Hill View Teaching and Learning Policy

Intent

The process of Teaching and Learning at Hill View is one that is underpinned by research into metacognition (the awareness or analysis of one's own learning or thinking processes). It is vital for all staff to understand how children learn using this knowledge to underpin our daily practice enabling our pupils to reach their potential.

Teaching and Learning at Hill View aims to develop our young people into confident and knowledgeable pupils who draw on their experiences, and those of others, to build a well-informed understanding of the world around them.

Implementation

1. Getting our brains into Executive Mode

At Hill View, one of the first jobs of the day is to ensure that our children are operating in 'Executive Mode' so that they are able to activate their prefrontal lobe (the part of the brain needed to think and learn). Using a *Conscious Discipline* approach, we start every day with a ***Brain Smart Start***. This enables children to make connections with their peers and their learning, releasing oxytocin and

Figure 1: the three states of the brain

serotonin which reduces stress and promotes attention. Detailed instructions on how to carry out a ***Brain Smart Start*** are found in Appendix 1.
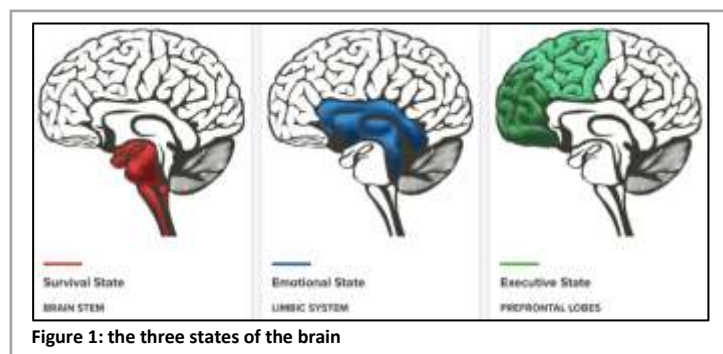
2. How we make sure that new learning 'sticks'

In order for new learning to 'stick' for children, they must have prior knowledge (or schema) to attach it to. In order to ensure that our pupils are able to access new learning, teachers ensure that children have experiences to draw upon (this might include a sensory experience, sharing a related story, a visit or visitor, for example). These experiences help children to build schema in their brains and, when new learning occurs, they can draw these into their *working memory* and attach new information to them.
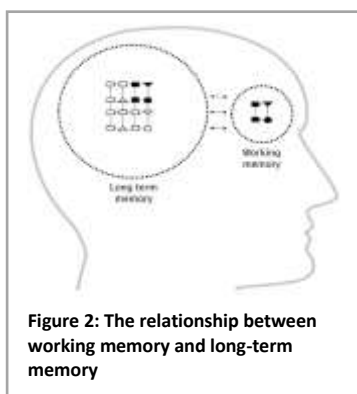

Figure 2: The relationship between working memory and long-term memory

When children learn something new, they are operating in their working memory. Our working memory holds information that you are currently thinking about. The knowledge in our *long-term memory* sits waiting to be used. When we trigger information from our long-term memory, it pops into our working memory to help us make sense of the new information we are thinking about. This in turn, helps to make connections and move new information into long-term memory. At Hill View, our goal is to create a learning environment in which children are routinely expected to think hard about carefully selected information that they attach to previous experiences, enabling knowledge to be systemically built upon.

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In order to learn, it is imperative that (through careful planning and sequencing) our children both develop a wide range of schema within their long-term memories *and* exercise their working memories to trigger this information to make sense of new information.

Memory Platforms

The process of learning should be 'deliberately difficult'. This does not mean that it is unobtainable but that new learning experiences have around 85% obtainable knowledge (though modelling and deliberate practise) and the remaining 15% of learning stretches and challenges the brain use their new information in a more complex manner. This works on the research that if a task is too hard, children will immediately disengage. Similarly, if a task is too easy, deep thinking will not occur and a similar result of disengagement is encountered.

The act of deep thinking and searching for information that has been taught helps to secure knowledge firmly in the long-term memory. To enable children to carry out the process of searching their memory, we use Memory Platforms. These are six questions based on previous learning. Questions one to three test last lesson's learning, question four tests last week's learning, question five tests

Memory Platform
1. Name the greenhouse gasses.
2. What is the main contributor of greenhouse gasses?
3. Describe one effect of Global Warming.
4. Name two activists/campaigners who are speaking out about Global Warming.
5. What were the names of the Antarctic Explorers?
6. What personal attributes do the Global Warming activists and Antarctic Explorers have in common?

Figure 3: Example of a Memory Platform

last term's learning and question six links last term to last lesson. This process exposes children to the need to think deeply and make connections between their learning experiences.

