved in *Open Futures*, this way of looking at learning surely rings true, especially the view that regards 'good teaching to be taking place when students are ... actively involved in doing things rather than watching, when they are questioning common-sense and widely-held assumptions, including their own feelings and beliefs, and when they are involved in planning what they do and what outcomes they produce.'

Another direct parallel with *Open Futures* is the following statement: 'Enquiring Minds envisages that learning does not always need to occur inside the classroom. School grounds themselves are fertile sites for the collection of data or for making observations. Alternatively, since it attempts to engage with young people's out-of-school cultures, the locality itself can become a site for enquiry.' Finally, in regard to this project, it is worth noting their particular version of an/the 'Enquiry Cycle', as described in their own guide to enquiry (downloadable free from their website, which is on the next page):

The Enquiring Minds Enquiry Cycle

1 Initiating and eliciting

The first stage in the cycle is about eliciting the knowledge, interests, ideas and motivation of students. The teacher's role is to help students draw on their own lives and experiences to discover things that interest them, make them excited, curious and want to ask questions.

2 Defining and responding

The second stage is concerned with shaping, defining and focusing an idea or question or subject and making plans to research it further.

3 Doing and making

Stage three is the doing and making stage, where students research, design and construct in order to make a contribution in their chosen enquiry.

4 Communicating, presenting and evaluating

During this stage, students communicate, share and present their new knowledge and understanding with others. There are many ways in which this could be done, depending on the enquiry. It could be a website, a report, a video documentary, a radio programme and so on.

Activity 15

Connect your Learning

Compare and contrast the above Enquiry cycle with:

- the 'listening, dialogue, action' slogan
- The Accelerated Learning Cycle of Alistair Smith: *Connect the learning, Share the learning outcomes, Introduce new information, Activity, Review and Preview*
- The TASC wheel, developed by Belle Wallace. See www.tascwheel.com/belle-wallace. You might trace all of these back to the Enquiry Steps posited by John Dewey. See Appendix 1.

Another EBL approach used widely through the world is known as the PYP program. Because it originated, and is most practised, in international schools, it has not made much of an inroad into state primary schools in the UK, nor in Europe, Asia and Africa. Interestingly, however, the IBO (www.ibo.org/pyp) say that in the Americas region more than 50% of the new IB schools are state schools.

The program has been offered by the IB to students aged three to 12 since 1997, and 'continues to promote inquiry as the leading pedagogical approach,' focussing on 'the development of the whole child as an inquirer, both in the classroom and in the world outside.'

Activity 16

Mapping Open Futures and Subject Areas

But such holistic thinking and learning comes naturally in the *Open Futures* project, with its focus on practical skills and creative reflection.

As an exercise, try mapping the four strands to the 6 subject areas. This can be done 'broad brush' in the first instance, and then more particular activities or projects within the strands might be used to illustrate the map in detail.

This holistic approach is also represented in its six trans-disciplinary themes – 'about issues that have meaning for, and are important to, all of us':

- Who we are
- Where we are in place and time
- How we express ourselves
- How the world works
- How we organize ourselves
- Sharing the planet

The program aims to offer 'a balance between learning about or through the subject areas, and learning beyond them', and 'teachers are guided by these six transdisciplinary themes as they design units of inquiry that both transcend and articulate conventional subject boundaries'.

This aim chimes well with the re-organisation of many school curricula to focus on some central themes or 'big ideas' (see more on 'concept-led learning' in section 5), but of perhaps equal interest to readers will be the close match between the 'conventional' subject areas in the PYP framework and those articulated in the Rose report. Here they are, side by side:

PYP	Rose
Language	English, communication and languages
Social studies	Historical, geographical and social understanding
Mathematics	Understanding mathematics
Arts	Understanding the arts
Science	Scientific and technological understanding
Personal, social & physical education	Understanding physical development, health and well-being

The ever-growing challenge, of course, is indeed to help young people see how these subject areas complement each other, not only intellectually - bringing about better understanding of the world as a whole - but also practically, in the 'real' world. Few organised enterprises in the 21st century will reach proper fruition if they are not informed by knowledge drawn from across these subject areas, or, on the other hand, not guided by thinking that transcends the old divide between the 'arts' and the 'sciences'.

One primary school in Liverpool has in fact been developing its curriculum within a PYP framework, and the plans of the following pages give a taste of how the broad thematic approach has been woven into their pre-existing topic work.

A sample primary years program framework from Liverpool

Who we are	An exploration of the nature of the self; of our beliefs and values; of personal, physical, mental, social and spiritual health; of our families, friends, communities and cultures; of our rights and responsibilities; of what it means to be human.	<p>Unit Title: Who am I?</p> <p>Central Idea: <i>Everyday I can learn more about who I am and what I can do</i></p> <p>An enquiry into:</p> <ul style="list-style-type: none"> • What my physical characteristics are • What I can do • What my feelings, likes and dislikes are • How I am growing and changing <p>Subject focus: All subject areas</p>
Where we are in time and place	An exploration of our orientation in place and time; of our personal histories; of history and geography from local and global perspectives; of our homes and journeys; of the discoveries, explorations and migrations of humankind; of the contributions of individuals and civilisations.	<p>Unit Title: My School</p> <p>Central Idea: <i>Going to school is a challenge where we learn to work and play together</i></p> <p>An enquiry into:</p> <ul style="list-style-type: none"> • Where school is and what we do there • What things do we learn in school • How we work and play together <p>Subject focus: All subject areas</p>
How we express ourselves	An exploration of the ways in which we discover and express our nature, ideas, feelings, beliefs and values through language and the arts.	<p>Unit Title: Music Moves Me</p> <p>Central Idea: <i>Music allows us to discover and express our feelings through songs, movements and rhythm</i></p> <p>An enquiry into:</p> <ul style="list-style-type: none"> • Why music is important • Different kinds of music around the world • Ways of expressing ourselves with music <p>Subject focus: All subject areas</p>
How the world works	An exploration of the physical and material world; of natural and human-made phenomena; of the world of science and technology.	<p>Unit Title: Jump into Spring</p> <p>Central Idea: <i>Living things change in the season of Spring</i></p> <p>An enquiry into:</p> <ul style="list-style-type: none"> • The differences between living and non-living things • Plants and animals that change • Why do living things change <p>Subject focus: Science</p>
How we organise ourselves	An exploration of human systems and communities; of the world of work, its nature and its value; of employment and unemployment and their impact.	<p>Unit Title: People who Need People</p> <p>Central Idea: <i>There are people who help us</i></p> <p>An enquiry into:</p> <ul style="list-style-type: none"> • What jobs people do. • Who helps us. • Why we need help. <p>Subject focus: PSHE, Social studies</p>
How we share the planet	An exploration of our rights and responsibilities as we try to share finite resources with other people, with other living things; of communities and of the relationships within and between them.	<p>Unit Title: Grow Baby, Grow!</p> <p>Central Idea: <i>Every living thing has a life cycle</i></p> <p>An enquiry into:</p> <ul style="list-style-type: none"> • What the life cycles of various living things are. • How things grow – what they need and how they change. <p>Subject focus: Science, PSHE</p>

Who we are

Unit Title: Don't Kick Back – BREATHE!

