Catholic Education Sandhurst Ltd

Learning and Teaching Instructional Model

Catholic Education Sandhurst Ltd

GUIDING LIGHTS

magnify SANDHURST

Contents

INTRODUCTION

Colleagues,

As we launch the new instructional model across CESL, I want to take a moment to speak to the heart of why we're doing this - and why now.

Magnify Sandhurst is not just another initiative. It's a bold, system-wide commitment to ensuring and assuring learner growth for every student in our care. It's about lifting our gaze beyond the walls of individual classrooms and schools, and asking: *What does it mean to be part of a Catholic education system that truly magnifies the potential of every learner?*

This instructional model is one of the key levers in that commitment. It reflects the best of what we know from cognitive science, educational research, and our own lived experience in Sandhurst. It's designed to bring consistency, clarity, and confidence to our teaching practices - so that every student, in every school, has access to high-quality learning.

But let's be honest: this will ask something different of us. It will require us to think deeply, plan carefully, and make some hard decisions. The end result will look quite different from what we've known. And that's okay. Change, when it's purposeful and well-supported, is how we grow.

We are not rushing. We are moving with intentionality. We are building a shared language and a shared practice, so that our system can be stronger, more aligned, and more impactful. This is about solidarity - not uniformity. It's about subsidiarity - not isolation. It's about stewardship - not control.

As leaders, teachers, and support staff, your role in this is vital. You are not just implementing a model - you are shaping it. Your insights, your feedback, and your professional judgement will help us refine and strengthen this work as we go.

Together, we are creating a system that doesn't just teach - it transforms. A system that doesn't just instruct - it inspires. A system that doesn't just serve students - it magnifies their growth.

Thank you for your commitment, your courage, and your care.

Warm regards,

Kate Fogarty
Executive Director, CESL

CESL INSTRUCTIONAL MODEL

The CESL Instructional Model uses as its basis a scientific understanding of how learning happens. Cognitive science has provided several conceptual models and explanations of learning that can be used to develop a structure that best supports all students in their learning development, regardless of their starting point.

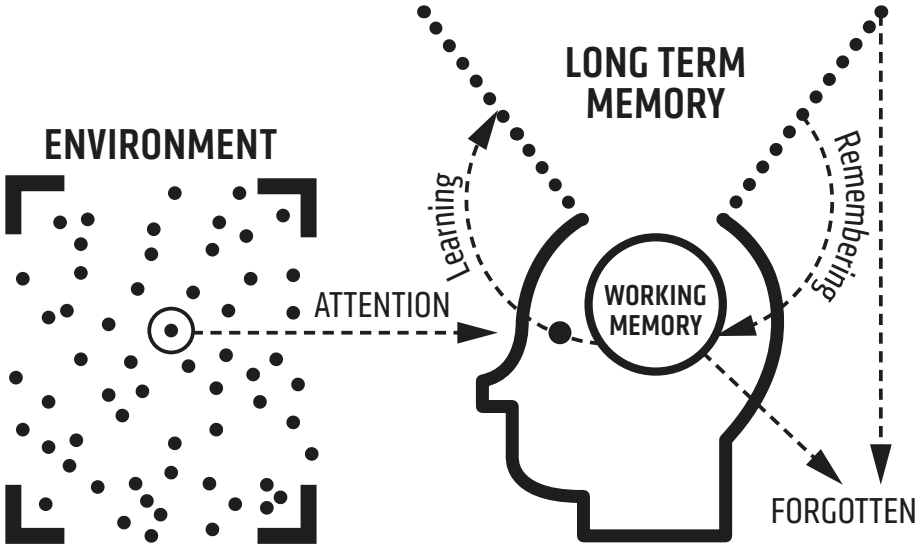
Key Understandings of Learning

The CESL Instructional Model is underpinned by several key understandings of learning supported by cognitive science:

