Ways of Learning: Creating and thinking critically

Introduction
The new EYFS framework is based on the findings of the Tickell review of the EYFS, published in spring 2011. This placed a great deal of emphasis on the importance of practitioners recognising and understanding the ways in which young children learn in order to support them as effective learners. These characteristics of learning are an integral part of the three prime and four specific areas of learning, and describe the attitudes, skills, and approaches to learning which can be nurtured in the early years.

The characteristics of effective learning are:
● Creating and thinking critically – children have and develop their own ideas, make links between ideas, and develop strategies for doing things.
● Active learning – children keep on trying if they encounter difficulties, and enjoy their achievements.
● Playing and exploring – children investigate and experience things, and ‘have a go’.

These three learning characteristics describe learning processes rather than outcomes. This means that how a child exhibits these characteristics should be observed as part of the formative assessment process. This will help practitioners to understand the child better, and be more equipped to support his or her development as a learner.

Helping children to become effective lifelong learners
The structure and content of the EYFS framework is based on evidence from developmental psychology (Whitebread, 2012) which highlights the central role of self-regulation in the early years as one of the key determinants of academic success later in life. The concept of self-regulation includes:
● attitudes and dispositions for learning – the motivation, or ‘will’
● the ability to be aware of one’s own thinking – cognitive strategies, or ‘skill’.

According to theories of intrinsic motivation, ‘will’ arises naturally within a child, and is demonstrated by a natural, inherent drive to seek out challenges and new possibilities.

In support of this, the work of Carol Dweck and colleagues from Stanford University highlights the greater success of individuals whose motivation arises from a desire for mastery, rather than a desire for external reward. This is supported by Albert Bandura’s self-efficacy theory which highlights the value of individuals being able to:
● view challenging problems as tasks to be mastered
● develop a deeper interest in the activities they are involved in
● have a strong sense of commitment to their interests and activities
● recover quickly from setbacks and disappointments.

According to Bandura, our beliefs and attitudes supporting self-efficacy form in early childhood, highlighting the importance of fostering these characteristics in young children.

Creating and thinking critically
This characteristic of learning is all about thinking. We are aware that babies and young children are thinkers who make sense of their experiences through perceiving patterns and developing concepts. As children engage in all the different activities which take place in the early years setting, they actively think about the meaning of what they are doing. Over time they will begin to become more aware of their own thinking – we call this metacognition. This awareness of oneself as a thinker and learner is thought to be a key characteristic of a successful learner.
● **Having their own ideas** focuses on creativity – generating new ideas or ways of doing things across all areas of learning and development. By being inventive and creative, children can find new challenges or problems to solve and can come up with their own unique ways of solving these.

● **Using what they already know to learn new things** begins when very young babies begin to organise the sensory input they obtain from their environment to notice patterns and make predictions. As children grow older, their thinking becomes more conscious as concepts are developed and linked together. They begin to finding meaning in sequence, in cause and effect, and in the intentions of others.

● **Choosing ways to do things, and finding new ways**, is all about how children learn to approach goal-directed activity in organised ways by making choices and decisions about how to approach tasks – planning what to do, and being able to change their approach if necessary. There is some evidence to show that when children were asked to explain how they had solved a problem, they learned more than when they were simply given positive feedback. Explaining errors seems to lead to more lasting learning than explaining why something is correct. This suggests that understanding the processes of how problems are solved is more important than simply getting the right answer.

### Observing a child’s Ways of Learning

Because it is not appropriate to specify particular ages or stages for the development of learning characteristics, or to use summative assessment to judge the extent to which they have been demonstrated, there are no early learning goals for the characteristics of learning. Instead, when completing the EYFS profile at the end of the foundation stage, practitioners are expected to comment on how individual children demonstrate these different characteristics.

#### Proposed addition to EYFS Profile (Tickell 2011)

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<th>Learning characteristics</th>
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<td>● finding out and exploring</td>
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<td>● using what they know in their play</td>
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<td>● being willing to have a go</td>
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<td>● being involved and concentrating</td>
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<td>● keeping on trying</td>
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Albert Bandura: http://psychology.stanford.edu/abandura  
Carol Dweck  http://psychology.stanford.edu/cdweck  
Observing creating and thinking critically in practice

When practitioners are observing how children are creating and thinking critically, they will be looking at how their thinking develops through:

- having their own ideas
- using what they already know to learn new things
- choose ways to do things, and find new ways.

The following snapshot captures the activities and experiences which make up a typical morning in a setting catering for children from six months to five years of age.

