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Challenging Early Learning

Helping Young Children Learn How to Learn



A David Fulton Book

4. ENGAGING CHILDREN'S THINKING SKILLS

4.0 LEARNING HOW TO THINK

This chapter focuses on teaching children *how* to think. It is not about *what* to think but about *how* to think. Before we dive in, let's start with a story.

Teaching children how to think should be a key part of education.

Many years ago, we (the authors) attended an international conference in Bulgaria. The focus was Philosophy for Children. In addition to the 200 delegates from around the world, the organisers also invited some local teenagers to take part in proceedings. Midway through the four-day event, James was asked to facilitate a community of inquiry with these teenagers for the other delegates to observe.

He began the session with a fictional story about two hunters, Hank and Frank, who are chased by a talking bear. The teenagers then created a number of philosophical questions from which they chose their favourite: 'Why sacrifice yourself for others?' After a short pause for quiet reflection, James invited an eager young man to start us off by giving his first thoughts. This is what he said:

It seems to me that 'sacrifice' is the most important concept in this question. I think someone might sacrifice themselves based on instinct, impulse or intuition. Of course, two of these are in the cognitive domain and one is in the affective domain, so I suppose we need to determine which of these is more likely in any given situation before we can answer the question effectively.

All the other delegates were nodding approvingly at the boy's apparent confidence in thinking about and analysing the concept of sacrifice. James, on the other hand, was like a rabbit caught in the headlights; he certainly had not been expecting that response!

To grab some thinking time for himself, he asked the teenagers to decide what these terms – 'instinct', 'impulse' and 'intuition' – had in common. Whilst they did that, James asked a friendly philosopher to suggest what to do next.

Reconvening, James asked one girl to give her group's answer. She will forevermore be James's favourite because she replied: 'Instinct, Impulse and Intuition have one thing in common . . . they are all names of perfumes'. (At last: a 'normal' teenager!)

Once the hour-long discussion had finished, James made a beeline for the organisers and moaned that they had staged all this: 'You could've told me you'd invited only the most talented philosophers from across Bulgaria to join us!' he said. They laughingly explained they had simply invited volunteers from the local area to take part – there had been no selection process.

'So how come they're so adept at thinking?' James inquired. 'Because they've been taught how to think from an early age', they said. 'But so have children in the UK and yet we haven't come across young teenagers as skilled in thinking as your students', James countered. Their response was something that initially vexed, then intrigued and ultimately emboldened us both: 'From what we've seen in Western countries, you don't seem to teach children *how* to think; instead you only teach them *what* to think'.

The more we work in Early Years settings and schools around the world, the more we think these Bulgarian teachers may have been right.

For example, ask children at the end of primary school (9- to 11-year-olds) if they think stealing is wrong, and they will all answer yes. But if they are asked why Robin Hood is thought of as a good man if stealing is wrong, they will retort, 'Because he robbed from the rich and gave to the poor'. Perhaps there's nothing too controversial there, but if you press them to decide whether it would be OK to steal, let's say from a bank, and give the proceeds to poor people, they almost always say yes. Rarely do the children seem troubled by the fact that stealing from anybody, no matter what the funds are used for, is against the law.

This suggests the Bulgarian teachers might be right – that too many children are being taught what, rather than how, to think?

Teaching children how to think includes improving the ways in which they process information, ask questions, give reasons, look for counter-examples and so on.

Yet teaching children *how* to think feels like something of an abstract concept. Perhaps the simplest way to picture it is to consider one strategy for thinking that we all use when faced with a difficult choice, to list advantages and disadvantages. Creating this structure in our head is common to all of us. But it is not a structure we were born with – we were taught it, and it has become one of our ‘thinking tools’. Dialogue allows us to model structures for thinking, for example, by asking questions, giving counter-examples, asking for reasons, justifying answers, adding to the last idea you heard. All of these are new thinking structures, and you are explicitly modelling and teaching them with the children.

In another example, we often notice teachers and parents praising children for saying the ‘right’ thing: ‘it is wrong to kill’, ‘we must always be nice’, ‘you should never lie’, and so on. And on the face of it, this might seem reasonable. After all, we want children to be moral and to do the right thing. However, what happens when they are faced with a dilemma but, up to that point, have only ever followed instructions? Such dilemmas might include eating meat whilst maintaining that killing is wrong; always telling the truth even if it is likely to hurt someone; always being nice even to someone who is either being racist or bullying a friend. What then?

Many parents will reply that they trust their children to do the right thing. But how do children know what the ‘right’ thing is unless they have learnt how to make moral decisions for themselves? In other words, how can they be moral if they haven’t learnt how to think or haven’t developed at least some wisdom?

To answer this, it is important to distinguish between types of thinking that, to our minds, consist of two main categories: routine and reflective.