- **We learn what we think about**
- **We can't think about something we don't know**
- **We learn better when new knowledge is connected to what we already know**
- **We all learn the same**
- **Attention is the gateway to working memory, working memory is the gateway to long term memory**
- **Higher order skills, like critical and creating thinking and problem-solving, are built on a foundation of knowledge, therefore, the more we know the more deeply we can think**
- **Learning transfer - using what we already know in novel situations, is difficult, but students can be supported to do this more readily**
- **Novice learners and experts require very different learning supports**
- **Forgetting is a natural part of learning and can be limited with the use of some key strategies - e.g., active retrieval and spaced practice = spaced retrieval**

Model of Memory

The Simple Model of Memory (Willingham, 2009) provides a simple but powerful model of the interplay between the environment (what we wish to learn), attention, working memory, long-term memory and forgetting.



Visualisation of Willingham's Simple Memory Model by Oliver Caviglioli

This model of memory provides us with important messages regarding learning:

a. attention is required to begin the learning process - *no attention = no learning*

b. working memory is the site of our thinking - *thinking leads to learning*

c. our working memory does two things:

   (i) it processes new information from our environment, and

   (ii) it brings up information from long term memory for us to think about and to connect new learning to

d. new learning must be processed in working memory before it can move to long term memory

e. working memory is limited and quickly overwhelmed by too much new information too quickly

f. the limits of working memory can be overcome by information stored in our long-term memory

g. retrieving information from long term memory strengthens learning and makes it more durable and accessible; and

h. forgetting is a natural process that can be minimised via revisiting previously learned material on a regular basis.

The Instructional Hierarchy

The Instructional Hierarchy, (Haring et al. 1978) provides an understanding of how learning develops in four phases from its basic beginnings to its more complex, adaptive and integrated conclusions.

Being aware of these learning phases allows teachers to differentiate student support in relation to their stage of development and provides a roadmap of how the complexity of the task can be adapted to suit the needs of the learner. Rather than being seen as separate entities, these phases can all be attended to within a single lesson.

Phase 1

ACQUISITION (Surface)
The student is learning the target information, skill or concept, but has yet to do this with consistent accuracy.

Phase 2

FLUENCY (Surface)
The student is completing the information/skill/concept with accuracy but is working slowly. The aim is to improve speed and automaticity of performance.

Phase 3

GENERALISATION (Deep)
The student is both accurate and fluent in using the target information/skill/concept, and with support is beginning to solve problems and apply the new learning in situations with prompting.

Phase 4

ADAPTION (Transformative)
The student can apply the target information/skill/concept in novel situations without prompting.

CESL Instructional Model

The CESL Instructional Model is underpinned by our commitment to safe, predictable and secure learning environments, free from distraction, supported by positive, respectful relationships between teachers and students.