During the session, practitioners have the opportunity to observe how individual children are creating and thinking critically as they encounter the world around them. These characteristics of effective learning, which are evident in the children’s experiences across all seven of the EYFS areas of learning and development, are highlighted at the end of each section.

Enjoying a Treasure Basket

While four younger babies are having their afternoon rest, the practitioners prepare the room for a Treasure Basket session. The toys are cleared away and the Treasure Baskets are placed on separate rugs at either side of the room. When the babies have woken up and had a drink and a snack, they are eager and excited to explore the Treasure Basket collections. Two babies are placed beside each Treasure Basket and the practitioners sit back to observe what happens.

Each Treasure Basket contains a wide range of safe but interesting objects for the babies to explore. There are things made of wood, metal, fabric, and leather, which differ in texture, smell, sound, shape, size, and colour. There are natural materials, reclaimed objects, and interesting household objects, such as a pastry brush, a sponge, and a metal whisk.

The practitioners observe and note the individual ways in which each baby explores. One of the girls enjoys emptying everything out of the basket and then playing with her favourite things – touching and mouthing them before waving them around. The little boy sitting next to her explores by picking objects up one at a time, looking carefully and manipulating them from hand to hand. A third baby chooses objects two at a time – one in each hand – comparing in her own way the properties of one with another. She enjoys banging things together to make a noise and laughs happily when her efforts are successful. Towards the end of the session one of the babies picks up the empty Treasure Basket and puts it on her head as a hat.

While the babies are exploring the Treasure Baskets, the practitioners will have opportunities to observe different aspects of the prime areas of learning – Personal, Social and Emotional Development, Physical Development and Communication and Language, as well as building their experience of materials and how they behave within Understanding the World.

However, there will also be many opportunities to see how individual children approach creating and thinking critically by noting how they:

- use their own ideas and previous experiences to explore the Treasure Basket collections
- use ideas they have gathered from previous sessions to develop their ideas
- come up with their own ideas about what the basket could be used for.

Adventure stories

Towards the end of the morning, a group of three to four year olds are sitting outside in a quiet corner of the garden enjoying a story. A canopy strung between two trees, a waterproof rug, and several large cushions create a comfortable space to relax in. As well as bringing out several of their favourite books, the children also have with them an assorted collection of toy dinosaurs, farm animals, cars, and a helicopter. Several of the children are wearing hats, dresses, capes, and animal costumes from the role play box.
Today’s choice of story, made after a discussion involving several individuals putting forward their ideas, is about an adventure in the jungle. The practitioner starts to read the story and the children look at the pictures. Very soon the children decide that they can improve on the story and begin to offer alternative scenarios. To make things more exciting, several children begin to act out the different events in their new adventure story.

The animals have to be saved from the flooding river by the helicopter swooping in and carrying them off to higher ground. Several of the children become ‘nurses’ and check the animals over to see if they have been injured. Superheroes are then called into action to help put out a fire in the forest and the animals have to be moved again – this time by car.

While this is going on two of the children spend their time creating paddocks for the farm animals using a range of things they find around about them, including twigs, stones and shells. They agree how many animals should go into each enclosure and move them there, counting them as they do so. Two other children are using the cushions to build a den for the dinosaurs.

As the session draws to a close, the practitioner brings the children back together and they finish up by reading the original story again. She invites the children to talk about the other ideas they came up with so they can begin to reflect on how they developed, and what they were thinking about at the time.

While the children are engaged in listening to and developing their stories, there are opportunities to observe some aspects of all the areas of learning – Personal, Social and Emotional Development, Physical Development, Communication and Language, Literacy, Mathematics, Understanding the World, and Expressive Arts and Design.

However, there will also be many opportunities to see how individual children approach creating and thinking critically by noting how they:
- come up with their own ideas for the story based on their knowledge and experience of the world
- use what they have learned in one context and apply it in another
- find new ways to express their ideas based on the jungle adventure story.

Experiences with a tree trunk

A group of four year olds are playing outside in the garden where there is a large piece of wood from a fallen tree. Each of the children has his or her own way of engaging with the tree so several different things are happening at the same time.

Some of the children are pulling and poking at the bark to see what it feels like. They pick away at the bark until they are able to pull some pieces off, and then are interested in what it looks and smells like. Another child is fascinated by the woodlice and small snails that have appeared when the bark has been taken off.

After some discussion, two of the children pick up handfuls of the bark pieces and take it over to the sand pit where they begin building with it. They poke the larger bits of bark into the sand and try to balance pieces on top to see if they can build a tower. As the children’s play progresses they incorporate other things - small lengths of wood, plastic piping and upturned bucket – into their construction.

