NSW Department of Education

In Conversation with Dr Aylie Davidson viewing support document

Before you begin

Dr Aylie Davidson is an experienced early childhood and primary teacher and educational researcher. Her research and her work with schools focuses on planning and programming in mathematics that places students at the centre. In this *In conversation* (28 minutes), we discuss planning in school teams and how to get the most out of this time.

You can view the video and use the resources detailed below on your own or with your colleagues.

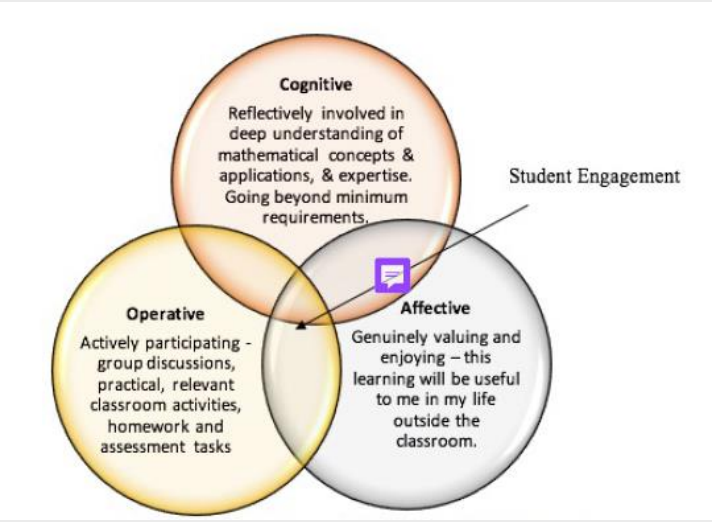
Note: there are many pause points highlighted below. You can pick the ones that you would like to use as discussion points, and ones that you might skip or save for other opportunities. If time permits, you might also choose to watch it all in one go (or ask teachers to pre-watch it individually before meeting) and return to the discussion points during subsequent viewings.

Allow about one hour to watch the video, discuss key points with your colleagues and explore the resources.

Possible points for reflection and discussion

Timestamp	Possible points for reflection and discussion
Prior to viewing	Take 10 minutes to reflect or discuss how you currently feel about the questions below (if you like, use the 'Before and Now' chart in the Reflection notes below): • What does planning in mathematics look like at your school? What is working well? • Do you feel that students are at the centre of planning and programming?

Timestamp	Possible points for reflection and discussion
	• Do you think that your scope and sequence is working well for you and your students? Why or why not? • How are learning sequences (units of work) planned for and used at your school? Highlight the discussion points that you want to focus on with your teams from the suggestions below.
2:24	Teaching is a very rare profession, in that by the time we become teachers, we have had 13 years of K–12 schooling as learners. These experiences shape our idea of what teaching and learning is supposed to be (or not be). • How did your school experiences influence your relationship with maths? • What practices do you want to replicate and/or build upon in your teaching? • What don't you want as part of your practice?
5:22	Marilyn Burns makes the distinction between *covering* the curriculum and *uncovering* the curriculum. Discuss this difference highlighted by Marilyn Burns and how it plays out at your school. The article from Marilyn Burns is available in Suggested resources.
8:00	Aylie discusses the importance of looking at syllabus documents alongside research because it brings a greater depth and dimensionality to teacher understanding. • Share any examples of times when research has enhanced your teaching. • Is engaging with research part of your planning? How could this be further embedded into what you are currently doing?

Timestamp	Possible points for reflection and discussion
9:39	'What's your school vision for mathematics, and do the tasks that you use match that school vision?' – Charles Lovitt. **If you don't have a school vision yet for mathematics:** • What would you like to have highlighted? • How would your task choice align and misalign to that vision now? **If you do have a school vision for mathematics:** • How do your most recent task choices align and misalign to your current school's vision for mathematics? • Would you change anything in your school vision? • Would you change anything in your task choice?
10:42	Aylie mentioned engagement as more than just having fun. She referenced the work of Catherine Attard and her colleagues where engagement is about thinking hard, working hard and feeling good about learning mathematics (cognitive, operative, affective). Here is the model she referenced: Figure 1 – engagement as a multidimensional construct  © Attard C (n.d.)