3. How we teach

Learning Questions

Learning questions are used to frame each lesson. When writing learning questions, teachers consider carefully the instructional verbs that are used to ensure that children have clarity around the task they completing. This also supports children to reflect on their effectiveness on completion of the task.

Learning questions are either **open** or **closed**.

Closed learning questions are coupled with procedural success criteria that outline compulsory elements in order to achieve an outcome. Success criteria use the terminology: 'you will be successful when...' followed by up to four steps of clear instruction. If a learning question requires more than four steps to complete, it will be broken down into multiple lessons.

How is speech punctuated accurately?
You will be successful when you...
1. Start each person's speech on a new line
2. Put speech marks before and after speech
3. Put full stops, exclamation marks, etc before the final speech marks.

Figure 4: Example of a closed learning question and success criteria for the acquisition of procedural knowledge.

Open learning questions are used once children have embedded multiple procedural skills; they require the retrieval and application of content they have already been taught. Success criteria use the terminology: 'you can choose from…' with list of previously taught skills that children can decide to use to demonstrate their acquired skills. This gives children an opportunity to show mastery in their learning by connecting their outcome to other areas of knowledge. Where children are working with open learning questions, the success criteria are coupled with examples of the skill to prompt knowledge retrieval. During these sessions, children are taught how

What tools can I use to create a suspense story?
You can choose from...
1. Using short sentences to build suspense
   He heard a rustling. He stopped. He turned.
2. Keeping some things secret or unrevealed
   Something was watching her, she could feel it.
3. Using dark settings or weather
   Outside, the rain slashed at the window panes.
4. Show not tell
   Ted's heart was pounding, beads of sweat dripped down his face.

Figure 5: Example of an open learning question and success criteria the demonstration of application of previous learning.

to use their prior learning to support them with the explicit practice of revisiting their building blocks as part of the teaching input.

Dual Coding

In order to operate working memory efficiently, both the visual sketchpad and phonological loop should be stimulated. Verbal and visual representations are used alongside each other to enable the working memory to have higher processing capacity. Using both stimuli triggers a connection between them, allowing more information to be perceived simultaneously and increases the ability for the information to be retrieved from long-term memory back into working memory. During lessons, teachers stimulate both the visual sketchpad and phonological loop by using a number of strategies: working walls, flipcharts, images, video, for example. Clear, concise narration ('thinking aloud') during modelling is essential to stimulate the phonological loop.
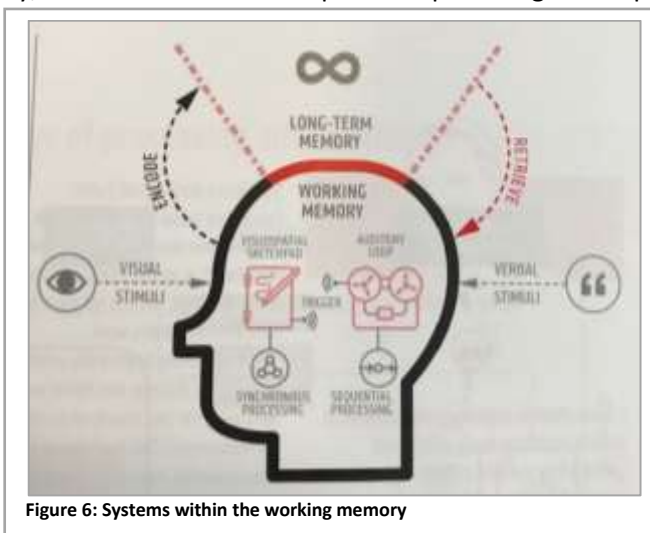

Figure 6: Systems within the working memory

Rosenshine's Principles of Instructions

(1) Sequencing concepts and modelling
2. present new material using small steps
4. provide models
8. provide scaffolds for difficult tasks

(2) Questioning
3. Ask questions
6. Check for student understanding

(3) Reviewing Material
1. Daily review
10. Weekly and monthly review

(4) Stages of Practice
5. Guide student practice
7. Obtain a high success rate
9. Independent practice

Figure 3: Rosenshine's Principles of Instruction sorted into strands

Rosenshine's Principles of Instruction underpin daily practice in the classroom, ensuring that children learn in an organised and consistent manner across all year groups and subjects. The principles are sorted into four strands; (1) Sequencing Concepts and Modelling, (2) Questioning, (3) Reviewing Material and (4) Stages of Practice. Each of Rosenshine's 10 Principles are sorted into the relevant strand, giving teachers a clear understanding of the purpose of each principle (Appendix 2). Staff are highly trained in the application of each of the Principles and use this knowledge to shape experiences in the classroom, maximising learning opportunities.