Meanwhile, the remaining bark is scooped up by two other children who delight in throwing it up in the air to see where it lands. They endeavour to catch it in their hands as it falls back down. They persist with this for some time until one child has the idea of using her coat to catch the pieces. Their play develops into a cooperative activity involving piling pieces of bark onto a coat, holding on to the sides and flicking the bark upwards to see if they can catch it again.

While all this has been going on, three other children have been enjoying clambering on and off the tree trunk. Each child has their own strategy for getting up and coming back down again.
While the children are involved in these experiences, the practitioner will be able to observe different aspects of Personal, Social and Emotional Development, Physical Development, Communication and Language, Understanding the World, and Expressive Arts and Design.

However, there will also be many opportunities to see how individual children approach creating and thinking critically, by noting how children:

- each have their own ideas about ‘what to do with a tree trunk’
- enjoy moving materials from one place to another to create new things, and using their previous experience of construction to extend their ideas
- solve problems and come up with innovative ways to try to catch the pieces of bark as they fall down.
How to support young children creating and thinking critically

Being aware of the ways in which different children learn will help practitioners to support and extend the learning and development of each of the children they work with. Focusing on the characteristics of learning means being aware not just of what children are learning, but how they are learning.

The three characteristics of learning – playing and exploring, active learning and creating and thinking critically – are closely associated with one another. In any activity or experience that a child is engaged, he or she will often demonstrate attitudes or approaches associated with more than one way of learning. The scenarios described in the section Observing creating and thinking critically in practice are a good example of this.

For all practitioners it is important to have a clear understanding of the different attributes associated with creating and thinking critically in order to be able to recognise them more easily when observing young children’s play. You will be looking at how their thinking develops through:

● having their own ideas
● using what they already know to learn new things
● choosing ways to do things, and finding new ways.

Use the following questions to help you to reflect on how well your setting supports young children’s creating and thinking critically.

● Is there training we could organise to help all members of staff fully understand the different characteristics of learning?
● Where could we find a wider range of interesting open ended resources to engage children’s interest and encourage creative thinking?
● Do we value the creative ways in which some boys like to express themselves through vigorous fantasy play?
● Are we doing enough to encourage children to move things around, try things out, and be creative in their play?
● How could we change our routines so that staff have more time to observe individual children while they are playing?
● Do we make enough use of sequences of photographs to record the processes of children’s learning?
● Do we give children time to talk about what they have been doing to help them to organise their thoughts and ideas?
● How often do we help the children to revisit previous experiences, reflecting on what they have done and what they might do differently next time?
● How well do we celebrate young children’s diverse ways of learning?
● What could we do to help parents understand more about the value of children’s creativity and critical thinking?
Ideas for parents – how young children learn

- Every child is unique and has his or her own way of exploring the world around them and the people in it. However, research with young children tells us that there are particular attitudes and approaches that will help young children to develop as successful learners in the early years, and later in life.

These can be grouped together under three headings:
- Playing and exploring
- Active learning
- Creating and thinking critically.

These describe how children are learning rather than what they are learning.

Playing and exploring is all about how children investigate and experience things, and 'have a go' for themselves.

Active learning describes the importance of children being encouraged to keep on trying if they encounter difficulties, and enjoying their achievements for their own sake, rather than to please anyone else.

Creating and thinking critically highlights the value of children having and developing their own ideas, making links between ideas, and developing their own ways of doing things.

Ideas to use

Try using some of these simple ideas with your child. The important thing to remember is that there is no right or wrong way to do things – instead you want to encourage your child to find things which interest them, try out their ideas, and enjoy the satisfaction of doing things for themselves.

- Put together a small collection of interesting things to explore. You could include a bunch of keys, a padlock, a short length of chain, several brushes of different shapes and sizes, a shiny bowl, a piece of fabric, an old mobile phone. Watch to see what your child does with them and all the surprising things they find to do with them.
- With your child, make up a collection of natural things – leaves, twigs, shells, pebbles, sand – to use for making patterns, building things with, and making houses and homes for toy animals, people and dinosaurs.
- Try creating a construction set using things like plastic bottles, short lengths of plastic pipe, pieces of wood, bark, short sticks, pieces of fabric, and cardboard. Building with this set will be an exciting challenge with lots of problems to solve and challenges to overcome.
- Out of doors is a great place to explore and build up physical skills such as jumping and climbing. Help your child to try things out, take on challenges, practice skills, and enjoy the satisfaction of achieving what they set out to do.