Timestamp	Possible points for reflection and discussion
	You might want to come back to this idea with further reading on engagement from Attard and Munns which is available in Suggested resources.
11:28	Aylie's research-based model asks teachers to define clear mathematical goals for the sequence of learning. She also found flexibility and responsiveness to students as critical hallmarks of effective planning. • How could you use a planning model like Aylie's to enrich the way you and your colleagues plan and use sequences of learning? • What would be the benefits? • How could you overcome any challenges?
21:09	Aylie and Michelle talk about how teachers' mathematical confidence and content knowledge can be developed through collaborative acts, such as working through tasks together, sharing problems of practice, co-planning and so on. • How do you use collaborative time to develop the collective capacity of teaching? • What else could you try? • What are some barriers to collaboration and what are some solutions?
24:25	• Aylie and Michelle discuss the idea that while planning is our core business, it doesn't always mean that we need to create new programs and plans. Planning also involves intentionally choosing resources, adapting them and making discerning choices in how we enact them. This advice is echoed by the NSW Department of Education (DoE) where they share how to use the sample units What are some things that you usually do when deciding how to

Timestamp	Possible points for reflection and discussion
	adapt tasks and sequences? • What do you tend to consider when deciding on the pedagogies you want to use to enact tasks? • Can you talk about a time when you've adapted a task or the way you've enacted the task?
27:28	Variation Theory centres around developing follow-up experiences where we deliberately alter an aspect of the original task to deepen understanding around some big idea or concepts. Aylie discusses this with regards to consolidation, describing it as 'a little bit the same, a little bit different'. • Share with your colleagues how this looked in your classroom or some ideas you have about how you might add on to tasks to help build understanding.
After viewing	• What are some things you are already doing well in your planning? • What are some things you can start doing tomorrow? • What are some things you may revise, pause or stop? • How has your thinking changed or deepened about collaborative planning?

Reflection notes

	What I thought before viewing and discussing the PL	What I think now, after or while viewing the PL	Things I'd like to learn more about
Collaborative planning			
Task selection and enactment			
Other notes			

Suggested resources

References

Articles

Attard C (2011) 'The Influence of Teachers on Student Engagement with Mathematics During the Middle Years', *Mathematics: Traditions and [New] Practices*, 68–74, accessed 31 October 2024.

Burns M (2014) 'Uncovering the Math Curriculum', *Educational Leadership*, 72(2):64–68, accessed 31 October 2024.

Davidson A (2019) 'Ingredients for planning student-centred learning in mathematics', *APMC (Australian Primary Mathematics Classroom)*, 24(3):8–14, accessed 31 October 2024.

Davidson A (2023) 'Applying a Model for Planning in Mathematics (MPM)', *APMC*, 27(4):28–34, accessed 31 October 2024.

Davidson A, Hamilton S, Gervasoni A, Cram K and Cullen R (2023) 'An approach to facilitating collaborative planning in mathematics', *APMC*, 28(1):7–13, accessed 31 October 2024.

Munns G (2021) 'All about MeE: The Fair Go Program's Student Engagement Framework', *Journal of Professional Learning*, 13:3–7, accessed 31 October 2024.

Texts

Clarke D and Roche A (2014) *Engaging Maths: 25 Favourite Lessons*, 2nd edn, Mathematics Teaching and Learning Centre, Australia.

Clarke D, Roche A and Sexton M (2022) *Engaging Maths: 21 More Favourite Lessons*, Mathematics Teaching and Learning Centre, Australia.

Reys R, Lindquist M, Lambdin DV, Smith NL, Rogers A, Cooke A, Bennett S, Ewing B and West J (2020) *Helping Children Learn Mathematics*, 3rd Australian edn, John Wiley & Sons Australia Ltd.

Van de Walle J, Karp K, Bay-Williams JM, Brass A, Bentley B, Ferguson S, Goff W, Livy S, Marshman M, Martin D, Pearn C, Prodromou T, Symons D and Wilkie K (2019) *Primary and Middle Years Mathematics: Teaching Developmentally*, 1st Australian edn, Pearson Education Australia, Melbourne.

Professional learning

State of New South Wales (Department of Education) (n.d.) *Designing and teaching a mathematics unit (Mathematics K-2 micro-learning)*, MyPL (My Professional Learning) website, accessed 31 October.

Websites and online resources

Attard C (n.d.) *Are you an engaged teacher?*, Engaging Maths website, accessed 31 October 2024.

Australian Academy of Science (2024) *reSolve* [website], accessed 31 October 2024.

Finkel and Cook (2020) *Math for Love* [website], accessed 31 October 2024.

MAV (Mathematical Association of Victoria) (2020) 'MAV Learning Activities', Learning Activities Years F to 9, MAV website, accessed 31 October 2024.

NESA (NSW Education Standards Authority) (2022) 'Making connections in Mathematics K–2: Early Stage 1', Mathematics K–10 Syllabus, NSW Curriculum website, accessed 31 October 2024.

——(2022) 'Making connections in Mathematics K–2: Stage 1', Mathematics K–10 Syllabus, NSW Curriculum website, accessed 31 October 2024.

——(2022) 'Making connections in Mathematics 3–6: Stage 2', Mathematics K–10 Syllabus, NSW Curriculum website, accessed 31 October 2024.

——(2022) 'Making connections in Mathematics 3–6: Stage 3', Mathematics K–10 Syllabus, NSW Curriculum website, accessed 31 October 2024.

——(2022) 'Teaching and learning support', Mathematics K–10 Syllabus, NSW Curriculum website, accessed 31 October 2024.

University of Cambridge (n.d.) *NRICH* [website], accessed 31 October 2024.