How are lessons structured?

Lessons begin with a short review of previous learning to enable children to connect their new learning onto schema that they have already converted into long-term memory. Memory Platforms may be used at this point.

Teacher input during the lesson lasts for around 15 minutes. Learning outcomes are separated into small steps, each of which is modelled using dual coding followed by deliberate practise. Scaffolds, such as manipulatives and writing frames, are used to support children during deliberate practise where needed, however, the aim is to remove these once a child has mastered a step. Carefully planned, targeted questions are asked frequently to elicit children's understanding and allow for timely intervention from the teacher or teaching assistant.

During independent practice, children are focussed on the deliberate practise of the task they have been set, overlearning the skill. Adults in the room will, as per the marking and feedback policy, be moving around the room to give quality verbal feedback to pupils and intervene where misconceptions are being demonstrated. Within books, there will be evidence of a high success rate for pupils. Mastery tasks allow children who have demonstrated competency to consolidate their learning by: reflecting on the challenges they have faced in acquiring the skill; applying the skill to a

different context; or correcting misconceptions or erroneous examples related to the task they have been given. Emphasis is placed on thinking hard when learning. The question of 'have you understood?' is reframed to 'what have you understood?'. Children are expected to be able to reflect and articulate their learning.

'Grouping and scooping' is used when the adults in the room have assessed that a number of children share a misconception or that a group of children have not understood the steps to success. Here, teachers will group identified children to model the step in a different way or model the use of a scaffold to enable them to achieve the learning outcome.

4. Interference to Cognitive Load

Learning Environment
When the working memory is overloaded, learning is not effective. Primary-aged children work most effectively when they are working with three pieces of information at one time. When there are distractions in the environment, these can interfere with the information that is being processed in working memory. At Hill View, we work hard to reduce these distractions by expecting quiet and purposeful working spaces. Classrooms must be well-organised and clutter free – ensuring that the environment enhances learning and does not detract from it. Appendix 3 details expectations for our learning environment.

Emotional Response
Memory can also be overwhelmed by an emotive response to an experience – the events that stick most in our memory are those with emotion attached to them. When learning, there is the danger that learning experiences leave children with an emotional connection to the event but as a consequence, the learning becomes lost: a year post a teaching sequence, children may remember that they enjoyed creating a sculpture but not the process and skill behind why they created it. Teachers plan with this mind. Emotionally rich experiences can be used to establish a connection to a topic or during application in different contexts, however procedural and conceptual knowledge should be imparted carefully to ensure that they sit at the heart of the learning experience and not an emotional response.

Impact
At Hill View, when you walk into a classroom you will see:
- Enthusiastic children who are focussed on their learning
- Children asking questions with confidence and determination
- Children making connections between current learning and existing knowledge
- Children actively using their prior learning to enable them to complete open ended tasks
- Books that show a clear journey to an intended outcome
- Focused and purposeful input from teachers, followed by carefully planned tasks to practice the taught skill
- Learning broken down into small steps with children demonstrating a high success rate in their books
- A purposeful environment where distractions are minimised
- Adults being proactive in their provision of scaffolds and reactive to constant assessment of children's needs during the lesson

Reading List

Books

- D. Willingham - *Why Don't Students Like School?* (ISBN: 978-0-470-59196-3)
- Y. Weinstein and M. Sumeracki – *Understanding How We Learn* (ISBN: 978-1-138-56172-4)
- T. Sherringtons – *Rosenshine's Principles in Action* (ISBN: 978-1-912906-20-8)
- P. Brown, H. Roediger and A. McDaniel – *Make it Stick* (ISBN: 978-0-674-72901-8)
- J. Hattie and S. Clarke - *Visible Learning Feedback* (ISBN: 978-1-138-59989-5)
- O. Caviglioli – *Dual Coding with Teachers* (ISBN: 978-1-912906-25-3)
- B. Bailey – *Conscious Discipline: Building Resilient Classrooms*

Useful Websites/Online Articles

- Principles of Instruction - https://www.aft.org/sites/default/files/periodicals/Rosenshine.pdf
- 17 Principles of Effective Instruction - https://www.teachertoolkit.co.uk/2018/10/21/barack-rosenshine/
- The Conscious Discipline Brain State Model - https://consciousdiscipline.com/methodology/brain-state-model/#tab_executivestate
- 5 Ways to Make Knowledge Stick - https://www.teachertoolkit.co.uk/2018/03/11/knowledge-stick/
- Cognitive Load Theory - https://khsbpp.wordpress.com/2017/05/22/cognitive-load-theory-every-teacher-should-know-this/
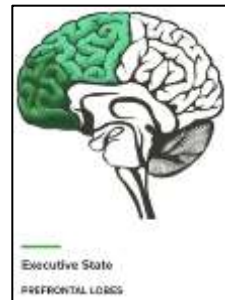- Working Memory Underpins Cognitive Development, Learning and Education - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4207727/