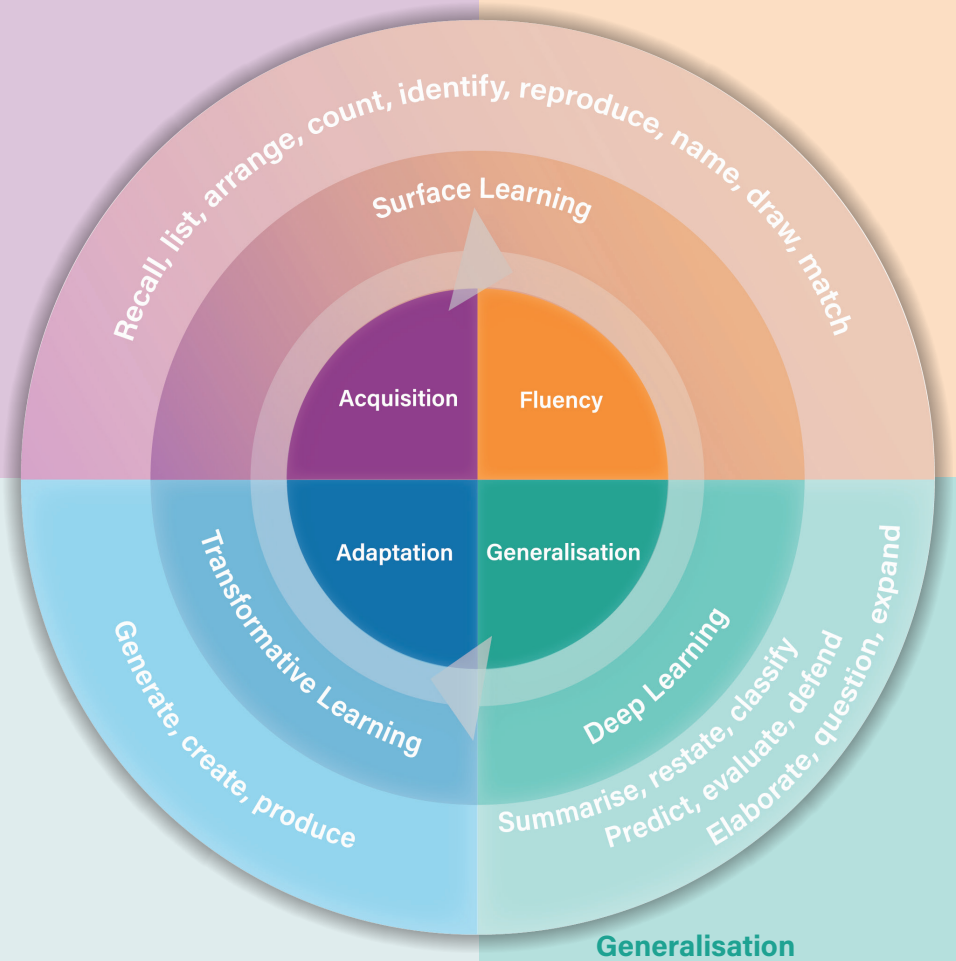
Acquisition

Explicit Instruction

- New Learning is presented in small, manageable steps
- Worked Examples are used
- Models and modelling are utilised to support novice learners
- Teachers provide clear, precise explanations
- Emphasis on accuracy
- Immediate feedback on task
- Reteach

Fluency

- Guided to independent practice
- Repetition and retrieval
- Deliberate practice
- A focus on improved efficiency of learning
- Feedback to improve speed of performance/task
- What, when, where, who - questions



Adaptation

Adaptive Expertise

- A deep understanding of content allows students to apply what they know to novel situations
- Students may not only solve problems but can create and generate problems for others to solve
- Feedback on self regulation with prompts and questions to promote self reflection

Generalisation

- Support students in knowing how to utilise what they know to solve problems of increasing complexity
- Move from knowing to understanding
- Knowing the rules and then applying them
- Making connections between what students are currently learning and what else they know
- Create variability in learning experiences to support transfer including interleaving
- Feedback on learning processes
- Why and how questions

CESL Core Instruction Steps in Teaching

The universal core steps of teaching, as developed by Steplab, that underpin the explicit nature of all learning situations, are as follows:

Step 1

CREATE CULTURE

Build the necessary routines, environment and behaviour for learning.

Step 2

SECURE ATTENTION

Ensure the teacher has the student's attention.

Step 3

OPTIMISE COMMUNICATION

Presenting information in a way that is manageable for the cognitive load of students.

Step 4

DRIVE THOUGHT

The teacher uses strategies, questioning and discussion to support all students to think hard about the ideas being presented.

Step 5

GATHER AND GIVE FEEDBACK

The teacher uses strategies to gather feedback about student learning and provides opportunities for this to be acted upon.

Step 6

ENSURE CONSOLIDATION

Strategies are deliberately employed to support students in securing learning into their long-term memory.

Structure of a Lesson

To maximise student learning in the allocated lesson time, the following structure provides a strong model to help ensure that new learning opportunities are maximised, whilst previously learned material is strengthened via retrieval and is permanently stored in long term memory.

