

TRANSCRIPT - Introduction to metacognition

Hi and welcome to this introductory video about metacognition. I'm Vicky Crane and I'm your course tutor.

Before you start watching this video you need to make sure you can pause the video at various points to think, to make decisions and if you are working with a group of colleagues in order to have time to discuss. You need to have a note pad and pen or a few post-it notes to hand. You also need a pack of shuffled playing cards. You only need eight random cards from the pack so if you are working with other colleagues, you will be able to share a pack of cards. If you are working alone and don't have access to a pack of cards, you can download a file directly below this video clip on the course website. If you don't have these items to hand now, pause the video at this point and collect them.

Metacognition is thinking about thinking. And as educators we are interested to consider how thinking about thinking might improve thinking and learning. Improving metacognition increases self-awareness and in turn our ability to engage in self-regulation and self-monitoring. We want to use thinking about thinking to make self-improvements. It's almost like we can step outside of our bodies and see our own thought processes and action taking place. When we do this it means it we can analyse what we are doing, reflect and evaluate our actions, make decisions that impact on immediate outcomes and contemplate next time how we might do things differently. We can literally increase our chances of success in all the tasks and activities we engage by using metacognition and being metacognitive. Metacognition is not easy to see as it is often in the form of an inner dialogue. You are probably not even aware of all the times you are actually engaged in metacognitive thought. We can increase our knowledge of metacognition and use this to become more metacognitive and more aware of when we are being metacognitive. We can improve our knowledge of when others are being metacognitive and the level of metacognition that they might be engaged in.

We are going to carry out an activity to help us think about metacognition.

How good are you at making decisions? On a scale of 0-10, with 0 being terrible and 10 being fantastic, how would you rate your decision-making skills. Pause the video at this point and write down the number.

How easy was it to rate yourself? Some people might have immediately started to analyse the question. What is meant by decision making skills? It might be that you recognise that not all decision making is the same. Is it an important decision? Is it a complex decision, perhaps one with many different options to choose from? Is it high-stakes decision that has important implications? Is it a decision that you have to make quickly, or one that you can ponder on? Is it a simple decision, such as would you like a cup of tea? When considering your ability to make decisions, you might rate yourself differently depending on the type of decision-making being undertaken. For example, you might rate yourself highly on making long-term, important decisions but not necessarily good at making decisions quickly and calmly in a crisis. Thinking about decision making and your ability to make decisions is metacognitive. Our ability to make judgements about our own thinking is metacognition. Therefore, you have just been metacognitive. If you are working with others, pause the video at this point and share your decision-making process for 'are you good at making decisions.'

Ok, so we have thought about our decision-making skills and now we are going to put them into practice. You are presented with the option 'drink me'. Do you decide to drink the contents? Pause the video here to consider and restart once you have made a decision.

What did you decide to do? How long did you think about it for? What influenced the amount of time you spent thinking about it? Perhaps you didn't think about it for very long because you realised that it is a hypothetical question. Perhaps then amount of time spent thinking about it or the processes you engaged in to help make a decision might be different if you realised you actually had to carry out the choice. The amount of time you spent thinking was a metacognitive judgement. You decided when you were ready. Or perhaps some factors came into play that cut short the amount of time you spent thinking, and you are aware that the limited time might be detrimental to the quality of thinking. Again, that's a metacognitive thought. Lots of pupils don't recognise the point at which they are 'ready' - at what point they have reached 'readiness' and therefore allocate too much or too little time to elements of thinking or task completion. Some pupils don't recognise that there is often a point at which the amount of time committed to a task provides diminishing returns and it might be better to stop even if a task or thinking process is not complete.

What did you think about when making a decision? Lots of pupils think everyone thinks in the same way. If you are watching this video with other teachers, pause now and consider what factors you were considering when making the decision as whether to drink the potion. If you are watching this video on your own, pause now and reflect on what factors you took into consideration.