Central Idea: *Human beings have different emotions*

An enquiry into:

- Recognising emotions in ourselves and others
- How our emotions affect others.
- How we communicate our emotions verbally and non-verbally.

Subject focus: PSHE, The Arts, Language

Where we are in time and place

Unit Title: Settlement Past and Present

Central Idea: *People settle in certain places for different reasons and these settlements can change.*

An enquiry into:

- Why people settle where they do
- How settlements change over time
- Different kinds of settlements

Subject focus: Social studies, Language, PSHE

How we express ourselves

Unit Title: Lights, Camera, Action!

Central Idea: *People make and watch films for many different reasons.*

An enquiry into:

- How plays and films are different
- Why we watch certain plays/films and not others
- Why different types of plays and films are made
- What censorship is

Subject focus: Language, Arts, ICT, D&T, PSHE

How the world works

Unit Title: Weather Watch

Central Idea: *The weather has an effect on our lives*

An enquiry into:

- Different types of weather
- How the weather affects human actions and life styles.

Subject focus: Social studies, Science

How we organise ourselves

Unit Title: Raw Material to Product

Central Idea: *People produce the products we use and these products go through changes from start to finish*

An enquiry into:

- The many different kinds of products around us
- The people responsible for the production stages and the jobs they do

Subject focus: D&T, PSHE, Language

How we share the planet

Unit Title: The World Belongs to All of Us

Central Idea: *In a world where wealth is not distributed equally, it is our responsibility to share resources for the benefit of all*

An enquiry into:

- One person can make a difference
- The global family
- Rich and poor (haves and have-nots)
- Our responsibilities to the world and those with whom we share it

Subject focus: Social studies, language

All the teachers at this school in Liverpool have been trained to Level 1 in P4C, as have the teachers at another state primary school in an area of Bolton with high deprivation indices, which is an accredited IB school. Both schools have recognised the

interconnectedness of a curriculum based on enquiry and the Socratic practice of P4C. Both the IB and P4C hand learning to the child, and are guided by their natural curiosity, while building on their existing knowledge and experience.

Activity 17

Comparing Curricula/Experiences and Challenging Practice

- Roughly, how much of the 'content' of the Foundation and Yr3/3 curricula above overlaps with your own school curricula? (You might use a highlighter pen to help you judge.)
- Do you think the IB themes strike a suitable balance between prescribing key areas of learning and, yet, enabling teachers to respond to children's 'natural curiosity'?

The IB 'Learner Profile'

The IB PYP places a Learner Profile at the centre of its practice. The Learner Profile is a set of attributes which all members of the IB community, children and adults alike, strive to fulfil to maximise their potential as learners. These attributes are displayed within all PYP classrooms as an ongoing reminder of the qualities of a successful learner, both academically and within the wider world. Students are thus encouraged to become:

- inquirers**—their natural curiosity has been nurtured and they actively enjoy learning
- thinkers**—they exercise initiative in applying thinking skills critically and creatively to solving complex problems
- communicators**—they receive and express ideas and information confidently in more than one language
- risk-takers**—they approach unfamiliar situations without anxiety and have the confidence to explore new ideas
- knowledgeable**—they have explored themes that have global significance and have acquired a critical mass of knowledge
- principled**—they have a sound grasp of the principles of moral reasoning and have acquired integrity, honesty and a sense of justice
- caring**—they show sensitivity towards the needs and feelings of others, and have a sense of personal commitment to helping others
- open-minded**—they respect the values of other individuals and cultures and seek to consider a range of points of view
- well-balanced**—they understand the importance of physical and mental balance and personal well-being
- reflective**—they give thoughtful consideration to their own learning by constructively analysing their personal strengths and weaknesses.

Enquiry in practice

A unit of enquiry within the PYP begins with the teacher, as learner, modelling the Learner Profile attributes by enquiring into an area of interest linked to the Central Idea. The teachers' questions are displayed within the classroom alongside the Central Idea. From this teacher-led investigation, the pupils consider the way in which they would like the enquiry to develop for them as individuals or as groups, and add their own questions to the Enquiry Wall. In this way, they plan and carry out their own research and consider what they need to achieve to make their research a success. Children then decide how they will present their learning to the rest of the class, with the caveat that they adopt a variety of methods of presentation throughout the year.

Of course, teachers may be reluctant to hand over the learning fully to the children, but, with practice, adopting the IB PYP enables children to research effectively, choosing their own lines of enquiry, and coming up with their own success criteria. It is up to educators to use their expertise to guide and facilitate the enquiry to the appropriate level. Teachers must have high expectations of children's skills and capabilities and ensure high levels of challenge for every child.

The aim in the Liverpool school is to teach at least 50% of the timetable through the PYP (this would include most of the foundation subjects as well as literacy). Currently they are managing about 25% of the timetable, but are still tending to teach literacy as a discrete subject. They are working towards incorporating literacy more completely, and, ultimately, more maths, science and PE – though they acknowledge that these present more of a challenge.

4 The RSA (Royal Society of Arts) 'Opening Minds' project

www.thersa.org/projects/education/opening-minds

This project was piloted from 2000, and has been taken on since by some 200 schools (as with the Enquiring Minds project, mostly secondary).

Here is how the RSA itself describes it:

"Opening Minds aims to help schools to provide young people with the real world skills or competencies they need to thrive in the real world. It is a broad framework through which schools can deliver the content of the national curriculum in a creative and flexible way so that young people leave school able to thrive in and to shape the real world"

Opening Minds was developed by the RSA at the turn of the millennium in response to a belief that the way young students were being educated was becoming increasingly detached from

their needs as citizens of the 21st century.

It is based on five sets of competencies, including Citizenship, Learning, Managing Information, Managing Situations and Relating to People.'

A competence is defined by Opening Minds as 'an ability to understand and to do'.

So, the list of Citizenship competences contains, for example:

- an understanding of ethics and values, how personal behaviour should be informed by these, and how to contribute to society

And the list of Learning competences suggests that students would have:

- understood how to learn, taking into account their preferred learning styles, and understood the need to, and how to, manage their own learning throughout life
- learned, systematically, to think
- explored and reached an understanding of their own creative talents, and how best to make use of them
- learned to enjoy and love learning for its own sake and as part of understanding themselves

In the third set of competences most relevant to EBL, Managing Information, the expectation is for students to have:

- developed a range of techniques for accessing, evaluating and differentiating information and have learned how to analyse, synthesise and apply them
- understood the importance of reflecting and applying critical judgement, and have learned how to do so

Through a Virtual Learning Experience (VLE), community expertise is used to complement formal learning in school. As a result of this, those questions generated during Philosophy sessions are now also brought into the community...

"All our little brains light up and we make one big, humongous brain together."