Creating culture *precedes and permeates through all components below of the lesson structure.*

1 Retrieval of Previous Learning - *ensure consolidation*
- a. Followed by quick feedback / correction

2 Learning Focus - *optimise communication / secure attention*
- a. Learning Intention
- b. Question prompt related to today's learning
- c. Criteria for success
- d. Connect to prior knowledge

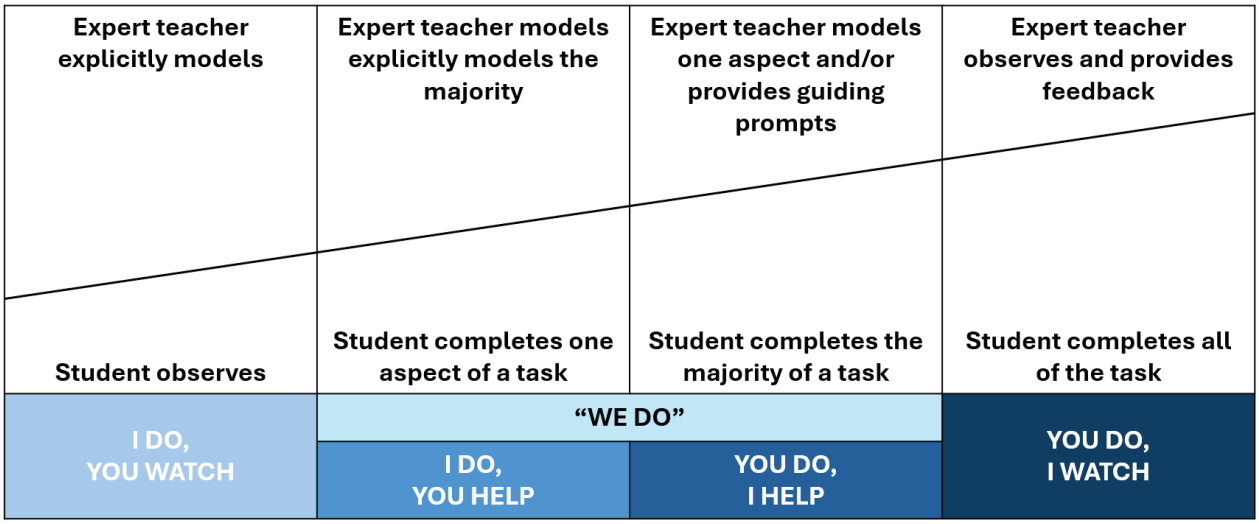
3 Learning Activity - *driving thought / gathering and giving feedback*
- a. Related to the phase of learning common to most students regarding the Instructional Hierarchy - ***Aquisition, Fluency, Generalisation, Adaptation***
- b. Frequent checks for understanding and formative assessments

4 Review, Reflect, Consolidate - *ensure consolidation / gather feedback*
- a. Focus on what has been learned in today's lesson
- b. Relate back to the learning focus
- c. Connect to larger learning focus / concept

5 Priming - *optimise communication / drive thought*
- a. What learning comes next?
- b. What are we going on with tomorrow / next week?

Gradual Release of Responsibility

The gradual release of responsibility model supports students in becoming increasingly proficient in their capacity to complete learning tasks independently. It does this by deliberately handing over more responsibility for learning as the learner becomes able, with the teacher decreasing their support in this process. The teacher then makes decisions about when to re-enter any phase of this process as they observe the learning outcomes for their students.



(Adapted from Lee, 2023)

Reflection on the Science of Learning

LME Global (Learning Made Easy) is a proud partner of Magnify Sandhurst. The following guiding material is developed for further orientation for the context of this Instructional Model based on the professional learning led by Dr Jared Cooney Horvath on 22-24 April 2025.

