

Developing Thinking Skills in the Young Learners' Classroom

by Herbert Puchta



Looking into a classroom

“ Christopher isn't easy to teach. He finds it very difficult to focus his attention for more than a few minutes. Even when he's enthusiastic about something, he loses interest in it as soon as he is supposed to tackle a task that is only slightly more challenging than he can easily cope with. We are not talking difficult tasks at all – it's just that he seems to want to avoid failure, and therefore quickly loses interest in whatever he is supposed to be doing.

In consequence, he doesn't achieve the results he would like to achieve, and he gets frustrated. He's also quite impulsive – he reacts without thinking, especially when he's annoyed with one of his classmates. Then he can become quite angry, and even aggressive. When I try to talk to him afterwards, he apologises, but it seems that he doesn't really understand that he gets himself and others into trouble by not thinking of what kind of consequences his behaviour might have.

”



“*Sophia is the complete opposite. She’s calm and focused, and when she gets interested in something, there’s nothing that can stop her, not even when she doesn’t know how to do things. She’ll ask me questions, and she tries hard to understand my answers. If she doesn’t know how to solve a task immediately, she’s persistent and keeps trying. I can feel that she really wants to learn, and that she believes she can succeed in the task even if things get difficult. So she’s one of the best learners in my class. Sophia’s also very popular with her classmates, both boys and girls. I think that’s to do with the fact that she’s a good listener.*

She’s interested in others, asks them questions, and helps them when she notices that they need something. It’s good to have her in the class, as well, because she’s got a good sense of humour and surprises me and the other kids frequently with her creative ideas.”



If you are a teacher of young learners, then you’ve most probably come across children like Christopher and Sophia. And you may have wondered what it is that makes them so different from one another. An easy explanation would be that Sophia’s just much smarter than Christopher, and hence achieves better results. In consequence, she might be more motivated to learn and is also much more efficient in dealing with other people. Christopher on the other hand, one might think, is less talented. He doesn’t have what it takes to become a good learner. He lacks the skills that Sophia shows, so things for him just don’t go as smoothly as they do for her.

What makes successful people?

Even extremely successful people are not successful because they were born geniuses; top entrepreneurs, artists, sports professionals and inventors are not usually born as peak performers. It seems that what sorts out successful people from the less successful ones is a high level of engagement, an interest in 'getting it right', patience and persistence. They seem to have the drive to keep trying in spite of failure, and they show a non-judgemental attitude towards their own mistakes – in other words their self-image doesn't suffer when they don't immediately find an answer to a problem. 'This is not easy. I need to think so I can solve this problem,' said Sophia when confronted with a challenging task. 'But that's fun. Thinking and finding answers to problems is fun.'

This is not to say that top performers might not have some natural talent that makes it easier for them to excel in whatever it is they are doing. But talent without persistence often leads to long-term failure or at least underachievement, whereas high levels of engagement and persistence can to a certain extent make up for a lack of talent, and over a longer period of time lead to positive learning experiences, a growing sense of achievement and ... success!



Thinking requires development

The development of cognitive capabilities in many ways follows the same principles. Robert Fisher, a leading expert in developing children's thinking skills, says that thinking is not a natural function like sleeping, walking and talking. Thinking, he stresses, needs to be developed, and people do not necessarily become wiser as they become older. Some children are lucky because they learn important thinking skills from their parents or other people. This works especially well when parents take the child seriously, engage them in meaningful conversations, inspire their imaginations, ask them questions that get them to think and so forth. Other children are less lucky as they do not have such a nurturing environment that fosters their cognitive development. However, both children from brain-friendly families and others who come from less supportive contexts, will profit significantly from a teaching methods that takes the development of their thinking skills seriously.

The philosopher Matthew Lipman noticed a lack of reasoning skills in many children, and started a movement to involve children in philosophy, an approach that has spread to many countries of the world. He used the following metaphor to stress the need to systematically develop a child's thinking skills: when we compare a car mechanic with an average person who could never repair their own car, the difference is not that the car mechanic knows how to use tools such as a hammer, a screwdriver, pliers, or a wrench. Most average people know how to do that too, yet they would fail hopelessly if they were to try to repair their car engine. What's different between them and the car mechanic is not the knowledge of how to use a hammer, a screwdriver or a wrench. What the car mechanic knows, and what average people don't, is how to sequence the use of these tools in a way that leads to the planned outcome. The car mechanic knows what they are doing, and why they are doing it; and when what they are doing does not give them the planned outcome, they keep trying to come up with alternative strategies that are bound to lead to eventual success.