– Laura

As with the other models discussed before, the parallels and common purpose with *Open Futures* and *askit* is clear, not least the emphasis on developing the ability to understand ethics and values, and how to learn or think - especially to reflect and evaluate or apply critical judgement.

There are perhaps two important foci, however, in *Open Futures* that might seem to be lacking in the Opening Minds approach. One is the focus on everyday practical skills, and the other, central to this handbook, is the focus on the skill – and, even more basic, the will – to enquire.

5 'Communities for Learning' Armathwaite Community Primary School case study

www.armathwaite.cumbria.sch.uk

The children at Armathwaite Community Primary School have been experiencing the P4C approach to learning for the past 7 years. They now have a weekly philosophy session to cover aspects of the RE and Literacy curriculum, with links to Science, Citizenship and PSHE where relevant. However, the training of all staff to Level 1 in 2004 provided a catalyst to consolidate an enquiry based, child initiated, independent approach to learning across the whole school.

In 2008, the school embarked on a field trial for the Next Practice Project 'Communities for Learning' trial with the (DCSF) Innovation's Unit and the Training and Development Agency for Schools (TDA). The school has successfully developed an 'independent learning' curriculum co-designed by the school and the local community. Roles and skills have been developed to provide a responsive curriculum that extends beyond the school day. In the beginning...

As soon as children come to school in Reception they are introduced to 'Philosophy Frog'. From this first week in school children are given the message that 'being puzzled, asking questions, learning from others and changing your mind' is something that is valued. Philosophy Frog is a hand puppet who takes his persona from the Max Vehijus's fantastic series of books such as "Frog is Frog", "Frog and the Stranger", "Frog is Sad". There are some 12 books in the series and the books provide a context for the Reception children's philosophy particularly during the first term, but also throughout the rest of Reception and into Year 1.

Philosophy Frog encourages the children to be puzzled, surprised and interested by the stories - and to work towards child-generated questions. The children respond to the questions and are encouraged to reflect on whether listening to the responses of their peers makes them change their mind or learn anything new.

Embedded in each book is an explicit concept, by the nature of the individual titles of each book, such as friend, sad, happy, stranger, or treasure. There are also other implicit themes within the books such as death and identity. This means that children are introduced to generating questions that are concept-led from a very early age. Examples of questions raised by Reception children during their first term in school using the Frog series include:

- “Can you be happy and sad at the same time?”
- “Why was frog sad at the beginning and happy at the end?”
- “Can you have more than one best friend?”
- “Are all strangers bad?”
- “Is treasure always made of gold?”
- “Why do we do different things?”
- “Are teddy bears real?”
- “What happens to birds when they die?”

Questions are raised, recorded and responded to in the form of dialogues between teachers and pupils. In the first instance, these are very short and the focus is very much on helping those children who generated the question to answer their question or not. The outcome being that by the end of the first term children are very much aware that not all questions necessarily have an answer.

Philosophy Frog continues to come into the class after the autumn term in Reception, but branches out from his ‘namesake’ stories with other stimuli such as photos, objects, music, activities or other stories that link more specifically to the RE curriculum.

Activity 18

Researching/Reflecting on ‘Research/Reflect’ approach to questioning

- Is the difference between these sorts of questions clearcut?
- How does it compare with the difference between closed and open questions?
- Can you think of examples of research questions that need reflection?
- Can you think of examples of reflection questions that need research?

Helping children to generate their own questions...

The school has found that although many children naturally ask questions straight away in Reception, some children need more help. Lots of time is given to helping children to refine their ability to ask questions during philosophy sessions. Reception children will often be asked to draw what they find puzzling, interesting or surprising from a stimulus, with their statement or questions recorded on a post-it note. During Reception and Year 1 generating questions is mostly a verbal or pictorial experience for children, but as soon as it seems that they are interested and confident in writing their own questions, they are encouraged to do so. As children move into Year 2 and 3 they are encouraged to write paired, individual, group questions.

In Year 2 and 3 teachers are more explicit in encouraging children to select more reflective questions for philosophical enquiry. Opportunities are provided for children to ‘play’ with questions, so that they understand what a reflective question is - for example, by categorising between ‘research’ (‘find out’) and ‘reflective’ (‘think it out’) questions, or rewording questions to make a research question reflective or vice versa.

However, ‘research’ questions are still encouraged and valued, not least because they are a sign that the child is expressing a genuine desire to want to learn about something. Such questions can provide an excellent stimulus for independent or future curriculum work.

Many of the research questions that are generated during Philosophy sessions are put onto the Virtual Learning Environment. This is a closed password-protected forum, but it also includes past pupils, parents and other invited members of the community. The VLE is managed by a Community Development Worker who comes into the school once a week, helping pupils to post or respond to questions if they are not able to do so on their own. Responses on the VLE are often discussed during Philosophy sessions too.

Interestingly, many questions are also generated as a result of a Philosophy session, with children posting a question later in the week at home. The responses by parents has been very enthusiastic, particularly to ‘research’ questions where suggested websites, photographs and information have been given. The parents have also been very open in their responses to more reflective questions posted, especially in terms of religious beliefs which has given significant depth to the RE curriculum.

Here are some examples of research questions (some with a reflective dimension) that were put on the VLE in response to P4C sessions in November, 2009.

“The ability to think and act with maturity beyond their chronological age is also reflected in the work of primary pupils at Armathwaite. They have surprised their teachers with their ability to maximise use of a community VLE operated by the school with support from the Local Authority and Community Advisers.

The VLE not only facilitates independent research, it expands the community resource available to young children in a small, isolated village school, drawing in adults in the local community as it does so. This lowering of the barriers between school and community is more than a virtual exercise.”

– *The Next Practice in Education Programme: Learning, insights and policy recommendations. Innovation Unit 2008*

- What time was Jesus born?
- When is Santa’s birthday?
- When is God’s birthday?
- Who is Jesus’s father?

These were responded to on the VLE with a wealth of historical and religious information by parents, pupils and the community. All questions were taken seriously, and followed up in more depth by whole-class and independent research projects, further internet research and whole-class philosophical enquiry on:

- Why do people celebrate Christmas? (and, why do people not celebrate Christmas?)
- What do people from other religions/non-religions do on Christmas Day?
- Do you have to be a Christian to celebrate Christmas?
- Do people in different countries celebrate Christmas?

How does enquiry fit with the school’s Learning Curriculum?

Armathwaite has two interdependent parts to its curriculum: the Teacher-Directed Curriculum and Child-Initiated Independent Learning. Time is planned each week for both. Governors have agreed a staffing policy whereby the school employs specialist teachers to teach subject areas across the school. The model is very different to the secondary school model of specialist teaching, however, because staff plan and evaluate learning together. This provides the benefit of teachers with a high level of expertise collaborating within the context of a joined up curriculum.