Routine thinking includes the thinking we do almost subconsciously when, for example, riding a bike, walking or quoting our telephone number.

Reflective thinking includes thinking about the consequences of our actions and deciding on the relative importance of factors affecting our decisions about what to think or do.

If a child learns to speak or write fluently but then does so thoughtlessly or inconsiderately, he is likely to upset others. If she memorises lots of facts but doesn’t learn how to use them wisely, then her knowledge will be limited in its application. Therefore, the development of thinking includes the ability and willingness to exercise the right type of thinking at the right time for the right purpose. That is exactly what teaching children how to think can improve!

The sorts of thinking skills we should aim to teach young (and old) children are shown in Figure 28. This is not an exhaustive list. It should also be adapted to suit the developmental stage of the children you are working with.

Teaching children how to think focuses particularly on improving their reflective thinking.

NOW TRY THIS

A good starting point for using the list of thinking skills shown in Figure 28 is to choose three that you think your children are ready for and would benefit most from. Then plan with your colleagues some ways you can help your children practise these skills. This shouldn’t happen in isolation, of course. Promote positive interactions with children by:

- **Listening attentively.**
- **Being sensitive to different children’s needs.**
- **Modelling good thinking.**
- **Using questioning techniques to promote wonder (see Chapter 5 for ideas).**
- **Encouraging children to ask questions.**
- **Supporting children to think collaboratively.**
- **Giving children time to talk.**
- **Giving children space to think (see Section 5.2).**

Teaching children how to think will always work best when done in conjunction with these values.

Promote opportunities for imagination and creative play by:

- Modelling open-mindedness.
- Focussing more on the process of thinking than on getting the 'right' answer.
- Emphasising the open-endedness of thinking tasks.
- Offering alternatives.
- Creating ambiguity.
- Welcoming ideas even if you don't understand the relevance of them.

Enable reflection and metacognition by:

- Encouraging children to think about what they are doing.
- Asking children to think about alternative ways to do things.
- Welcoming commentary.
- Promoting dialogue and questioning.
- Building on previous thinking.

Figure 28: Important thinking skills for young children

Here are some of the skills of thinking that you could help your young children develop.

Anticipate	Elaborate	Rank
Apply	Estimate	Represent
Cause	Evaluate	Respond
Choose	Explain	Say why
Classify	Give examples	Select
Compare	Give reasons	Sequence
Connect	Group	Show how
Contrast	Identify	Solve
Decide	Organise	Sort
Describe	Predict	Summarise
Discuss	Question	What if

In the next section, we share some thinking activities that you might want to try with your children. Whichever ones you use, think about the thinking skills that you could promote during the activity.

In the games that follow, please note:

The rest of this chapter describes some of the games you can play with young children to help them develop their skills of thinking.

- 1 We have highlighted the main thinking skills involved, but other skills could easily be developed alongside them.
- 2 Although there is no right or wrong answer, there are probably better ones in each case. To help identify the higher-quality responses, encourage your children to give reasons and to compare the relative merits of each answer they come up with.

4.1 TRANSPORTER

Main thinking skills:

- Predict outcomes.
- Look for alternatives and possibilities.
- Think flexibly.
- Ask, 'What if?'

Activity

Place an object on a chair such as a teddy bear or doll's house. Your children should try to move the object to the floor without touching it or the chair. The object has to land safely on the floor without being damaged. If you want to make things a bit easier, then you could provide some objects to help them such as a skipping rope, some large pieces of card or some drumsticks. Or you could let the children go on a scavenger hunt for suitable objects.

4.2 ODD ONE OUT

Main thinking skills:

- Find relevant information.
- Compare and contrast.
- Make connections.
- Give reasons.

Activity

Show your children three objects, and ask them which is the 'odd one out' and why. You are looking for a whole range of answers, not just the obvious ones. Figures 29, 30, 31 and 32 give you some examples, but you can use any three objects, sounds, images and the like.

Sample answers from four-year-olds:

The giraffe is the odd one out because the other two have paws.

The dog is the odd one out because it is the only one that barks.

The cat is the odd one out because cats make me sneeze (and the other two do not).

Sample answers from five-year-olds:

1 is the odd one out because the other two have got curly parts on them.