Applying thinking skills

The same is true of cognitive skills. So-called higher-order thinking skills – such as problem-solving – are not completely different skills from the lower-order ones, but are merely a combination of those basic skills used in a specific way. When we try to solve a problem, we first of all need to observe carefully what the 'symptoms' of the problem are. We need to use our senses in an accurate way to do that, focusing on what we can, for example, hear and see. We need to have the ability to focus our attention over a longer period of time, and we need to set ourselves a goal. We need creative skills and the ability to look at a problem from different perspectives, and we need to think carefully what outcomes a planned chain of actions might possibly result in. We need to come up with alternative strategies if what we are planning to do turns out to be the wrong strategy. When we have finally decided on what to do and how to go about it, we need to be able to evaluate what we have done and, if necessary, go back and undo what we've done or apply an alternative strategy.

When children get used to systematically applying their thinking skills, they will go through positive learning experiences, and they will gradually learn to enjoy more challenging tasks. As a result, their self-confidence will grow.



Thinking skills: three models

There are many different models aimed at explaining what the thinking process consists of, how children's thinking skills can be developed and what we as teachers can contribute to their development. I would like to briefly present three of these models, and discuss how they can be applied in the foreign language class, so that learners' cognitive skills can be developed alongside their foreign language skills and competencies.

Model 1: Language and the development of cognitive tools

This model, developed by Kieran Egan on the basis of Vygotsky's work, stresses the focal role that the child's language development plays in understanding the world through the use of language-based intellectual tools or capacities. The teaching of literacy, according to this model, can be made more efficient through our understanding of the concept of cognitive tools and through applying these insights to what we do in the classroom. It's not difficult to see that this model – although designed for mother-tongue literacy development – has significant relevance for the foreign language class as well.

Egan (1997) postulates that a person's intellectual growth happens naturally, through the acquisition of certain intellectual qualities (he calls them 'developments') deeply rooted in our cultural history. In order for an individual's intellect to grow appropriately, the development of certain 'cognitive tools' is essential. Here is a very basic summary of his insights which are relevant as a basis for understanding how the human mind develops during childhood.

Rhythm and rhyme

In pre-literate days, people were expected to have the ability to remember pieces of text of sometimes epic length. Rhythm and rhyme were important mnemonic devices in that process. In the same way, it is through rhythm and rhyme that children start remembering chunks of language from an early age, and they usually develop enormous joy through repeatedly hearing (and later speaking along with) the same rhymes over and over again. This way, children begin to develop an understanding of patterns – the sound patterns of language first – and form the cognitive tools needed for the understanding of structures.

Images and imaginative thinking

For the young child, there is no borderline between reality and imagination. If the teacher uses a glove puppet, to name one example, a six-year-old recognises it as a puppet, and yet, as soon as the puppet starts 'talking' (through the teacher's voice of course), the child goes into a dreamlike state of mind – and is convinced the puppet has become alive.

Such imaginative processes lead to the creation of images in the child's mind. This is important, because understanding oral (and later written) language requires not only knowledge of words, but also the ability to create and use mental images, enabling the learner first to understand texts in the foreign language better and later to recall more information from these texts. There is clear evidence that learners who are at ease with creating lots of images while listening to (or later reading) a story, for example, remember more language from the story.

Story thinking

Egan points out that stories play an essential role in the cognitive development of children. He stresses that the story form is something people in all cultures enjoy. Stories, however, function as more than mere entertainment – they help the child develop an understanding of the world and their own life experiences.

But a word of caution seems appropriate; there are certain criteria that a piece of text needs to comply with in order to qualify as a story – and more often than not in language teaching materials we come across a so-called story that just doesn't deserve to be called that. Here's an imaginary (and exaggerated, I hasten to add) example. We have a story in which we are presented with a boy and a girl, Annabel and Oliver. They greet each other in a friendly way and introduce themselves to each other. Then Oliver introduces some of his family; *this is my uncle, James, and that's my aunt, Emma.* (We can see Aunt Emma, by the way, standing on the other side of a nearby river, which is fortunate, as it helps to justify the deictic use of 'that'.) Annabel wants to follow suit, and luckily she has her brother and her sister at hand; *this is my brother, Benjamin, and that's my sister, Kylie.* It seems that such excessive social protocol makes both of them hungry ... otherwise why else would Oliver then say; *now let's eat this cake.?* Luckily, Annabel knows better: *no, let's eat that cake.* The 'story' evolves further with the two kids suggesting and counter-suggesting a number of other food items, and it comes to a bizarre round-up when Benjamin suggests they should have an ice cream, leading to Annabel's final utterance, the warning; *but don't be greedy.*



