



Outstanding Primary Teacher Programme

Applying Cognitive Science to the Primary Classroom

Aims

- Understanding what cognitive science tells us about how children remember things in the long term
- Exploring the relationship between knowledge and skills in the learning process
- Reflecting on what this means for pedagogy and curriculum development

Programme Summary

Day one:

- How memory is structured and the crucial role of memory in learning
- The role of knowledge in long term learning
- Myths about learning

Day two

- Cognitive load part 1
- Cognitive load part 2
- Knowledge, memory and curriculum design

Day three

- How should cognitive science influence day to day teaching?
- Learning as a generative activity
- Motivation and metacognition

Please see full programme content below

Programme Lead

Clare Sealy

Head teacher at St Matthias Primary school in Tower Hamlets, East London. She also worked as a School Improvement Partner for Essex.

She is well known for blogs about how her school is attempting to put educational research findings into practice at www.primarytimery.com. Her interests are the application of cognitive science in the classroom, and the importance of memory in learning, rethinking assessment for learning and developing a primary curriculum that builds cultural literacy.



Eligibility

This programme is suited for Headteachers, Senior leaders, SENDCOs, SLEs and Classroom Teachers.

Dates for 2019

Tue 12 February | Thu 14 March | Tue 2 April

Venue

Cranbrook Education Campus, Nr Exeter

Programme Fees

D TSA ECTSA SWTSA Members: £250

Other: £350

Booking link

https://docs.google.com/forms/d/e/1FAIpQLSfgG3M6XSEcKrJaltSA-ALO6fqa8ntiS18pV4ub0p9ID2sKoQ/viewform?usp=sf_link

Find out more

Contact Martin Smith – TSSW Lead – to discuss programme in more detail (msmith@teachingschoolssw.org.uk)



Full Programme Content

Day one

How memory is structured and the crucial role of memory in learning

In this session we will learn about the simple model of memory, as used by Daniel Willingham, comprising the working memory – the place where thinking happens – and the long-term memory. We will learn about the difference between episodic and semantic memory and why this is important in terms of long term learning. We will learn about retrieval practice and spacing an interleaving material and see some examples of how these might be used in the classroom.

The role of knowledge in long term learning

In this session, we will explore the ‘knowledge versus skills’ debate by learn about declarative and procedural knowledge (knowing that and knowing how). We will learn why declarative knowledge necessarily needs to precede much procedural knowledge. This will include discussion how Bloom’s taxonomy has been misinterpreted to downplay the vital role of knowledge in learning. We will then go on to explore the role that knowledge plays in understanding, critical thinking and creativity. We will reflect on what a knowledge-rich lesson looks like, clarifying that this does not mean a one-sided lecture.

Myths about learning

In this session, we will look at various myths about learning that persist despite substantial evidence they are not true. Drawing in particular on the work of Paul Kirschner, we will explore what the evidence says about learning styles, Dale’s Cone of Experience and why Dylan William thinks that ‘you can always just Google it’ is the most dangerous myth in education today.

Day two

Cognitive load part 1

Building on the previous day’s sessions, we will revisit the simple model of memory as a prelude to exploring John Sweller’s cognitive load theory. We will experience practically what it is like to be cognitively overloaded as a way into thinking about how to reduce the possibility of this happening.

Cognitive load part 2

We will explore how task design, prior knowledge and dual coding can all help reduce cognitive overload and the implications this has for teaching. We will consider the problem posed by ‘the curse of the expert’ and the implications this has for discovery forms of learning.

Knowledge, memory and curriculum design

In this session, we will learn about schema formation and explore prototype theory of Eleanor Rosch, and how therefore curriculum design needs to consciously build well developed schema that broadens learners’ view of what is ‘typical’.

Day three

How should cognitive science influence day to day teaching?

In this first session, we will look at Barak Roshenshine’s Principles of Effective Instruction, linking back to concepts we have discussed during the previous two days.

Learning as a generative activity

Using ideas from Logan Fiorella and Richard E Mayer’s work, we will look at strategies that strengthen memory and consolidate understanding during the guided practice and independent practice phases of a lesson.

Motivation and metacognition

We will look at the work on Arthur Shimamura on motivation and the Education Endowment foundation’s work on metacognition to round off our study of cognitive psychology.