What did you draw on when making a decision? Perhaps you recalled warnings as a child that somethings could be poisonous. Perhaps you thought about stories you have read such as Alice in Wonderland. Perhaps you thought about what else you wanted to know before making a decision. Recognising that you have incomplete information is a metacognitive action. Perhaps you jotted down a series of questions that you would ask. Perhaps you thought about what actions you would take – such as checking the back of the label, examining the bottle, looking underneath - recalling perhaps a past experience of trying to decide what was in a bottle. Perhaps you thought about the motives there might be for drinking the contents. Is there a goal? Perhaps you thought about in what situations you might make a different decision and thought through some different scenarios. Well, I might drink it if I was dying of thirst, I might drink it if I was Alice in Wonderland, I might drink it if I had been given it by someone I trust.

Whatever decision you came to, how do you know it was the right decision? How do you know that the processes you used to reach the decision were inferior to those used by others, the same as those used by others, or better than those used by others? It is unlikely that you could answer that question without first knowing the strategies that other people had used. How might allocating lesson time to pupils talking about thinking and sharing the thinking processes they have used actually improve the quality of thinking? Lots of pupils think everyone thinks in the same way. How might reflecting on thinking help pupils to make judgements about the quality of their own thinking and gain new ideas about how to improve? Pause the video here to consider the power of having time to talk and think about thinking and what it might reveal to you if you could listen in on those conversations about the thinking processes, processes that are often hidden because they are contained inside a child's head. If you are working with other colleagues, pause now to discuss.

Do you think you can improve your decision making skills? What would you do if you were tasked with improving your decision making skills? Do you think everyone has an equal ability in making decisions? Do all children have good decision making skills? Think about the pupils in your class. Which ones would you rate as being good at making decisions and which ones would you rate as

being poor at making decisions? Do you think you could help them to improve? Metacognition includes the attitudes and beliefs that individuals have about their ability to improve. If you don't think that you can improve, it is unlikely that you will try to improve, it is unlikely that you will engage in reflection activities or consider very carefully the thinking processes that are used. If you think that decision making is a talent that you are born with, then there is no point stopping to analyse what you are doing right or what you are doing wrong or trying to make improvements if it is already pre-determined. But, if it is something that we can change and improve on, then it is worth spending time reflecting on, unpicking, analysing, and working out how to be better at it.

Ok, let's try another activity. How would you rate your memory on a scale of 0-10? I'm going to make this easier for you this time and say we are thinking about short term recall memory. Write down on a post-it note or a piece of paper how good you think your memory is with 0 being terrible and 10 being fantastic. Pause the video until you have completed this activity.

Ok, let's test out the accuracy of your judgement. I want you to memorise the numbers that you see on the screen. You can use any strategy you like to learn the number. I then want you to turn away from the screen and write down the number, then look back and see if you were correct and think about the strategy you used to memorise the numbers. If you are working with other colleagues, pause the video and discuss the strategies you used to memorise the numbers. Ok, pause the video here to look at the numbers and then write down, when you think you have learnt the numbers, write them down.

What strategies did you use and were they effective? Did you memorise the number correctly? Perhaps some of you chunked them into pairs. Perhaps you cut the numbers into two halves. Perhaps you told a little story – my daughter is aged 3, I used to live at 64 Riverside Walk and my sister was born September 72. Perhaps you sang it like a little radio jingle for a business telephone number or perhaps you repeated it in your head over and over again saying it to yourself. Perhaps you wrote it down or wrote it down to check that you could remember it – you tested yourself. Perhaps you used more than one strategy. Lots of pupils think everyone is using the same strategy. They don't think about if they have a successful strategy or a poor strategy and whether or not they should change it. Some children have a lack of strategies to choose from in their mental toolbox. Part of metacognition is reflecting on the strategies you have available to call on, the appropriateness of the strategy for the task, noticing when to change the strategy if it is not working, evaluating the success or otherwise of the strategy at the end and maybe altering things for next time around. Sharing and talking about the strategies used is therefore an important element in metacognition.