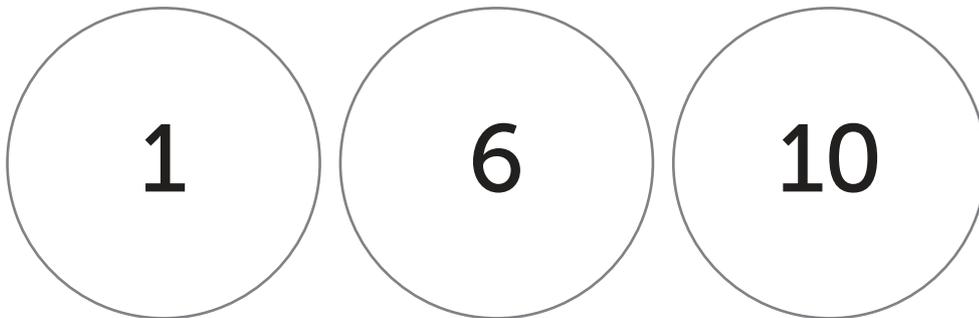
6 is the odd one out because it is the age that I will be soon (and the other two are not).

10 is the odd one out because it is the only one with two digits.

Figure 29: Odd One Out with a cat, a dog and a giraffe



Figure 30: Odd One Out with numbers



Sample answers from three-year-olds:

The big sock is the odd one out because it is black (and the other two are not).

The tights are the odd one out because they are for two feet (and the other two are not).

The little sock is the odd one out because it has pink on it (and the other two do not).

Sample answers from four- and five-year-olds:

The recorder is the odd one out because it is the only one you blow.

The drum is the odd one out because it is the only one you hit with a stick.

The tambourine is the odd one out because you shake it (and you don't shake the other two).

Figure 31: Odd One Out with socks



Figure 32: Odd One Out with musical instruments



4.3 THAT IS WHAT I WAS THINKING

Main thinking skills:

- Make connections.
- Give reasons.
- Look for alternatives and possibilities.
- Think flexibly.

Activity

Child A says what they were thinking of. Child B says what they were thinking of. Child A should then try to make enough links to suggest that they were both in fact thinking of the same thing.

Example: Child A says 'cat'; Child B says 'banana'. Child A then says: 'That's what I was thinking about because my cat was playing with a banana trying to get it open'.

4.4 THE THREE WHYS (MEN)

Main thinking skills:

- Give reasons.
- Think flexibly.
- Use precise language.
- Identify improvements.

Activity

Ask at least three successive questions that begin with 'why'. You can see an example of this in the video previously mentioned in which James is working with some three- and four-year-olds in Morpeth, UK (youtu.be/jZ4iNeNtLOM). In that video, the 'why' questions are as follows:

- James: If I put this builder's hat on your head then you become Bob the Builder; but if I put this name badge that belongs to Daniel next to you, do you become Daniel?
- Ava: No.
- James: Why not? (first why)
- Ava: Because it's silly.
- James: Why is it silly? (second why)
- Ava: Because it feels funny.
- James: Why does it feel funny? (third why)
- Ava: Because my name is Ava. I don't want to be called Daniel because that's not my real name.

The aim of three questions beginning with 'why' is to tease out more thinking and reasoning from your children than might normally be heard.

4.5 A REASONABLE HOLIDAY

Main thinking skills:

- Make connections.
- Infer and deduce.
- Seek further details.
- Develop criteria.

Activity

Show a suitcase full of objects to your children. Invent an imaginary character, and tell the children that the suitcase belongs to him/her. Invite your children to take turns selecting an object from the suitcase and to say whether it would be good to take that object on holiday or not.

Example objects include book, brush, mirror, cuddly toy, dice, pen, shorts, hat, sunglasses, banana, screwed-up paper, plastic flower, drumstick, boiled sweets, mobile phone, money, plastic farm animals, a plastic bag, swimming goggles and so on.

As the children engage in this activity, they should very soon realise that they don't have enough information. So, all being well, they will begin to ask questions such as:

Where is the character going on holiday?

Is it going to be warm/cold/wet/dry etc.?

Is the owner an adult or a child?

How long are the owner going for?

When your children start asking these sorts of questions, then take time to celebrate the question rather than going immediately to answering them. For example, you could say: 'What a great question. Can anyone else think of a question they would like to ask? Are there any questions that we already know the answer to?'

4.6 WHAT IF?

Main thinking skills:

- Identify problems.
- Think flexibly.
- Look for alternatives and possibilities.
- Search for value.

Young children love this game because it gives them the opportunity to let their imaginations run away with them. Ask them any number of 'What if . . . ?' questions, and see how they respond. For example:

What if . . .

- Horses were as small as guinea pigs?
- Rats could fly?
- Cucumbers were pink?
- Animals could read?
- Dreams were not allowed?
- Snakes could walk?
- Toys could talk?
- Dogs could be taught to drive?
- Rainbows could be climbed?
- Food cooked itself?
- Money grew on trees?
- All houses were made of gingerbread?
- Teeth cleaned themselves?
- Snow was warm?
- Vegetables tasted like chocolate?
- Everyone was always happy?
- Time went backwards?
- Humans could walk on water?
- Nobody ever told lies?
- Children made all the rules?
- Everyone looked the same?
- People never got old?

