

# Thinking Skills Approaches

What do effective FE teachers do to promote learner learning?



# What do we mean by Thinking Skills?

- Thinking Skills is a method used by FE teachers to challenge their learners to:
  - extend their understanding
  - use their imaginations
  - transfer learning across situations
  - and, above all to think for themselves
- It is sometimes referred to as ‘cognitive acceleration’
- This summary is based on 30 studies that formed part of the Behaviour for Learning Anthology



# How have thinking skills approaches benefited learners?

- Learners have benefited from acquiring thinking skills knowledge by:
  - development's in higher order thinking skills amongst gifted and talented students
  - accelerates the development through even deeper levels of thinking and learning



# Which techniques develop learners' thinking skills?

- Over the past 20 years there has been considerable research in how learner thinking skills can be accelerated. Techniques include:
  - concrete preparation
  - cognitive challenge
  - social construction
  - metacognition
  - bridging
- Definitions and examples of the techniques are outlined in the slides following.....



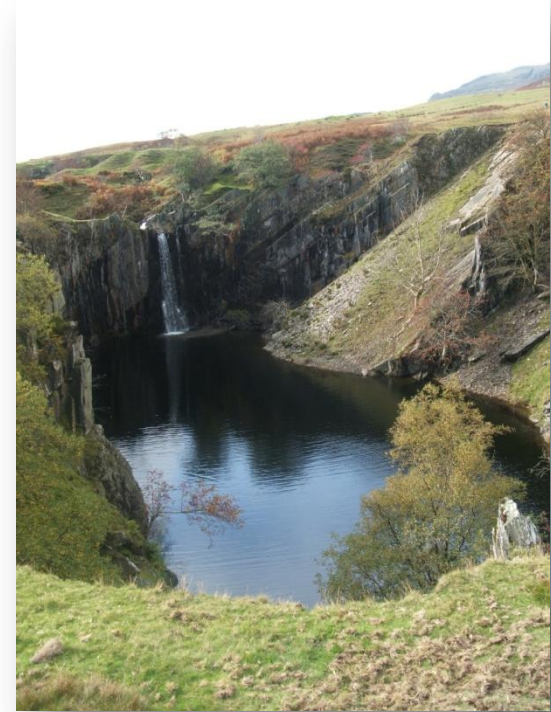
# Concrete Preparation

- To make the most out of challenges learners need to be prepared. To help learners achieve this effective teachers:
  - recap on relevant aspects of what learners have already learned
  - highlight and clarify the meaning of essential vocabulary through discussion with the learners
  - help learners to become familiar with the task and what they have to do through examples
- Unless you define terms and vocabulary a problem may not be seen as a problem



# Concrete Preparation: defined

- *‘To someone who has never seen a hat or a rabbit, it is not interesting to see a rabbit pulled out of a hat. For all he or she knows, hats are precisely where rabbits live.’*
- **Adey, P. and Shayer, M. (1994)**  
Improving learning through cognitive intervention.



# Cognitive Challenge

- Cognitive challenge is a challenge that makes learners think. It can:
  - challenge someone's usual way of thinking
  - introduce new information that does not fit with previous experience
- This challenge leads learners to be curious about the problem and makes them think
- The tasks set should be interesting and challenging, but achievable with the help of others



# Social Construction

- Once learners have been set a challenge, effective teachers planned for them to work together to solve it, supported by each other and by the teacher – a process of constructing understanding and solving problems collaboratively
- Conversation between the learners and teacher helps to:
  - build new knowledge and understanding
  - create dialogue within the group which helps children to refine their own thinking
- ‘In collaboration the learner can always do more than he can do independently.’ Lev Vygotsky





# Metacognition

- Metacognition occurs when learners become aware of and understand their own thinking
- While learners are working together on a task teachers can prompt them to say what they are thinking and why. This leads learners to:
  - become more aware of their own thinking
  - discuss ideas and concepts within the group
- Learners' may not be explicitly aware of their thinking, so holding a plenary discussion after the task can help to embed thinking by getting pupils to reflect on the task.



# Bridging

- Bridging involves enabling learners to take their learning from one context to another and could include:
  - using plenary sessions to broaden learners understanding by connecting what they have just learnt to other situations
  - offering examples of similar situations to learners and getting them to discuss the similarities and differences to make links between the two
  - getting learners to use knowledge they have learnt in one context in another, for example what strategies were used for a science experiment that could be used with another?



# An example of why bridging is important

- A study from Brazil looked at children who sold fruit on the streets. The teacher presented them with the same set of problems, but in three different ways.
  - The first was just like the buying and selling of fruit
  - The second was similar but involved different goods
  - The third removed all context and left abstract sums only
- The children answered almost all of the first set correctly, only three quarters of the second and scored an average of 40% on the decontextualised third set.
- By using plenary sessions this type of issue can be overcome, by allowing pupils to connect their understanding and learning to other situations



# How was the information gathered?

- The evidence underpinning this bite was drawn together as an anthology of the evidence from 30 high quality Research for Teachers studies written for GTC during the period 2000 – 2010. The 30 underpinning studies were all selected as high quality studies which are directly relevant to current practice These included:
  - Assessment for Learning: putting it into practice –  
<http://ntrp.org.uk/sites/all/documents/Assessment%20for%20learning%20Putting%20it%20into%20practice.pdf>
  - Enquiry-based learning, cognitive acceleration and the spiral curriculum: Jerome Bruner's constructivist view of teaching and learning –  
<http://ntrp.org.uk/sites/all/documents/Jerome%20Bruner's%20constructivist%20model%20and%20the.pdf>
  - Social interaction as a means of constructing learning: the impact of Lev Vygotsky's ideas on teaching and learning –  
<http://ntrp.org.uk/sites/all/documents/Vygotsky's%20ideas%20on%20teaching%20and%20learning.pdf>



## How can teachers use the evidence in this study?

- If you are not familiar with Thinking Skills approaches could you begin in a small way, by introducing to each exercise you set your learners, a prompt to think about what they've been doing?
- This could take the form of a set of questions, for example 'what have I learned previously that could help?' or 'what is the main idea I am trying to use?'
- Bridging learning across a variety of contexts helps pupils' understanding. Could you work with a colleague to develop ways of enabling learners to apply learning from a lesson context to everyday challenges?



# How can school leaders use the evidence in this study?

- The evidence is clear about the value of learners thinking aloud, so they can move towards new understandings.
- To what extent are learners in your school able to talk about their own thinking? You may wish to ask your teachers to set their class a task and challenge the pupils to explain their thinking as they go.
- Do you, as a staff, need to use metacognition and model your own thinking aloud in order to help pupils understand that suggestions that do not work are just as useful as ones that do in promoting effective thinking?



# Follow-up reading

- This BITE is based on the Research for Teachers ‘Behaviour for Learning Anthology’ accessible here:

<http://www.researchforteachers.org.uk/sites/default/files/Docs/Behaviour%20for%20learning%20anthology.pdf>

- See also:

- Vygotsky’s ideas on Teaching and Learning:

<http://ntrp.org.uk/sites/all/documents/Vygotsky's%20ideas%20on%20teaching%20and%20learning.pdf>

- Improving learning through cognitive intervention:

<http://ntrp.org.uk/sites/all/documents/Improving%20learning%20through%20cognitive%20intervention.pdf>





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