For this activity, you need a set of shuffled playing cards. Take 8 random cards from the pack. I want you to think about all the different strategies that you could use to learn the cards. What different strategies can you think of? If you are working with other colleagues, pause the video at this point to consider the different strategies that could be used. When you have discussed or thought about the strategies, I want you to choose a strategy and test it out by learning the 8 cards. When you think you have memorised all the cards turn them face down and write down the names of the cards to test whether or not your strategy was successful. Pause the video here so you can take the time you need to complete the task.

Pupils need a range of effective strategies to choose from for learning. No matter what the task is, they need strategies to help them achieve that goal. So if it is revising for a spelling test, they need strategies to learn spellings. If it is a maths problem, they need strategies to attend to maths problems with. If its reading, they need strategies for reading. If they have a bank of effective

strategies to call on, they are more likely to make good choices and that will result in better quality outcomes. But children often don't look carefully enough, analyse enough or evaluate enough the strategies that they are actually using. If performance isn't good, they often don't think about changing the strategy. So a child who gets four out of 10 repeatedly in a spelling test, just thinks that they are 'rubbish' at spelling, they don't think 'Ahh, actually, I need a better strategy'. They don't talk to other children about the strategies that they are using to learn the spellings. And they don't think about all the different variables that might go into it such as how long did you spend trying to learn the spellings, how many times during the week did you go back to the spellings, in what environment were you trying to learn the spellings in – was it a noisy environment for example? A child who gets 10 out of 10 repeatedly in spelling tests, might also actually have difficulty if they are not metacognitive because they might find that when presented with a more challenging task, maybe they have to learn a wider range of spellings or perhaps there is no pattern to the way the spellings are presented, that they find their strategy doesn't work, and at this point they can go into 'meltdown' because they are not used to facing that situation where they have not been successful and having to change their approach. So, whether the children are currently successful, they still need to be more metacognitive. They need to think about what aided them and will that work next time? What can they learn from being successful and how might they apply that to new tasks? We can teach children more strategies and we can help them to evaluate and reflect on the strategies at the end of a task.

So, what might a highly metacognitive child look like in the classroom?

They think about the task they have been set. They unpick it, decipher it, analyse it, create a really clear picture in their mind about what they have to do. They understand what they are trying to achieve and what a good solution will look like.

They know a range of learning strategies and how to combine them together. They can pick the ones that will match the task.

They can plan. They think about what equipment they'll need, what resources will be helpful. They might even consider if it is better to work in a group, in a pair, on their own, perhaps in a different environment, a quiet place. They'll think about how long each part might take and perhaps which is the most complicated part of the task. They decide where to start.

They monitor their work as they go along. They think about strategies for getting unstuck. They keep thinking about the task and the success criteria – they go back to it. They look at what other children are doing – thinking, 'Am I on the right lines?' They are asking themselves hundreds of questions as they work and modify their approach as necessary. They are problem solving all the time.

At the end they check their work. They stand back and consider the work as a whole. They look at the success criteria, they think about good examples, they identify the strengths and think about any improvements, they evaluate the end product, and they think about what they have learnt.

They also think about the strategies they've used, their time management, their effort levels, their concentration and all the other variables that go into creating a successful performance. What worked and what didn't? If they were to approach this task again, what would they do differently? They evaluate themselves as a learner and think about how they can get better at actually learning. The processes are just as important as the end products.

They see themselves, therefore, in control of their own learning. They are aware of how their brain works. They know learners can improve their effectiveness and efficiency. They have a growth mindset so that they tackle things with resilience and determination, but also have an analytical approach and are open, for example, to feedback. They realise that it is not just about hard work that takes learning to the next step, but also about being much more strategic in their approach to thinking about improving as a learner. They reflect on their mistakes, and they think about what went well.

To help us develop metacognition in the school, we can use some frameworks to help us. We can think about children's awareness, knowledge, skill, reflection and effectiveness in four strands: person variables, task variables, declarative knowledge, strategy variables.