The school has put a lot of time into curriculum design, starting with the National Curriculum, but considering the skills necessary for successful child-initiated independent and lifelong learning. The skills are broken down into three main areas – cognition, personal skills and interpersonal skills. The staff have considered these three main skill areas and decided upon components that make up each area of skill. For example, with cognition they focus on creativity, enquiry, reasoning, problem solving, information processing, reflective thinking and evaluation.

The specific skills of enquiry which teachers plan for children to acquire are: to test theories and ideas, be open-minded and take risks, experiment with new ideas, explore and investigate, show curiosity, generate questions and explore them, reflect and evaluate. These skills are particularly relevant within P4C sessions, but they are equally relevant across all areas of the curriculum.

By establishing a learning development worker and a virtual private network the school has now taken self-initiated learning into the community, enabling pupils to learn from the community, and the community to learn from the school. The VLE has over 100 members and plays an important role in developing learning through both the teacher directed and child initiated curriculum.

Topic-based Learning and Concept-based Learning

For too long schools have been hampered by the restrictive nature of pigeon-holing learning by subjects. Happily there is now a growing focus on the undeniable benefits of using concepts to enrich children's learning.

The PYP and Armathwaite curricula point us to another way of thinking about, and implementing, enquiry-based learning: To connect it directly with topics or themes or, indeed, concepts.

Is there a significant difference between topics and themes? And then again, how do either of these differ from 'concepts' or from 'big ideas' (that shape the world)?

These questions might partly be answered by researching what schools themselves actually list under these headings. However, in the absence of any thorough research of this sort, a plausible speculation might be that all four are used as headings for much the same thing.

Any difference between them, by this account, would be far less significant than the difference of pedagogy between teaching 'subjects' as the mere accumulation of 'facts' (what the Brazilian educator, Paulo Freire, called the 'banking model' of education – see Appendix 2) and what is nowadays called 'concept-based learning' (which recognises the importance of concepts in learning, not least that 'facts' can only be communicated through the use of concepts).

Happily, there is increasing emphasis on identifying the important concepts (rather than 'subjects') through which we all gain better understanding of the world, and then on developing better ways of enabling children to grasp those concepts.

The general argument in this handbook is that the best of these ways is to give children the will and the skill to question the concepts they have not quite grasped. There is a particular

technique in the box below demonstrating how to do this, but there are more pointers in the *askit Level 1 handbook*, including three pages on Starting Strategies, and one page on each of Ideas for Topic work and Ideas for Project work.

1 The importance of concepts in learning

The focus on concepts not only helps to make sense of 'philosophical enquiry', but also makes sense of the claim that such enquiry is fundamental to all other sorts of enquiry – scientific, historical, and so on.

Each of these other types of enquiry do, of course, have their own distinct purpose – science seeks knowledge and understanding of the material world, history of the human world. All of them, however, rely, to a great extent, on the development of concepts by which knowledge is organised and understanding extended. Without the concept of 'matter', for example, scientists would struggle to represent the material world and to examine and explain the complex relationships within it. Similarly, the concept of 'leaders' is used to explain many events in history, and the concept of 'harmony' is used to explain many phenomena in the world of art.

Yet hardly any of these concepts is altogether clear cut. Indeed, many of them are the subject of continuous debate as to their definition and application. Arguably they become more problematic, or at least more complex, the more that we 'know' about them.



Activity 19

Identifying and Developing Key Words/Concepts

The practice of keywording is a simple and effective one in any learning situation, whether conducted orally or in writing. It is a practice of highlighting, mentally or on paper, the key words or concepts in any exposition.

For instance, try identifying 20 key words from this page, and then comparing your list with a partner's. Notice how the process is one of actively questioning the text for meaning, and then a questioning of each other's meaning-making.

Could you, finally, agree on the six most significant words/concepts from the page?

There is another reason why concepts are central to human understanding, and yet, more often than not, are contestable. This is that every human being 'learns' every concept somewhat differently from every other human being. This is true even of 'concrete' concepts, such as 'chair' or 'food', the first experienced instances of which will clearly vary from child to child, home to home.

Gradually, of course, children build their concepts so as to include other instances, and perhaps at some point they form a fairly clear general concept of 'chair' or 'food', which more or less coincides with most other people's concept of the same. However, it is rash to suppose that, even then, everyone's concept is identical. For some, a bean bag would count as a chair, and for others, not. Similarly, for some, sheep's eyes count as food, and for others, not.

Bean bags and sheep's eyes, of course, are 'test cases', but it is not just at the borders that people's concepts may vary. For some, the paradigm example of a chair might be wooden, whilst for others it might be plastic; and for some, the paradigm example of food might be fruit plucked from the trees, whilst for others it might be chickens plucked (and frozen) from a supermarket.

In short, humans construct – or 'grow' might be a better metaphor – their concepts as they proceed through life, and it is clear that some people have more flexible conceptual structures than others. Some can accommodate new meanings and applications more readily than others.

This leads, finally, to a very important point about learning in general, which is that learning is not simply a matter of accumulating more and more facts or information. Every new 'fact' has to be understood and accommodated within an existing

conceptual framework – a framework which is (and always will be) only a partial representation of the world as a whole.

The task of a teacher, in fact, is not merely to give new information in the expectation that every learner will be able, on testing, to recall that information, but rather to help each learner fit that new information meaningfully into their existing learning.

The prime emphasis, then, should be on a collaborative effort to



'make meaning', and no doubt it is for this reason that the QCA has encouraged subject associations to talk of, and plan for, 'concept-led learning'. The Geographical Association, for example, identified 7 'Key Concepts' around which to build its Key Stage 3 curriculum, and introduces them as follows:

"Think of each 'key concept' as a bundle of ideas, our grasp of which can grow and develop. They are 'key' because we think growing understanding of the ideas is useful and significant in serving the grand geographical aim of making sense of the world."

– www.geographyteachingtoday.org.uk

How exactly are teachers to help children make better sense of whatever they have to learn, in any subject in the curriculum?

Whatever 'programme' or 'scheme' is the latest in fashion, the simple truth remains that the pursuit of sense or meaning is a philosophical pursuit. The more teachers approach their task philosophically, the more likely their pupils are to widen and deepen their understanding.

Of course, though this truth may be simple, the actual working out of the concept of philosophical teaching in practice remains challenging. That is where *askit* comes in, providing a framework within which schools and children can alter their approach.

Activity 20

Finding your way (Key Concepts) in Geography

Here are the 7 key concepts chosen for the KS3 curriculum:

- Place
- Space
- Scale
- Interdependence
- Environmental interaction
- Changing Physical and Human Processes
- Cultural Diversity

Do you agree with the choice?

Can you agree on 3 more to make up a top ten?

Topic-based Learning and Concept-based Learning

Continued

Activity 21

Re-founding/directing the Curriculum on/towards 'The Good Life'

- Where the targets/themes just mentioned are not explicitly connected with living a healthy and happy life, discuss the extent to which they are implicitly connected.
- Discuss the extent to which others, or all, of the formal subjects in the curriculum could be justified as conducive to such a life.
- Are there any other aspects of the prescribed or recommended curriculum that could be so justified? (e.g. sustainable / eco-friendly school targets?)
- Would it be possible, in fact, to reconstruct a school curriculum from the foundation or central concept of 'The Good Life'? (Note: One could do worse than start from the model of Enquiry/concept-based learning recommended by the Geographical Society – see Activity 20.)

