

Sydenham School High Performance Learning

We are what we repeatedly do. Excellence, then, is not an act, but a *habit*. Aristotle

‘Intelligence isn’t fixed. High performers are made not born. They work for it. Any house can be home to success. It’s not all in the genes.’

Great Minds and How to Grow Them, Wendy Berliner and Professor Deborah Eyre.

HOW TO THINK



Meta-thinking



Creating



Realising



Linking



Analysing

HOW TO BEHAVE

EMPATHETIC



Collaborative



Concern for
Society



Confident

AGILE



Enquiring



Creative and
Enterprising



Open Minded



Risk-Taking

HARDWORKING



Ready to Learn



Deliberate
Practice



Retrieval
Practice



Resilience



Perseverance



High Performance Learning at Sydenham School

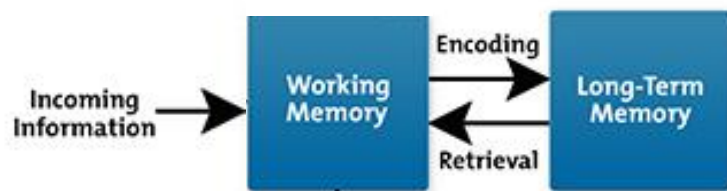
What is the High Performance Learning Approach?

Based on research from across cognitive psychology and neuroscience, Professor Deborah Eyre's High Performance Learning philosophy starts from the following key principles:

- High academic performance is an attainable target for everyone
- We can systematically teach students how to be 'intelligent' and how to succeed in school
- World Class Schools produce students that are both intellectually and socially confident, who are college-ready, workplace-ready and life-ready with a global outlook and a concern for others.

To increase student intelligence, you need to build the knowledge that is stored in the long-term memory.

At Sydenham School, we believe that cognitive science supports teacher development and our approach is informed by a range of research. To learn, students must transfer information from working memory (where it is consciously processed) to long-term memory (where it can be stored and later retrieved). Students have limited working memory capacities that can be overwhelmed by tasks that are cognitively too demanding. Understanding new ideas can be impeded if students are confronted with too much information at once.



Working memory is where we hold temporary information in our mind to process. It is very small in capacity and its size and capability is pretty much fixed.

Long term memory is the 'store' for factual and procedural knowledge for later retrieval. It is thought to be virtually infinite in capacity.

The working memory draws upon both the environment and long-term memory to process things. The working memory processes and encodes information into long-term memory for storage and later retrieval. The knowledge that we have in our long-term memory allows us to circumvent the limitations of our working memory.