What is called a story here is anything but – and we can easily prove that if we use Egan’s criteria for the kinds of elements a story needs to contain in order to engage the young listener or reader. First of all, a story needs to engage the reader or listener emotionally, and in order to do so it needs a clear beginning (setting the scene), a middle part (where things develop in an unexpected way, leading to conflict and hence emotional engagement) and an end (where the conflict gets resolved). The story only works if there is some kind of tension – an unexpected turn, a complication of the plot, a surprise element, or something that shocks the reader or listener, making him or her feel worried, sad, etc. For that, we need what Egan calls binary opposites that create strong emotional contrasts, contraposing concepts such as *good* and *bad*, *rich* and *poor*, *happy* and *sad*, *tiny* and *huge*. So if Oliver has a dog that gets bitten by a poisonous snake while he is involved in his social chit-chat with Annabel, the reader or listener finds themselves in a story all of a sudden. *Will the dog survive? What will the children do? Are they themselves in danger?* are some immediate thoughts that show the reader’s or listener’s engagement. The protagonists, however, don’t have time to consider these questions at length. As soon as they begin to understand how serious the situation is, Annabel remembers her aunt, a wise old woman. When the children seek her advice, she suggests they go to a place high up in the mountains where they can find a tree with golden apples, one of which the dog should eat. They manage to find the tree and the dog is saved.

It’s not difficult to imagine which of the two versions of a story will engage children more. But unfortunately, when ELT authors create stories they all too often have language alone in mind. Story relevance doesn’t seem to matter, because the ‘story’ is seen merely as a vehicle for the language. In our invented example, the language elements which the author wants to pack into the story are deixis (*this and that*); making suggestions (*Now let’s eat this cake.*), and making an alternative suggestion (*No, let’s eat that cake.*). But it’s not difficult to guess that that text will fail to gain the attention of the learners and because there is nothing memorable about the story, little of its language will remain in their memory.

Stories, Egan stresses, communicate information and at the same time help us to understand how to feel about it; and that’s why they are so powerful – more

powerful than any other form of language. Only stories can have such lasting effects on the recipients, and that's why we use stories all the time in real life to convey meanings. We use stories to impress others, to make friends, to justify behaviour and give reasons for it, to influence people, to support and to entertain.

Humour and small talk

Using humour in the foreign language class is more than having something to laugh about, and engaging in small talk is not just an exchange of linguistic formalities – both are actually very important for the development of the child's cognition. Children love jokes, and trying to understand jokes and punch lines is often the child's first attempt at thinking about language. The ability to understand double meanings, puns and word play are important building blocks of the child's cognitive development, as is the ability to engage in small talk. The latter has an important social function and that is why children need to learn to take part in it. However, successful participation in small talk situations is also important because it strengthens the child's self-image and gives the child a feeling of social security and acceptance. Being accepted by their teacher and classmates is an extremely important experience for the child, and at the same time it is a precondition for developing social relationships and friendships.



Model 2: Multiple intelligences

Through his pioneering research into human intelligence, Howard Gardner, professor of education at Harvard University, has clearly shown that there is no such thing as a single unitary mental capability that can be called intelligence, but that there are instead multiple intelligences (MI). He argues very convincingly that IQ tests and schooling in general usually assess just two of the human intelligences, the linguistic and the logical-mathematical. Gardner, however, proposes eight different intelligences, accounting for a much broader spectrum of human capabilities that our thinking skills draw on:

Intra-personal: self-smart

Inter-personal: people-smart

Logical-mathematical: maths-smart

Linguistic: language-smart

Musical-rhythmic: music-smart

Visual-spatial: picture-smart

Kinaesthetic-bodily: body-smart

Naturalistic: nature-smart



MI in the ELT classroom

One could argue, of course, that EFL primary classrooms have, to a certain extent, always been MI ones. However, we need to be careful not to mix up multi-sensory teaching with MI teaching. In other words, using pictures in the foreign language class is not necessarily about teaching from the visual-spatial intelligence any more than singing a song with the children will automatically activate their musical-rhythmic intelligence. As Gardner said in an interview (*Edutopia* 1997):

'I remember seeing a movie about multiple intelligences and there were kids crawling on the floor and the legend said 'bodily-kinaesthetic intelligence'. I said, 'That's not bodily-kinaesthetic intelligence, that's kids crawling on the floor. This is making me crawl up the wall! [...] to have kids crawl or exercise their vocal cords, that's not intelligence.'