- Science of Learning and Magnify Sandhurst **overview**
- **3 day overview** from Science of Learning days
- 3 day **Q & A**

Bibliography

Australian Education Research Organisation. (2023). *Teaching for how students learn: A model of learning and teaching* https://www.edresearch.edu.au/sites/default/files/2023-11/model-learning-teaching-aa_0.pdf

Bjork, R., & Bjork, E. (2016). *How We Learn Versus How We Think We Learn* [YouTube Video]. In YouTube. https://www.youtube.com/watch?v=oxZzoVp5jmI

Brown, P. C., Roediger III, H. L., & McDaniel, M. A. (2014). *Make it stick: The science of successful learning.* The Belknap Press of Harvard University Press.

Centre for Education Statistics and Evaluation. (2017, June 3). *Cognitive load theory: Research that teachers really need to understand*. Education.nsw.gov.au. https://education.nsw.gov.au/about-us/education-data-and-research/cese/publications/literature-reviews/cognitive-load-theory

Cooney Horvath, J. (2019). *Stop Talking, Start Influencing: 12 Insights From Brain Science to Make Your Message Stick*. Exisle Publishing.

Deans For Impact. (2015). *The Science of Learning.* https://www.deansforimpact.org/files/assets/thescienceoflearning.pdf

Department of Education. (2022). *Victorian teaching and learning model* (VTLM 2.0). www.education.vic.gov.au. https://www.education.vic.gov.au/school/teachers/teachingresources/practice/improve/Pages/Victorianteachingandlearningmodel.aspx

Didau, D., & Rose, N. (2016). *What Every Teacher Needs to Know About Psychology.* John Catt Educational Ltd.

Goodrich, J. Mccrea, P. Lovell, O. (2019). *A Simple Model of Teaching.* Steplab.co. https://steplab.co/au

Haring, N. G., Lovitt, T. C., Eaton, M. D., & Hansen, C. L. (1978). *The fourth R: Research in the classroom.* Columbus, OH: Merrill.

Intervention Central. (n.d.). *The Instructional Hierarchy: Linking Stages of Learning to Effective Instructional Techniques | Intervention Central.* www.interventioncentral.org. https://www.interventioncentral.org/academic-interventions/general-academic/instructional-hierarchy-linking-stages-learning-effective-in

Kirschner, P. A., & Hendrick, C. (2020). *How learning happens: Seminal works in educational psychology and what they mean in practice.* Routledge.

PEN Principles. (n.d.). *Science of Learning Research Centre.* https://www.slrc.org.au/resources/pen-principles/

Ruiz Martín, Héctor. (2024). *How Do We Learn?* John Wiley & Sons.

Steplab | *Professional development that really works.* (n.d.). Steplab.co. https://steplab.co/au

Sweller, J., Ayres, P., Kalyuga, S. (2023, January 7). *Expertise Reversal Effect.* YouTube. https://www.youtube.com/watch?v=CuwAWg377fo

Willingham, D. T. (2009). *Why Don't Students Like School?* John Wiley & Sons.

THE SCIENCE OF LEARNING AND MAGNIFY SANDHURST

Overview

All Magnify Sandhurst initatives use as their basis a scientific understanding of how learning happens. Cognitive Science has provided several conceptual models and explanations of learning that can be used to develop a structure that best supports all students in their learning development, regardless of their starting point.

In line with these understandings, we note the need to provide all CESL school and office staff with information to be able to articulate the 'WHY' regarding our Magnify Sandhurst, our learning partners and their resources. The following is developed to enable a shared and consistent understanding for communicating this among colleagues, with students, families and the broader community as required.

Structured Literacy: Foundational Reading Instruction

Structured literacy is a research-informed approach to reading that prioritises explicit, systematic instruction. Within Magnify Sandhurst, this approach is reflected in the use of evidence-based programs that support learners - particularly in the early years—to develop strong foundational reading skills.

Structured literacy aligns closely with the Science of Learning by targeting three essential components of reading: phonic word attack skills, sight word recognition, and supported text reading. These elements are taught through structured, high-frequency practice that builds fluency and comprehension. The approach reflects cognitive science principles such as explicit instruction and scaffolded learning, which support long-term retention and skill transfer.