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Appendix 1

How to Use Brain Smart Starts

Adapted from https://consciousdiscipline.com/free-resources/shubert/shuberts-classroom/brain-smart-start/#howto

The Conscious Discipline Brain Smart Start of the day consists of four activities: An activity to unite, an activity to connect, an activity to disengage stress and an activity to commit. Each of these activities is based on scientific research about optimal brain function and mind-body states. Together, these activities prime the brain for a day of optimal learning and help the brain to move into the Executive State (if it is not already there).

Executive State
PREFRONTAL LOBES

The Process
Brain Start Smarts take between 5 and 10 minutes to complete the four stages.

1. The activity to **unite** as a class family involves everyone doing something together. It builds connection, fosters a sense of safety and releases endorphins

2. The activity to **disengage stress** involves deep breathing and stretching. It prepares the brain for learning and turns off the stress response.

3. The activity to **connect** helps to maintain focused attention and the motivation to learn. It also releases oxytocin, which promotes bonding and reduces aggression.

4. The activity to **commit** oneself to learning involves affirmations and positive thinking. It produces serotonin, teaches responsibility, promotes mindful attention and develops the prefrontal lobes.

To watch some examples of how this could be implemented, use this link https://www.youtube.com/watch?v=HXhDQW3-OxA&safe=true (please note, each of the sections have a title except commit – it is the last example on the video).

Appendix 2

Rosenshine's Principles of Instruction

Daily Review

Daily review is an important component of instruction. It helps strengthen the connections of the material learned. Automatic recall frees working memory for problem solving and creativity.

New Material in Small Steps

Our working memory is small, only handling a few bits of information at once. Avoid its overload—present new material in small steps and proceed only when first steps are mastered.

Ask Questions

The most successful teachers spend more than half the class time lecturing, demonstrating and asking questions. Questions allow the teacher to determine how well the material is learned.

Provide Models

Students need cognitive support to help them learn how to solve problems. Modelling, worked examples and teacher thinking out loud, help to clarify the specific steps involved.

Guide Student Practice

Students need additional time to rephrase, elaborate and summarise new material in order to store it in their long-term memory. More successful teachers build in more time for this.

Check Student Understanding

Less successful teachers merely ask "Are there any questions?" no questions are taken to mean no problems. False. By contrast, more successful teachers check on all students.

Obtain High Success Rate

A success rate of around 80% has been found to be optimal, showing students are learning and also being challenged. Better teachers taught in small steps followed by practice.

Scaffolds for Difficult Tasks

Scaffolds are temporary supports to assist learning. They can include modelling, teacher thinking aloud, cue cards and checklists. Scaffolds are part of cognitive apprenticeship.

Independent Practice

Independent practice produces 'overlearning' - a necessary process for new material to be recalled automatically. This ensures no overloading of students' working memory.

Weekly and Monthly Review

The effort involved in recalling recently –learned material embeds it in long-term memory. And the more this happens, the easier it is to connect new material to such prior knowledge.

Appendix 3

Expectations of Classroom Environment

1. **Tidy away unused resources and clutter** – research suggests that clear surfaces and tables help children with Communication and Interaction and anxiety needs to think better and organise themselves better. Reducing interference in the environment enables children to focus their attention on learning and reduces cognitive load.

2. A **visual timetable** that is used throughout the day. Things completed are moved or crossed out. Research suggests that keeping track of their day helps children with Communication and Interaction and Social, Emotional and Mental Health to be calmer, more prepared and more organised.

3. Display easy to reference **Learning Behaviours**. Children need help and teaching in this.

4. Display of **Zones of Regulation** – this really helps children to express and understand their feelings and to self-regulate better and provides staff with a shortcut into a conversation.

5. **Working walls** are kept up-to-date with clear scaffolding for the current learning journey.

6. Spelling display help **with a sign** encouraging its use.

7. Display/area of the room encouraging reading **with a sign** encouraging its use.

8. Easily accessible **maths equipment with a sign** encouraging its use.

9. A **Reflection Space** with a **Time Out Card** and signs added of your choice, encouraging self-regulation, reflection, impact of them on others, encouragement to be their best self, etc

10. A set of laminated wipe-clean **Task Boards, Now and Next Boards** and **Help Cards** ready to use – this should help our SEN children be less adult-dependent, and their use gradually phased in