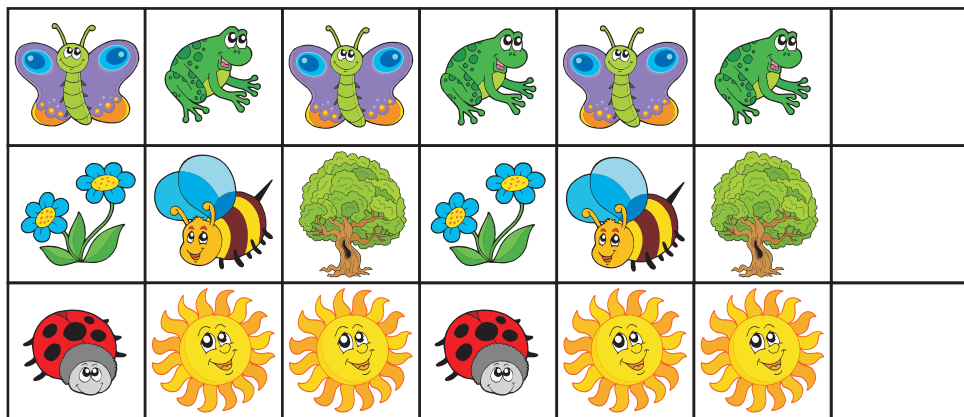
In the same interview, Gardner stresses the importance of deciding what our educational goals are, and – once we have determined what they are – considering how we can help our children achieve them better. The concept of MI cannot itself be a goal any more than singing a song, using pictures, getting learners to move around the classroom, etc. – but it can help us achieve our goals better. If my goal is, for example, to revise a lexical set with a beginners' class of six-year-olds, I can do this in various ways. Below is one suggestion that you might want to try; it is based on MI

thinking and while it is an interesting and highly motivating activity for those kids whose mathematical-logical intelligence is in good condition, it is in fact useful for all your learners since it helps develop important thinking skills at the same time as working to accomplish your goals.



An example - lexical revision through logical sequences

Let's assume the words you want to revise are *butterfly*, *frog*, *flower*, *bee*, *tree*, *ladybird* and *sun*. Draw logical sequences, as below, of the words you want to revise on the board or give each learner a photocopy of them.



Read the first row out together with the learners rhythmically:

butterfly - frog - butterfly - frog - butterfly - frog

Elicit the missing word (*butterfly*) and ask them to complete the row by drawing a picture of the missing word. Give them a few minutes to complete the other rows. If they cannot complete the patterns, get them to talk to at least three other children about their solutions and why they have come up with them. These discussions will naturally happen in the children's mother tongue. When they have finished, ask two children to read out the solutions to the class so that they can all check.

Ask them to put numbers against the rows: 1 against the top row, 2 against the one underneath and 3 against the bottom row. They then put their worksheets on their desks face down.

Ask a learner to read out any one of the three rows. When they have finished, the others turn over their worksheet and say which number they

believe the row was. Repeat the activity several times. Then challenge learners to see if they can tell which of the rows has been read out without looking at the worksheet. Give them about a minute to look at the worksheet and try to memorise the rows before they put it face down on the desk again.

Next, hand out a paper strip with a copy of three empty rows to each child and ask them to create their own logical sequences, using any of the words they know in English that can easily be drawn. (Alternatively and with slightly higher level classes, learners could also write the words.) Tell them to leave one or two frames free in each row. Collect all the paper strips in, and repeat the activity using the children's own logical sequences.

Developing cognitive processes

When you regularly use activities like this in your class, you will notice that children gain confidence in figuring out how a task works. If guided properly – will develop an attitude that can best be summed up with what one child in an MI classroom said, 'Ah. That's not easy. I need to think first!' At the same time, there is a clear language gain – in this case, revision of a lexical set. But there is more to it. If you work on children's thinking skills on a regular basis, the development of their thinking skills will also enhance cognitive resources that support the child's language learning.