Philosophical teaching practises and encourages continual questioning by the learner of the meaning of what is taught – whether at the elementary level of 'concrete' concepts (e.g. what is meant by a 'safety catch'? or a 'kitchen knife'? or a 'piece of software?'), or at the more complex level of 'process' concepts (e.g. what is meant by 'composting'? or 'preparing' vegetables? or 'editing' a film?), or at the level of 'abstract' concepts (e.g. what is meant by 'energy'? or 'nutrition'? or 'evaluation'?)

To elaborate, the quest for meaning includes the questioning of reasons (explaining how or why) and the questioning of values (explaining what makes things important). For 'learning' without an appreciation of reasons and values is not only shallow: it is unsustainable.



2 Essential Topics / Concepts

Arguably, if there were one topic or concept that should be at the heart of a civilised curriculum, it should be that which most concerned the great Greek philosophers: in modern English, 'the good life'. True, that phrase can be taken as meaning something like 'living it up', but the original meaning – and the one more often taken – is more like 'a healthy, happy life'.

Of course, the ideas of 'health' and 'happiness' are complex and subtle ones, and lend themselves to different perspectives. So, it is not a straightforward matter to translate them into a working curriculum for any age, let alone 'key stage'. Yet, apart from the (very respectable) argument that learning can be a good thing in itself, it would seem very difficult to make a case for learning anything at school that was not deemed conducive, in some way, to a healthy and happy life for the learner. Indeed, many of the initiatives in English education of recent years are more or less geared to such ends.

Consider the key targets of **Every Child Matters**, for example: Be healthy; Stay safe; Enjoy and achieve; Make a positive contribution; Achieve economic well-being.

The same point can be made in regard to the targets of the Healthy Schools Campaign, or to some of the main themes of **SEAL (Social and Emotional Aspects of Learning)**: New Beginnings; Getting on and Falling out; Going for Goals; Good to be me; Relationships; Changes.

It should be even more obvious how the *Open Futures* strands of *growit* and *cookit* lend themselves to the pursuit of the 'good life'. Perhaps, however, this conceptual link should not be taken for granted. Teachers could be ready to take every opportunity to strengthen the link, whether in Science/Biology or SEAL classes, or in *askit* enquiries or follow up sessions. What better philosophical question to explore than 'What is involved in leading a good life?' or 'What lifestyles are sustainable, and what are not? If children do not ask such questions directly, teachers should feel free to link curriculum subjects/topics, such as RE/neighbourliness, or Geography/environment to such questions.

Activity 22

Valuing Victorians Via their Inventions

History is full of topics that can be connected with the central theme of the good life. (Remember Thucydides: 'History is philosophy learned from examples.')

A starter for the classic topic, Victorians, could be to encourage children to speculate as to which good things in their own lives today could be traced back to Victorian inventions or institutions.

Could you yourself add to the following list:

- water from taps
- trains
- charities
- (state) schools



Tools for Thinking

(First and Last) Encouragements to Enquiry

As has been suggested more than once in this handbook, it is as important for teachers to nurture curiosity - the will to enquire - as it is to help them practise the skill(s) of enquiry. The latter, in any case, amount to asking good questions at the right time(s).

It is well understood, moreover, that one of the best ways of sparking human curiosity in general (and not only that of children) is to engage them in dialogue, or good conversation. One remark by one person can so often prompt another by another, and gradually a desire builds up not only to be part of the conversation, but also to find out more about what other people think and know.

As mentioned in Section 3, this approach to learning (and teaching) has been called 'dialogic' by Professor Robin Alexander, who had condensed its five main principles as follows:

- 1 Collective:** teachers and children address learning tasks together, whether as a group or as a class, rather than in isolation;
- 2 Reciprocal:** teachers and children listen to each other, share idea and consider alternative viewpoints;
- 3 Supportive:** children articulate their ideas freely, without fear of embarrassment over 'wrong' answers; and they help each other to reach common understandings;
- 4 Cumulative:** teachers and children build on their own and each others' ideas and chain them into coherent lines of thinking and enquiry;
- 5 Purposeful:** teachers plan and facilitate dialogic teaching with particular educational goals in view.

These principles seem so sound as to be common sense and, surely, common practice. However, Professor Alexander is probably right in arguing that they are in fact counter to the common culture of teachers who teach 'to the test' rather than to the best possible learning.

It is quite a challenge for teachers, though, to plan their moves towards such a 'dialogic' culture across the curriculum, not least because, from quite early in their schooling, children's habits are the opposite. They are used to: their teachers setting the learning agenda; to listening to the teacher more than to their peers; to expect there to be a 'right' answer, and keeping silent if they do not know it; and to treat knowledge as bite-size answers to spoon-feeding questions, rather than exploration and enquiry.

Open Futures believes firmly that a good first step towards such a culture is to build *askit* into the curriculum at least once a week, and ideally to earmark another *askit* session to plan and practise (or even to 'play') particular thinking skills.

There are various ideas in the *askit Level 1 handbook* for skills and strategies of thinking that can be planned and practised in this way, and there will be plenty more ideas on, or linked to, the *Open Futures* website. In addition, here is a collection of some of the best thinking 'tools' drawn from the wide range in general practice nowadays. Most of them exemplify the notion that 'good talking results in good thinking', as well as the more usual notion that 'good thinking results in good talking (or writing)'. In other words, they can be regarded as devices for prompting dialogue and enquiry, as well as developing them.



A-Zs an idea from Enquiring Minds, echoing the A-Z list of 'big ideas' in the Level 1 handbook

Students create a pictorial or written alphabet in which each letter is illustrated by something relevant to the topic - it could be the local area, the school, the year group, work, play, 'growing up' etc. It is important that each word or image represents something about the theme. Students may need some support initially to think beyond literal representations of the letters.

This activity involves discussion with others and can lead to interesting discussion and raise questions for further enquiry. It can reveal students' values and perceptions about the place or topic for which they are creating the A-Z. N.B. This activity may be enhanced using digital cameras (if available).

Beat the teacher a second, and final, example from Enquiring Minds, to whom our thanks

The teacher invites pupils to ask questions about a topic of their choosing. If the teacher is unable to answer the question it is recorded. In this way a 'question bank' is established. This activity can allow teachers to demonstrate that we don't have the answers for everything, and helps build a classroom culture where questioning and enquiry are commonplace. The questions generated can provide the basis for further study.

Continuum (or concept) line a favourite amongst askit users

In its simplest form, this would begin with a predetermined list of words or examples that 'fit' somewhere between two extremes, such as 'saintly' and 'evil', or 'beautiful' and 'ugly'. (Many concepts, in fact, have natural 'opposites', and other related concepts that fit between them.) The children are invited to stand or show where they think particular examples, such as 'kind' or 'attractive', should be placed on the continuum. Again, others are encouraged to seek justification and criteria for deciding, and to enquire as to whether other words or examples fulfil the criteria.