Person variables cover all of the pupil's attitudes and beliefs to learning, including what they recognise as their own strengths and weaknesses in learning and in thinking and in processing information. Metacognitive learners are able to step back and look at themselves and consider what they are thinking and doing. They are able to accurately assess, both in terms of the big picture and in terms of everyday lessons, and they use this to make many adjustments to learning. They are aware of the types of factors that influence the success or failure in learning and they realise that there are different degrees of understanding. They can think about their own preferences to learning, their beliefs about how people learn, and are open to experiencing new ways of learning. It is the degree to which they also believe that they are agents of their own thinking and learning. If they believe they can improve, they'll be motivated to improve, and they'll be more open to analysing the processes involved in learning. Person variables include how open a child is to changing their approach. Some children, and adults for that matter, get the same poor outcomes again and again because they are unwilling or unable to change their approach. They might be clinging to an old method that was previously successful and despite the fact that the nature of the task has changed they are still trying to use the same approach.

Task variables. These are all the things that the pupils know or can figure out about the nature of the task and the processing demands. Is it a simple task or a complex task? Is it going to take a short amount of time or a long amount of time? They recognise when demands of processing might be more challenging. So, for example if they are a complex, technical article they might realise that its going to take more time for them to read than say a similar length passage from a novel. They might also think that they might need to read the technical article more than once and need to ask questions. Pupils' knowledge bank about different types of learning task grow and develop with age, experience, reflection and support from teachers.

Metacognitive declarative knowledge is bringing points 1 and 2 together. They know their own thought processes, their own strengths and weaknesses, they know about learning in relation to a particular task, they learn from their experiences, they break down the task itself and then they use those to think about the strategy and approach they are going to use.

Strategy variables are all the approaches that a child has at their disposal to apply to a particular task. It's their problem solving ability, its their reading skills, it's their revision techniques.

Metacognitive learners not only know effective strategies for learning, but they know when and why and how to apply those strategies. They evaluate their use of different strategies.

Within that framework we can think about metacognitive knowledge, metacognitive monitoring and metacognitive control. So, what do they know about how learning operates? What do they know about how to improve learning? What do they know about how other people learn? What do they

know about elements such as memory? So knowing more about metacognition, knowing more about learning will help children to become more metacognitive. We also need to help children engage in metacognitive monitoring. Judging if they have understood something, thinking about the internal questions that they ask themselves as the task progresses, constantly assessing progress towards the goal. And we need to make sure that children see themselves in control. Control of their own learning, control of how effective they become as a learner, control of the approach that they are taking, so perhaps changing the tactic that they are using to solve a problem or deciding on a resource they need. They need to be proactive in their learning.

In the classroom we can facilitate metacognition. We can model our thought processes as we complete tasks. We can create conditions in which metacognition can thrive. We can weave metacognition into our everyday practice, our everyday teaching and learning. We can create an ethos in our classroom that is metacognitive. We can help children to recognise when they are using metacognition. We can explicitly teach elements of metacognition. We can improve pupils' awareness of what it is to be metacognitive. We can teach children how to be more metacognitive. Everyone, adults and children, can improve their metacognitive skills. This is one of the fantastic things about metacognition. Everyone can make improvements to the way that they are metacognitive.

We can judge the success of our implementation in many ways. So we could break it down into some of the areas that we have just talked about. We could think about to what extent we've created that metacognitive classroom with the ethos that we are looking for and the philosophy in which teachers integrate metacognition into all their practice. We can think about if teachers are using very practical actions to develop metacognition such as think alouds, reflection techniques and teaching of strategies. And we can assess the extent to which pupils are becoming more metacognitive. We can think about how we are promoting metacognition and how that is influencing children's attitude and beliefs about learning. We can evaluate the changes they are making to their own learning and their levels of reflection. We can also look for the knock-on impact, for example higher grades, improved outcomes, increased levels of confidence, improved independence, higher levels of engagement, increased collaboration, greater levels of resilience, increased success at problem solving, etc.,. It's an upward spiral, an ever-increasing circle of effectiveness.

I hope you have found this introductory video both informative and engaging. A comprehensive course follows this introductory video that will help you to implement metacognition throughout the school. I wish you, and your pupils, every success.