This takes place from Foundation to Grade 2 via InitiaLit. MiniLit Sage and MacqLit are interventions used to support students requiring additional learning from Foundation to Secondary. Progress is monitored regularly, allowing instruction to be responsive and data informed. The approach combines phonics with meaningful text reading, reflecting contemporary understanding of effective literacy instruction and how the brain learns to read: through repetition, feedback, and carefully sequenced instruction that builds competence and confidence over time.

Curriculum Coherence and Cognitive Load: A Low Variance, Knowledge Rich Curriculum

Ochre Education provides high-quality, curriculum-aligned lessons in English, Mathematics, and Science that are deeply informed by the Science of Learning. Within Magnify Sandhurst, Ochre supports teachers in delivering content that is both rigorous and accessible, using research-based strategies to enhance how students remember and apply knowledge.

Ochre lessons embed retrieval practice, such as daily review questions to strengthen long-term memory, and spaced practice to ensure key concepts are revisited over time, reducing forgetting. Lessons are designed with cognitive load theory in mind: content is broken into manageable steps, supported by clear explanations and visual aids, which reduces strain on working memory. For example, in a science unit, students might encounter vocabulary like “evaporation” and “condensation” introduced with diagrams (dual coding) and revisited across multiple lessons to build deep understanding.

This structured, explicit approach helps students form schemas—mental frameworks that make future learning easier. Ochre’s resources reflect how the brain learns best: through repetition, connection to prior knowledge, and carefully sequenced instruction that builds from foundational concepts.

Instructional Coaching: Building Teacher Expertise through Practice

Steplab is an instructional coaching and professional learning platform that supports teacher development through short, focused cycles grounded in the Science of Learning. It enables instructional coaches within Sandhurst to provide targeted, evidence-informed support that is practical, personalised, and directly linked to classroom impact.

Steplab emphasises deliberate practice by helping teachers master one high-leverage teaching technique at a time. Through model videos, success criteria, and insight modules, teachers receive clear guidance and feedback, allowing them to refine their practice in manageable steps. The platform also incorporates spaced repetition and retrieval practice, encouraging regular reflection and rehearsal of techniques to strengthen long-term retention and transfer to the classroom.

By aligning coaching with how the brain learns best, Steplab ensures that professional learning is not only effective but also sustainable—building teacher expertise in ways that directly benefit student learning.

Positive Environments for Learning: Behaviour and Classroom Culture

Classroom Mastery, developed by the Knowledge Society, is a framework grounded in the Science of Learning. It equips teachers with practical strategies to create calm, orderly, and predictable classroom environments—conditions that are essential for maximising learning time and ensuring every student can thrive.

By embedding consistent routines and clear expectations, Classroom Mastery reduces behavioural disruptions and increases instructional time. This aligns with the broader CESL commitment to calm, safe, and positive learning environments, as outlined in the Behaviour Curriculum and Magnify Sandhurst initiatives. Ultimately, Classroom Mastery is not just about classroom management—it's about creating the conditions where high-quality teaching can flourish, and every student can engage deeply with learning.

Faith and Formation: Integrating Identity and Learning

The *Source of Life* Religious Education curriculum is a core component of Catholic identity and formation across CESL schools. It provides a structured, developmental approach to religious education that supports students in exploring faith, values, and ethical understanding within the Catholic tradition.

The *Source of Life* aligns with the Science of Learning through its use of explicit instruction, scaffolded learning, and connection to prior knowledge. Lessons are sequenced to build conceptual understanding over time, supporting students to make meaning of complex theological ideas and apply them to real-world contexts.

The curriculum fosters deep thinking by encouraging students to engage with scripture, Catholic social teaching, and moral reasoning. It also supports the development of schemas—mental frameworks that help students integrate faith with life experience—through repetition, reflection, and dialogue. *Source of Life* contributes to the holistic development of students by nurturing their spiritual, intellectual, and emotional growth. It complements the academic focus of other Magnify Sandhurst initiatives by grounding learning in purpose, identity, and a shared commitment to the common good.


Catholic
Education
Sandhurst Ltd