Explain and enquire

This works especially well as part of review of a topic or lesson, and is based on research evidence that 'explaining to others' is a far more effective mode of learning than, for example, listening and writing. It also marries well with the KWLS approach, reinforcing the S ('what do you still want to know?') stage. The idea is simply that, instead of plenary review, with the teacher asking questions to check learning (often with only a few giving the answers), children review in pairs, trying to tell each other

(or, better still, to note in writing) the main things they can remember from the lesson. They could then be required to come up with a question about something they have forgotten or don't understand fully, or a new enquiry about something connected with the topic. These questions/enquiries could either be dealt with there and then, or 'posted' for further attention in the next appropriate lesson. They might even be classified and posted on a question quadrant. (For more on this, see the *askit Level 1 handbook*.)

Ranking: 1/2/3, and 3 by 3 a variation on the well known Diamond 9

From an early age children can be encouraged to rank preferences (or favourites) in numerical order, 1 - 3, from 'most' to 'least'. Children can be asked to make such judgements - and justify them - in pairs or in small or whole groups. It is the resulting discussion that provides the platform for enquiry into the criteria for judgement.

'3 x 3' is just a more complex task of ranking. Present 9 items of a similar nature but variable importance and the task is to divide them into 3 groups: the most X (for example, important, or beautiful); the least X; and the remaining 3 in the middle. 'Diamond 9' is ranking the items within each group again from 1 - 3.

Example of a Diamond 9 - Arrange the countries by size/ total area with the largest at the top and the smallest country at the bottom.

	Spain	
China		Australia
India	Poland	Mexico
Jamaica		France
	Japan	

Example of a 3 x 3 grid - Arrange the countries by size with the largest 3 at the top and the smallest 3 at the bottom.

Are these the largest?	Spain	China	Australia
In the middle?	India	Poland	Mexico
Are these the smallest?	Jamaica	Japan	France

Note: The arrangement of the countries in the above examples are not correct, but will provide an opportunity to reflect and then research.

Appendix 1

John Dewey

As mentioned in Section A, both the theory and the practice of EBL owe much to the great American philosopher and educationalist, John Dewey. Dewey was a prolific writer, and lived a long time (1859 – 1952)! So, it would be presumptuous, if not foolhardy, to try and condense his thinking into just a couple of pages. Fortunately, he attempted a distillation for himself, in an essay first published in *'The School Journal*, Volume LIV, Number 3 (January 16, 1897), pages 77-80'. The essay was titled 'My Pedagogic Creed', and here are a few interesting quotations, with headings and notes about their relevance to the themes of this handbook.

a The need for education to connect with children's activity

The child's own instincts and powers furnish the material and give the starting point for all education. Save as the efforts of the educator connect with some activity which the child is carrying on of his own initiative independent of the educator, education becomes reduced to a pressure from without. It may, indeed, give certain external results, but cannot truly be called educative.

Note: By 'activity' here, Dewey would not mean only physical activity. Indeed, arguably, it is the child's mental activities – her ongoing concerns and interests, and her attempts to understand and respond appropriately to the world around her – that form the basis on which teachers should build. This is the classic model of the educator as one who 'pulls out' (from Latin, *educare*) rather than the instructor who 'piles in' (from Latin, *instruere*).

b The challenge of preparing children for the future

With the advent of democracy and modern industrial conditions, it is impossible to foretell definitely just what civilisation will be twenty years from now. Hence it is impossible to prepare the child for any precise set of conditions. To prepare him for the future life means to give him command of himself; it means so to train him that he will have the full and ready use of all his capacities; that his eye and ear and hand may be tools ready to command, that his judgement may be capable of grasping the conditions under which it has to work, and the executive forces be trained to act economically and efficiently.

Note: What was true about changing society and work over 100 years ago is all the more obvious now. *Open Futures* takes seriously the challenge to give children control of themselves – in the affective/emotional dimension – as well as control of their own learning – in the cognitive/intellectual dimension. The latter does not translate into handing over the macro decisions of curriculum planning to children, either individually or collectively. However, it does translate

into engaging them with decisions about learning at the micro level – for example, which particular aspects of a topic to concentrate on, in which order, and by what means. It is, indeed, at this micro level that enquiry if/when encouraged and well-managed can play such a significant part.

c The need for school life to build on home life

I believe that ... school life should grow gradually out of the home life; that it should take up and continue the activities with which the child is already familiar in the home. I believe that it should exhibit these activities to the child, and reproduce them in such ways that the child will gradually learn the meaning of them, and be capable of playing his own part in relation to them... I believe that this gives the standard for the place of cooking, sewing, manual training, etc., in the school.

Note: Not all of these activities are represented in *Open Futures*, but 'domestic science' is obviously reflected in the cookit strand. *Growit* and *filmit* certainly require manual skill; but, like cooking, they also require mental skill. The special *askit* sessions focus on developing mental skills, and hardly at all on manual skills, but they do steadily depend upon and develop speaking and communicating – as important a practical skill as any. Indeed, the following quotations could be thought to touch on its importance, not only within the home, but within the child's larger society.

d The importance of expression and construction (making) in society

I believe that the only way to make the child conscious of his social heritage is to enable him to perform those fundamental types of activity which make civilisation what it is. I believe, therefore, in the so-called expressive or constructive activities as the centre of correlation.

Note: It is worth emphasising, in this context, that not only should *askit* sessions be planned so as to reflect creatively upon important matters in children's lives, and to encourage them into taking practical steps to improve matters for themselves; but also they could lead them into 'expressive or constructive' activities. These could be the making of stories, playscripts, displays, artefacts or, indeed, films that help them make even better sense of the questions and concepts they have been discussing.

Askit and *filmit* will also, enhance children's experiences and understanding of the fruits of their labours in the two more 'physical' strands, *growit* and *cookit*. They will provide opportunities for children to reflect on the practice (and purposes and problems) of their manually creative work, thereby giving them the will and skill to be reflective makers, i.e. to reflect in the practice.

e The importance of developing children's interests

I believe that interests are the signs and symptoms of growing power. I believe that they represent dawning capacities. Accordingly the constant and careful observation of interests is of the utmost importance for the educator. I believe that these interests are to be observed as showing the state of development which the child has reached. I believe that they prophesy the stage upon which he is about to enter. I believe that only through the continual and sympathetic observation of childhood's interests can the adult enter into the child's life and see what it is ready for, and upon what material it could work most readily and fruitfully.

Note: Firstly, it could be remarked how similar, in essence, these statements are to the famous theory of Vygotsky, usually referred to as the 'Zone of Proximal Development'. This is the 'zone of progress' into which teachers can lead learners by 'mediation' – that is, by providing 'scaffolding' for understanding. The 'tools' for scaffolding that Vygotsky had particularly in mind were words or concepts that adults themselves use to explain the world, but of course teachers' questions and children's own questions play a fundamental role in this process.