What would *you* do if . . . ?

A variation on the previous game is to ask your children what *they* would do if particular things were to happen. As with all the best early childhood games, encourage the other children to chip in with ideas or ask supplementary questions. For example:

What would *you* do if . . .

- You had no toys to play with?
- You were not allowed to talk for a whole day?
- We all had to swim to nursery?
- You could fly?
- You had a different name?
- You slept during the day and were awake all night?
- You were a king or queen?
- You couldn't use your legs?
- You could ride a unicorn whenever you wanted?
- You had to eat mud for breakfast?

4.7 STORYBOARDING

Main thinking skills:

- Think flexibly.
- Generate ideas.
- Give alternative suggestions.
- Identify improvements.

Activity

Divide your children into groups of about five and invite an adult to sit with each group. Ask the children a range of story prompt questions to help them create a story together. After each prompt is given, allow the children time to give their ideas and for the adult sitting with them to draw the children's responses on a large sheet of paper. Flip chart paper is perfect for this purpose.

Once you have asked the first question ('Who or what is the main character?'), give each group the chance to decide on their answer and then time for the adult to draw what the children told them. So, if one group decided on a 'girl', then the adult with that group should draw a cartoon girl on the flipchart paper. As you ask subsequent prompts, a cartoon storyboard will evolve in front of the children's eyes. They can then use this storyboard to retell their story to other children in the room.

Storyboard prompts:

- 1 Who or what is the main character? (For example, a boy, a girl, a horse or a piece of fruit?)
- 2 Describe the main character: what is she wearing and doing?
- 3 The main character is going on a journey: where is he going?
- 4 Who or what is with the main character?
- 5 Along the way, something bad happens: what is it?
- 6 Who or what comes to the rescue?
- 7 The rescuer is magical. What powers does he have?
- 8 Something happens that stops him using his magical powers: what is it?

- 9 The main character does something to help the rescuer: what does she do?
- 10 A very strange thing appears: what is it?
- 11 The main character has nearly arrived but what stands in her way?
- 12 How does your main character reach her journey's end, and how does she celebrate?

4.8 FORTUNATELY, UNFORTUNATELY

Main thinking skills:

- Generate ideas.
- Give suggestions.
- Make connections.
- Seek further details.

Activity

This storytelling activity alternates between fortunately and unfortunately. Sit with your children in a circle. Set the scene by beginning a story. Then invite the child sitting to your left to continue the story. They should start with 'Unfortunately, . . .'. If you are working with younger children, they could begin with 'But . . .', and the game will still work. Once the first child has given his idea, the child to his left continues the story. This time, she should begin with 'Fortunately . . .'.

The story continues, all the time alternating between fortunately and unfortunately. Here is an example from a group of five- and six-year-olds recently:

- You: Once upon a time, there was a horse called Sue.
- Child 1: But (unfortunately) . . . he didn't like being called Sue.
- Child 2: But (fortunately) . . . he was allowed to change his name to Harry.
- Child 3: But (unfortunately) . . . Harry was not a happy horse. He didn't like carrying people.
- Child 4: But (fortunately) . . . Harry was owned by Tina who was very small and very light.
- Child 5: But (unfortunately) . . . Tina's big fat brother jumped on top of Harry and hurt his back.
- Child 6: But (fortunately) . . . Harry was a strong horse and threw Tina's brother off his back and ran away.
- Child 7: But (unfortunately) . . . Harry met a dragon on the way.
- Child 8: But (fortunately) . . . the dragon was a friendly dragon who just wanted to be friends with Harry.
- Child 9: But (unfortunately) . . . every time the dragon opened her mouth, she would breathe fire at Harry.

NOW TRY THIS

Pick one of the games shown in this chapter to play with your children. Ask a friend or colleague to observe the activity so that afterwards the two of you can talk about what you observed and what thinking skills you thought the children were using. Also reflect on what could be done to improve or adapt the activity for different children.

4.9 CHAPTER SUMMARY

This chapter has covered the following main points:

- 1 We can help children learn *how* to think even better than they already do.
- 2 Routine thinking includes everything that we do almost subconsciously, for example, walking, sitting, breathing and dreaming.
- 3 Reflective thinking includes thinking about options and alternatives, consequences and assumptions, sorting and classifying and so on.
- 4 Teaching children how to think focusses primarily on improving reflective thinking.
- 5 There are many skills of thinking that we can help young children to develop and enhance; these include estimating, evaluating, giving reasons, connecting, organising, predicting, and questioning.
- 6 Thinking skills are never learnt in isolation; instead they are best learnt in an environment that promotes positive interactions and opportunities for imagination, creativity, reflection and metacognition.
- 7 There are eight thinking games in this chapter. All of them can be adapted to challenge or support, depending on the developmental stage of your children.