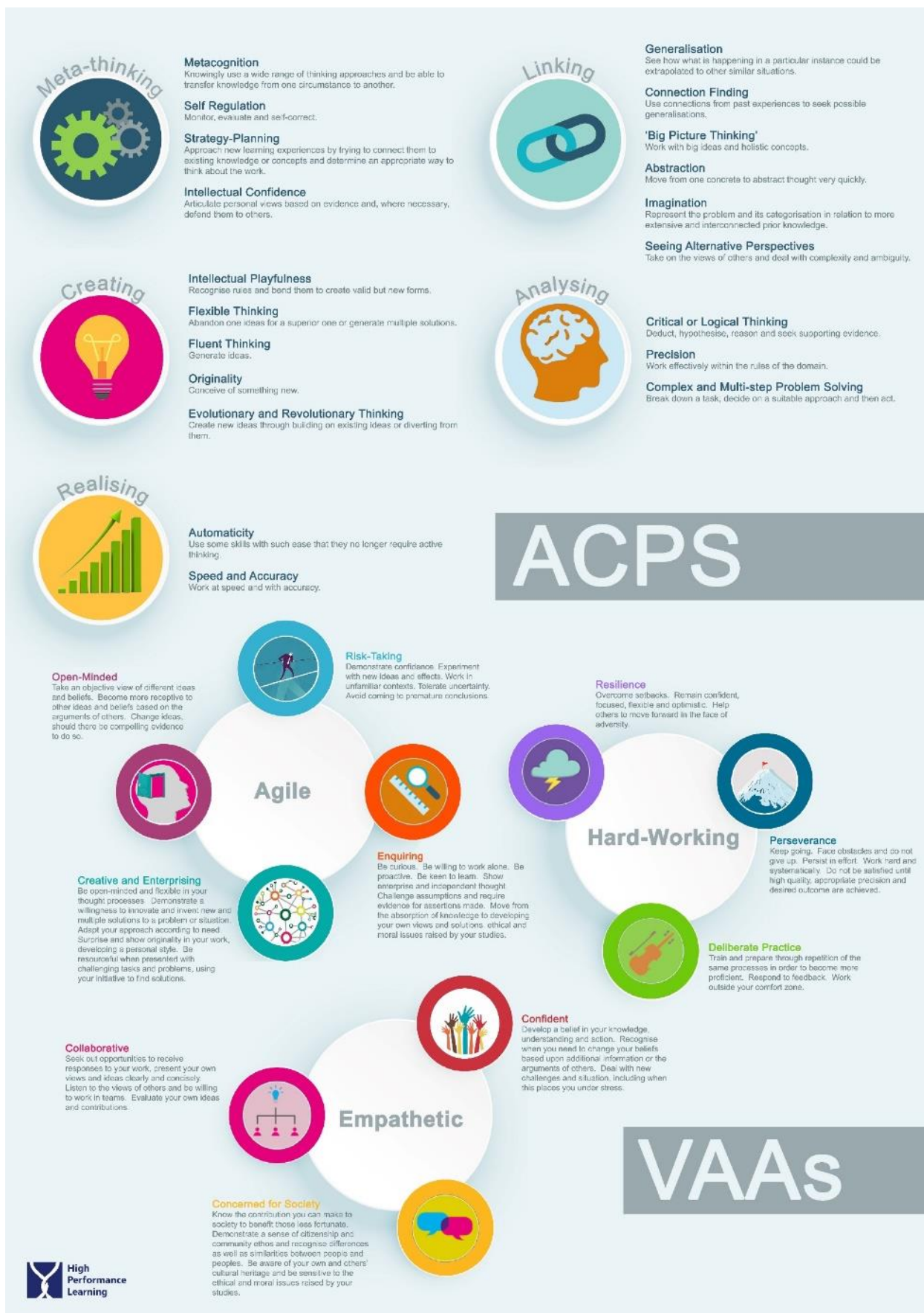
This can be used as a model for thinking about what intelligence is; intelligence can be thought to be a function of both working memory and long-term memory. While there is a limit to what we can do to improve our working memory, we can improve the amount of knowledge and how this knowledge is organised to support thinking for our students. You might have students that seem to grasp concepts more quickly. It is likely that they have more, better-organised knowledge in their long-term memory about the topic which is easy to access and use, allowing them to take on and use new information. This is sometimes referred to as the Mathew Effect, a biblical term that describes how it is easier for the rich to get richer. Literacy, specifically a wide vocabulary, has a significant impact on this also.

The research literature from cognitive science shows that knowledge makes learning easier. Knowledge is not only cumulative, it grows exponentially. Those with a rich base of factual knowledge find it easier to learn more and factual knowledge enhances cognitive processes (the ACPs) like problem solving and critical thinking. The richer the knowledge base, the more smoothly and effectively these cognitive processes operate. Skills are predicated on knowledge and so we see knowledge as key for our students.

- Build the amount of knowledge, the quantity and organisation of knowledge in long term memory
- Manage the cognitive load we are putting on students' minds during lessons, thus preventing cognitive overload

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THE PRINCIPLES OF INSTRUCTION

TAKEN FROM THE INTERNATIONAL ACADEMY OF EDUCATION

This poster is from the work of Barak Rosenshine who based these ten principles of instruction and suggested classroom practices on:

- research on how the brain acquires and uses new information
- research on the classroom practices of those teachers whose students show the highest gains
- findings from studies that taught learning strategies to students.

HOW2
teachinghow2s.com

01 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.

02 NEW MATERIAL IN SMALL STEPS



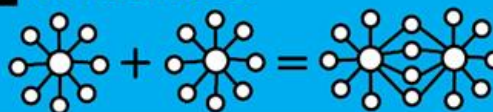
Our working memory is small, only handling a few bits of information at once. Avoid its overload — present new material in small steps and proceed only when first steps are mastered.

03 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.

04 PROVIDE MODELS



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

05 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 built in more time for this.

06 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.

07 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.

08 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.