Secondly, this presents a model of the teacher as primarily a listener and observer of children. Good listening is a fundamental quality in teachers, for the best way of developing children's interests is to give them the tools to do so themselves. This handbook has proposed various 'tools' to this end, but the most important tool, or habit, of all is that of asking questions. That is a habit that can truly make learning lifelong, but can also make learning meaningful now, and not just for the future.

As Dewey, again, put it:

"I believe that education is a process of living and not a preparation for future living."

This theme, of education as a process of living, clearly reflects a view of education, but it also reflects a wider philosophy of life, known as 'pragmatism', whereby human life is regarded as a series of problems, which we solve through more or less conscious enquiry.

Books such as *'The Scientist in the Crib'*, by philosopher/psychologist Alison Gopnik, suggest that even before humans speak they are active enquirers into the physical and social world where they find themselves; and perhaps this is no news for parents who have speculated about their babies' thought processes.

But the process of enquiry can indeed be made into a more conscious one – not simply by training oneself in 'scientific method' but by training oneself to recognise, or even seek out,

problems more readily; and then to set about solving them more creatively and systematically.

Dewey himself produced a classic analysis of the process in his book, *'How we think'*. He suggested that there were 6 basic steps involved in enquiry, as shown below.

Dewey's 6 steps of enquiry

- 1 one becomes aware of a need or problem
- 2 one identifies or formalises the problem
- 3 one creates or entertains hypotheses or elements of a solution
- 4 one reasons out implications or likely results
- 5 one tries out or tests the proposed solutions
- 6 one forms a judgement or a resolution.

a Discuss the extent to which this represents the way you think, consciously or unconsciously, throughout the day.

b Discuss the extent to which these steps underlie enquiry in any, or all, 'subjects'; e.g. scientific enquiry, historical enquiry, geographical enquiry, or artistic enquiry.

Perhaps, in simple, everyday cases of 'problem-solving', we do not need to be conscious. If we cannot open a door, for example, we may well 'formalise' the problem by saying to ourselves or others, 'The door seems to be jammed'. We may even form a clear picture that there is something the other side blocking the door, and decide either to push harder against the door, or to phone a friend, or whatever. Perhaps we reason out which course might be provide the best solution, and test each one until we have success. Then, if we think back, we might form a judgement about our solution(s), and even make a resolution for the future. However, the word 'if', here, suggests this sort of everyday enquiry often proceeds without much consciousness of different steps or stages in the process of our thinking. Importantly, the thinking is none the worse for that.

It might well be otherwise when the problem 'grows' - because none of our immediate solutions actually work - or when the problem is more complex from the start. Sometimes we really do take a while to even realise that we are facing a problem, and we have to make a concerted effort to clarify what it is. Then we may have to bring to mind any number of elements and factors, and work hard to create possible solutions. Since – it would seem – people's personal and practical problems are no less complex now than in the past, and may even be more so, the value of deliberately practising 'problem-solving', as in *Open Futures*, could well be increasing.

Appendix 2

The Reggio Emilia Approach

Reggio Emilia is the name, not of a person but of a city, in Northern Italy. In the decades either side of 1900, it developed a strong socialist tradition, and was therefore subject to oppression by Mussolini's Fascist regime in the 1930's and early 1940's. After the war parents in the city and surrounding villages sought a fresh approach to education, and a distinct philosophy of education emerged under the guidance of Loris Malaguzzi (1920 – 1994).

The focus was on how to develop the community's respect and responsibility for children in their early years, and how to develop children's own respect and responsibility for their community. This almost certainly reflected the communitarian spirit of the city.

In practice, it translated into a 'curriculum' or context in which children developed their interests with support and guidance from teachers committed to the growth of those interests. This approach was, and is, different from a planned 'topic-based' approach in that some 'enquiries' emerge from teachers' responses to children's spontaneous play and interests, whilst other enquiries build from 'topical' or local events that capture the attention of the children and community.

A further special feature of the approach, hinted at in the section on the Primary Years Program, is that, as their enquiries proceed, children are encouraged to depict their understanding through one of what Malaguzzi called the Hundred Languages of Children, including drawing, sculpture, dramatic play, and writing.

In sum, the approach is much more child-centred and flexible than can be managed when a curriculum is heavily prescribed by content. But of course it would lend itself very well to a curriculum focussed on the development of skills and dispositions.

Paulo Freire (1921 – 1997)

(Extract from Wikipedia)

Freire is best-known for his attack on what he called the "banking" concept of education, in which the student was viewed as an empty account to be filled by the teacher. The basic critique was not new – thinkers like John Dewey were strongly critical of the transmission of mere "facts" as the goal of education.

In 1961, he was appointed director of the Department of Cultural Extension of Recife University, and in 1962 he had the first opportunity for significant application of his theories, when 300 sugarcane workers were taught to read and write in just 45 days. In response to this experiment, the Brazilian government approved the creation of thousands of cultural circles across the country.

In 1964, a military coup put an end to that effort. Freire was imprisoned as a traitor for 70 days. After a brief exile in Bolivia, Freire worked in Chile for five years for the Christian Democratic Agrarian Reform Movement and the Food and Agriculture Organization of the United Nations. In 1967, Freire published his first book, *Education as the Practice of Freedom*. He followed this with his most famous book, *Pedagogy of the Oppressed*, first published in Portuguese in 1968.

Note: Freire's educational theories and practices were developed more in the context of adults' education than children's, but his emphasis on respectful dialogue between teacher and learner remains an important touchstone for humane education at any level.

Appendix 3

The Armathwaite curriculum model and VLE

(See diagram below)

The Virtual Learning Environment (VLE) was set up in 2007 to enhance the partnership between Armathwaite School and the community. The system is both private and inward facing, entrance can only be gained by use of a secure password, but once inside the system communication between users is open. The VLE contains the following areas:

- Community Database – detailing community skills for sharing
- Local Community Requests – a community forum where members can request support and help
- Link to the school website
- Pupil Reviews – opportunities to review children's work
- Information on creativity in education
- Other topical information
- Children's Blogs – all the children are encouraged to keep their own blogs where they can record personal events that have happened at home and at school.

The VLE has over one hundred members and plays an important role in developing learning throughout both the teacher directed and child initiated curriculum. Membership is also available to close friends and family of children at Armathwaite School and members of the wider community at the request of the school.

The Armathwaite curriculum model and VL

Child-initiated Independent Learning



Teacher and Support Staff Roles

- Teaching the skills for independent life long learning
- Expertise in the process of learning
- Adoptive and creative facilitator
- Connecting social and technological capital

Skills for learning

Teacher Directed Curriculum



Community Expertise

- Two-way communication between people of all ages
- Community Development Worker Role
- Virtual Learning Environment

Appendix 4

Personal, Learning and Thinking Skills (PLTS)

As stated in Section B, PLTS stands for Personal, Learning and Thinking Skills, and helps form one of the 'Foci for Learning' in the QCDA 'Big Picture' of the English National Curriculum.