To return to the example activity, we can say that in order to understand patterns the logical-mathematical competencies are needed. So what we are developing through this simple activity is a basic skill that is going to be called into action again later on, when the child is required to understand the patterns of language. Any metalinguistic task that learners might be asked to engage with later in their language learning process is likely to require this and other basic cognitive skills, e.g. noticing patterns, drawing conclusions, hypothesising and verifying one's hypotheses. These cognitive processes are needed later in the language learning process. An example is the type of task that asks learners to notice grammar phenomena and try to come up with rules describing them. To do this, learners need to do exactly what has been described above – i.e. noticing linguistic patterns, and trying to find the rules that govern them – by making hypotheses and verifying or disproving the rules they have come up with.

Model 3: Combining the teaching of thinking with language teaching

Based on Feuerstein's Instrumental Enrichment Programme and the work done by Blagg and his associates (2000), my colleague Marion Williams and I (2011) have developed a model of thinking skills work that takes into account the specific needs of the foreign and second language class. Our approach incorporates two significant advantages. First, activities that are meaningful and at the same time intellectually challenging are more likely to achieve a higher level of cognitive engagement from learners than those ELT activities that can be somewhat over-simple from a cognitive point of view. Secondly, the tasks we have developed have a real-world purpose; examples include problem solving, decision making, thinking about the consequences of one's own or other people's actions, and so on.

As happens every day in our personal and professional lives, each of these real-world purposes requires a combination of thinking skills. When there is a problem we need to solve, we first of all need to assess what the actual problem is. We need to use our senses in order to get an accurate idea of what the problem is before we can start thinking of possible solutions. Once we know what the problem encompasses, we then need to envisage clearly the objectives we want to achieve, and how we can get there. In order to do that, we need to think of the consequences of possible scenarios or actions, and when we get stuck we need to think creatively (and often 'out of the box'). Finally, we need to be able to evaluate our actions.

Activity types to develop thinking skills and language

We have developed 13 categories of activity that help with both the development of the learners' thinking skills and their language. They roughly follow a cline from basic to higher-order thinking skills:

Making comparisons

Categorising

Sequencing

Focusing attention

Memorising

Exploring space

Exploring time

Exploring numbers

Making associations

Analysing cause and effect

Making decisions

Solving problems

Creative thinking

An example activity

Let's look at an example from the category 'Making decisions' that demonstrates how closely thinking and language work are dovetailed in our approach.

In the activity *Who's got an idea?* learners get a worksheet showing eight situations. The learners are asked to look at the pictures and think about what the problem in each picture is and what the people in the various situations should do. Here's an extract from one of the classes that piloted our materials:

T: What about picture one? What's the problem?

S1: Vase. The boy playing in the house and vase break.

T: Uhuh. The boy was playing and he broke the vase.
(writes it on the board)

S2: The mother angry.

T: OK, you think the problem is that the boy's mum's angry. (writes it down) Where's the mother?

S2: She come in a minute.

T: OK. Any other idea?

S3: Yes, the cat break the vase.



T: I see. So the boy found the broken vase on the floor. The cat broke it.

S4: Yes, the problem is that the mother say the boy broke it.

T: You think the boy's mum doesn't believe it was the cat that broke the vase. I see.

We can see that the learners are fully engaged in thinking about what the problem is. The teacher facilitates the learners' language by helping them to express what they want to say, and by clarifying meaning rather than reacting to the way they say it. This is an important step and prepares the class for the next phase, when learners will make suggestions about what the boy in this situation should do. Learners then think about which of the suggestions made is the best one and give their reasons.

It is easy to see how this approach helps with both the child's cognitive and linguistic development and at the same time gives the teacher plenty of opportunity to take the learners seriously. This in turn sends out very important messages to the learners, enabling them to develop feelings of competence and serious involvement in their work.

The classroom discourse that arises from this work creates the need for 'scaffolding'. The teacher listens and as the language emerges, supports the speaker in a positive way, as well as helping the other learners to understand what the speaker is saying.

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Dr Herbert Puchta is a full time writer of course books and other ELT materials and a professional teacher trainer. For almost three decades, he has researched the practical application of cognitive psychology in EFL-teaching and has co-authored numerous course books and resource books including for Primary: *Playway to English* (Cambridge-Helbling), *Join In/Join Us* (Cambridge-ELI), and *Super Minds* (Cambridge); and for Secondary: *MORE!* (Cambridge-Helbling) and *English in Mind* (Cambridge).

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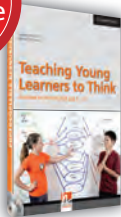


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