09 INDEPENDENT PRACTICE



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

10 WEEKLY & 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.

Stage 1 – Modelling stage: Teacher Instruction and Explanation

1. Daily Review

- Do It Now
- Targeted Questioning
- Enable students to link the new learning to prior knowledge



Linking



Meta-thinking

2. New Material in Small Steps

- Teacher Explanation
- Break down new material into small steps. Use questioning to check understanding. Communicate common misconception. Be aware of cognitive load (dual coding, simplicity of powerpoint, deliberate and retrieval practice.) Create an atmosphere of enquiry, enabling students to develop curiosity and to enquire further.

3. Ask Questions

- Use your knowledge of students' prior learning. All questions should make all students think
- Plan and target questions, ensuring all students are included - avoid 'hands up'.
- Check understanding through hinge-questioning.
- Set up an atmosphere of enquiry, asking and answering targeted questions as a whole group.

4. Provide Models

- Demonstration of a technique or skill.
- Sharing exemplar work.
- Modelling - steps of an experiment or practical activity, what success looks like

Stage 2: Scaffolding Stage: Deliberate Practice and Self Monitoring

5. Guide Student Practice

- **Deliberate Practice** 1. Push beyond one's comfort zone. 2. Work towards well-defined, specific goals. 3. Focus intently on practice activities. 4. Receive and respond to high quality feedback. 5. Develop a mental model.
- **Retrieval Practice** strengthen the learning in long term memory through self quizzing and bringing information to mind.
- **Spaced practice** space out learning over a longer period of time ensures that learning is more secure in the long term memory.



Meta-thinking



Analysing

6. Check Students Understanding

- **Feedback / Assessment** Use the **feedback loop** to identify next steps and then reteach, address misconceptions and enable students to practice better.
- **Feedback (Verbal Feedback, Dedicated Improvement and Reflection Time)** Ensure that verbal and written feedback is specific, focused and clear and that the opportunity is given for students to respond.
- **Questioning** When questioning whole class use strategies, such as hinge questions and mini whiteboards to ensure whole class response. Ensure questioning make students think hard and is targeted and inclusive.

7. Obtain High Success Rate

- Differentiation – ensure that all students are being challenged at the appropriate level.

8. Scaffold For Difficult Tasks

- **Scaffolding** supports those students who need it and know when and how this will be removed.

Stage 3: Autonomous Stage: Student Cognitive Performance

9. Independent Retrieval & Deliberate Practice

10. Weekly and Monthly Review

- Realising – build speed and automacity through 'overlearning'.
- Self Regulation through independent practice
- Link to prior knowledge.



Realising



Meta-thinking



Creating



Analysing



Linking

Climate for Learning

- At the door
- Five to Start, Five to Finish
- Do It Now (DIN)
- Positive Behaviour Management
- Behavioural instructions – Concrete, specific, observable.
- Bottom line

At the door: Create a safe learning environment by being at the door at the start and end of the lesson and use this as an opportunity to build a rapport with students. Meet, greet and smile – regardless of past behaviour.

Five to
START

1. Enter room in silence
2. Sit down in silence with coats off
3. Place equipment, planner and exercise book on the desk
4. Place bags under the desk/designated area
5. Begin the 'Do it Now'

1. Tidy room and put all equipment away
2. Have planners checked
3. Put coats on
4. Stand behind desks
5. Be silent for dismissal

Five to
FINISH


Ready to learn


Collaborative Problem Solving


Reflection


Persistence

Do It Now: This should be a small group or independent task, which focuses the students on the learning for the lesson as soon as they come into the classroom.

Positive Behaviour Management: 'Catch them being good'. Have high expectations of behaviour and reward students for doing the right thing through the use of judicious praise, merits focused towards the VAAs (Values, Attitudes and Attributes) and ACPs (Advanced Cognitive Performance Characteristics). This can be done through the merit system on SIMs. Don't shout.

Behavioural Instructions: Be consistent and effective in your use of whole school behaviour strategies and make behavioural instructions assertive, positive, clear, specific and observable.

The Bottom Line: 1st Line: Warning. 2nd Line: Second Warning. 3rd Line: Sanction (10 minute detention, phone call home, demerit) 4th Line: Removal from Lesson (Faculty Shadow Timetable / On Call) Followed by Sanction (30 minute Faculty Detention, Phone Call Home, Demerit on SIMs)