These skills were not listed as such in the 2000 revision of the curriculum, but the impetus towards raising their profile started towards the end of the 20th century, when it became clear that emotional intelligence, learning to learn and focusing on thinking rather than rote learning were vital ingredients of a 21st century education.

These foci are not unique to the UK. Many other countries are recognising the need to highlight them in their national curriculum. The 1990 SCANS report by the Department of Labour in the USA, for example, mapped the following 'Necessary Skills' for the future workforce, apart from the basic skills of reading, writing, maths, listening and speaking:

Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons

Personal Qualities: Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty. No doubt a huge amount of discussion went on in the Department to come up with this list, and no doubt other departments – indeed, individuals – throughout the world might come up with slightly different lists.

One of the most widely recognised lists from an individual, for example, is the 4Rs list of Professor Guy Claxton, Professor of the Learning Sciences at the University of Winchester:

Reflection, Resourcefulness, Resilience, Reciprocity

The first two of these could be associated with Thinking Skills, and the second two with Personal Qualities (the last, more exactly, with what are generally called Interpersonal Qualities/Skills).

Doing justice to PLTS within the curriculum and classroom is sufficiently important for schools to spend time discussing which framework they will adopt, and how exactly they will put it into practice. This task is not small or simple: teachers will need to show high degrees of reflection, resourcefulness, resilience and reciprocity themselves! But it will definitely be worth doing, and happily could be done within the context of planning for *Open Futures*.

Indeed, *Open Futures* provides schools with a head start in planning for, and implementing, a PLTS framework, since its enquiry-based approach, led by *askit*, is tailor-made for the development of most of the skills involved, while its practical skills focus, expressed through *growit*, *cookit* and *filmit*, provides diverse opportunities for enlarging and enhancing the skills set.

To demonstrate the first point, let us look at the PLTS framework, as proposed by the QCA itself. It consists of six headings, each of which is explained below.

Self Managers: Young people who organise themselves, showing personal responsibility, initiative, creativity and enterprise with a

commitment to learning and self-improvement. They actively embrace change, responding positively to new priorities, coping with challenges and looking for opportunities.

Effective participators: Young people who actively engage with issues that affect them and those around them. They play a full part in the life of their school, college workplace or wider community by taking responsible action to bring improvements for others as well as themselves.

Team-workers: Young people who work confidently with others, adapting to different contexts and taking responsibility for their own role. They listen and take account of others views. They form collaborative relationships, resolving issues to reach agreed outcomes.

Reflective learners: Young people who evaluate their strengths and limitations as learners, setting themselves realistic goals and criteria for success. They monitor their own performance and progress, inviting feedback from others and making changes to improve their learning.

Independent Enquirers: Young people who process and evaluate information in their investigations, plan what to do and how to go about it. They take informed and well reasoned decisions, recognising that others have different beliefs and attitudes.

Creative thinkers: Young people who think creatively by generating and exploring ideas, making original connections. They try different ways to tackle a problem, working with others to find imaginative solutions and outcomes that are of value.

Teachers, and children, who have taken part in *askit* will be able to confirm from experience that the process of enquiring together develops each of these skill sets. The personal and interpersonal dimensions are built into the *askit* concept of 'Caring and Collaborative Thinking', whilst the reflective, enquiring and creative dimensions are built into the other 2Cs, 'Critical and Creative Thinking'.

Even when we look at the QCA analysis of the sets, we can readily identify the particular skills being practised in a community of enquiry. The obvious examples are those expected of Independent Enquirers, to:

- Identify questions to answer and problems to resolve;
- plan and carry out research, appreciating the consequences of decisions;
- explore issues, events or problems from different perspectives;
- analyse and evaluate information, judging its relevance and value;
- consider the influence of circumstances, beliefs and feelings on decisions and events;
- support conclusions, using reasoned arguments and evidence.

Similar examples can be found in the other lists, available from <http://curriculum.qcda.gov.uk> Appendix 5

Appendix 5

Art Costa and Habits of Mind

Art Costa is now Emeritus Professor of Education at California State University, Sacramento, but was originally a classroom teacher. He has also been a curriculum consultant, and Director of educational programs for NASA. His approach to learning, known as Habits of Mind, was a synthesis of many studies and ideas, including those of Reuven Feuerstein ('Instrumental Enrichment') and Edward de Bono ('CoRT'), and of well-known psychologists/educators David Perkins and Robert Sternberg. For further details of the history of HoM, see the Australian website:

www.instituteforhabitsofmind.com/brief-history-habits-mind

Costa was trying to identify the main characteristics or dispositions of successful problem-solvers. The list he came up with is not a list of procedures or 'tools' for better thinking but a pointer to the sorts of attitudes and aptitudes that make for better thinking (and, indeed, better learning, since 'deep' learning requires thinking about one's learning, not simply parroting what one is taught). In short, as hinted in Activity 3 on p. 9, it would be an excellent list to fill out the 'attitudes and aptitudes' section in the QCDA's Big Picture.

In Activity 3, the following were suggested as habits or 'healthy mindsets' that play a significant part in enquiry: open-mindedness, empathy, accuracy, connection-making, perspective-taking, and, of course, criticality.

You might now compare these with Costa's full list, perhaps asking yourself two questions:

- a *Which habits are the most integral to the enquiring mind?*
- b *How can a teacher cultivate all these habits, and particularly those that make for better enquiry and learning?*

Costa's full list:

- 1 Persisting – Do stick at it.
- 2 Communicating with clarity and precision – Be clear.
- 3 Managing impulsivity – Take your time.
- 4 Gathering data through all senses – Use your natural pathways.
- 5 Listening with understanding and empathy – Understand others.
- 6 Creating, imagining, innovating – Try a different way.
- 7 Thinking flexibly – Look at it another way.
- 8 Responding with wonderment and awe – have fun figuring it out.
- 9 Thinking about your thinking (metacognition) – Know your knowing.
- 10 Taking responsible risks – Venture out.
- 11 Striving for accuracy and precision – Find the best possible solution.
- 12 Finding humour – Laugh a little.
- 13 Questioning and problem posing – How do you know.
- 14 Thinking interdependently – Learning with others.
- 15 Applying past knowledge to new situations – Use what you learn.
- 16 Remaining open to continuous learning – Learn from experiences

Finally, in part answer to questions (a) and (b) above, one could do worse than enquire into / learn about the Building Learning Power approach of Guy Claxton, who is referred to in Appendix 4. This approach highlights Reflection, Resourcefulness, Resilience, and Reciprocity, and suggests many small, but practical, steps for building precisely those, and other related, qualities or habits of mind (and, one might say, character) – in short, healthy mindsets for learning and living. And perhaps, of all these mindsets, the two most important are Reflection – particularly, the habit of reflecting on your current thinking/mindset; and Resourcefulness – particularly, the habit of enquiring in order to improve your current thinking.

