Submission to the Independent Review of Education in Tasmania

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Introduction

The Centre for Independent Studies (CIS) is a leading independent public policy think tank in Australasia. Our work is driven by a commitment to the principles of a free and open society. The CIS is independent and non-partisan in both its funding and research, does no commissioned research, nor takes any government money to support its public policy work. The Education Program at CIS has long promoted reform in the Australian education sector, recommending evidence-based policy designed to facilitate improved student outcomes.

CIS research papers relevant to this Inquiry include:

- Kerry Hempenstall and Jennifer Buckingham, Read about it: Scientific evidence for effective teaching of reading. Research Report 11, The Centre for Independent Studies, March 2016.

- Sarah Powell, Elizabeth Hughes and Corey Peltier, Myths That Undermine Maths Teaching. Analysis Paper 38, The Centre for Independent Studies, August 2022.

- Tim McDonald, Teaching Behaviour: How classroom conduct can unlock better learning, Analysis Paper 55, The Centre for Independent Studies, September 2023.

- Tom Bennett, Conduct Becoming: The importance of the behaviour curriculum, Analysis Paper 56, The Centre for Independent Studies, September 2023.

- Toni Hatten-Roberts, The need for speed: why fluency counts for maths learning. Analysis Paper 57, The Centre for Independent Studies, October 2023.

- David C. Geary, Facing Up to Matsh Anxiety: How It Affects Achievement and What Can Be Done About It. Analysis Paper 61, The Centre for Independent Studies, January 2024.

- Sarah Powell, Sarah King and Sarah Benz, Maths Practices You Can Count On: Five Research-Validated Practices in Mathematics. Analysis Paper 62, The Centre for Independent Studies, February 2024.

- Trisha Jha, What is the Science of Learning? Analysis Paper 63, The Centre for Independent Studies, February 2024.

- Trisha Jha, Implementing the Science of Learning: Teacher Experiences. Research Report 47, The Centre for Independent Studies, February 2024.

- Kelly Norris, Screening That Counts: Why Australia Needs Universal Early Numeracy Screening. Research Report 49, The Centre for Independent Studies, June 2024.

- Siobhan Merlo, The Science of Maths and How to Apply It. Analysis Paper 71, July 2024.

- Trisha Jha, Learning Lessons: the future of small-group tutoring. Analysis Paper 73, The Centre for Independent Studies, July 2024.

- Erica S. Lembke, Emily L. Singell, Gabriella Lyth Donofrio and Megyn Martin. Using Curriculum-Based Measurement for Primary School Maths Screening. Analysis Paper 75, The Centre for Independent Studies, August 2024.

What this submission covers

This submission will address selected themes from the Consultation paper and selected items of the Terms of Reference, per below.

Key themes from the Consultation Paper	Terms of Reference item
1. Defining educational success	N/A
2. Strengthening supports and engagement for all learners at all stages of their education	1. Implements evidence-based whole of school practices and pedagogy that leads to improved student educational outcomes and behaviour; 2. Delivers high quality teaching that is evidence based and meets the needs of students at all levels;
3. Outcomes at the conclusion of the formal years of schooling	2. Delivers high quality teaching that is evidence based and meets the needs of students at all levels;
5. Accountability for improved outcomes	5. Is accountable for improved student outcomes, including in remote and rural areas.

Summary of recommendations

Recommendation 1: The Tasmanian government to develop, or partner with relevant experts to develop, resources suitable for helping schools to develop a behaviour curriculum.

Recommendation 2: The Tasmanian government to take a clear position on the topic of what evidence-based teaching looks like, which is the use of explicit teaching frameworks based on the science of learning.

Recommendation 3: The Tasmanian government should work with schools to surface high-quality and relevant curriculum teaching resources that utilise explicit models of teaching (or partner with other providers if this is not possible) and make these available to all schools.

Recommendation 4: To complement and build on the work done in literacy, the Tasmanian government should make maths and numeracy a key focus of further reforms.

Recommendation 5: Invest in curriculum support and professional development resources to enable more schools to prevent students falling behind, with a more consistent and evidence-based approach to Tier 1 instruction.

Recommendation 6: Develop a repertoire of screening tools for all year levels that are most predictive of success in the domain (reading or maths) as well as more detailed diagnostic assessment for students flagged through initial screening.

Recommendation 7: Develop and research a numeracy screening tool for Foundation and Year 1 students based on CIS number sense research.

Recommendation 8: Conduct a desktop review of interventions deemed promising based on existing literature and practice in Australia and overseas, and use it to form the basis for randomised controlled trials and efficacy studies in Australian schools. The findings should be used to inform planning for scale.

Recommendation 9: The Tasmanian government should move towards a pilot program of MTSS that embeds all the enabling factors discussed above, and where pilot schools are selected carefully on the basis of capacity as well as need. Findings from research in pilot schools are then used to create a playbook for effective MTSS delivery.

Recommendation 10: Both NAPLAN and PAT data should be monitored to see whether students are catching up, keeping up or moving up.

Recommendation 11: DECYP and its schools should conduct an annual behaviour survey of students and teachers and report on this at both the school level at regular intervals and annually at the state level in annual reports.

Recommendation 12: Based on the WA model of Year 9 NAPLAN or OLNA being a prerequisite for senior secondary certification, Tasmania should implement a similar model.

Recommendation 13: School-level accountability should occur through schools setting their own strategic plans that contain localised targets, but schools should also be responsive to their communities by reporting publicly to their communities at regular intervals e.g. every three years.

Recommendation 14: DECYP should also report statewide or regional figures in the areas covered above, such as by reporting the proportion of schools meeting their goals, on track to meeting their goals or making insufficient progress.

1. Defining educational success

Addresses Theme 1 and Theme 3

The Review's Consultation paper noted:

> … the question of what success looks like varies among stakeholders. A common challenge is the lack of a consistent, achievable narrative that defines the various forms educational success can take. Without this narrative and the appropriate measures, it is difficult for all young Tasmanians to see their future opportunities and to aspire to and achieve their full potential.

This submission takes the view that, although educational success may be contested, 'educational success' in the broadest possible term is not the subject of this inquiry. Instead, it is the school system's role and contribution to educational success which — compared to other institutions or government functions in society — is significant and unique (i.e., it cannot be reasonably achieved through any other party). In other words, a high-performing school system is a necessary condition for educational success, but in cases where that is not sufficient, it is the role of other institutions in society to meet those needs, rather than for the school system to lose sight of its unique public function.

Nevertheless, some definition of 'educational success' is still required to make proposals relating to a high-performing school system. This submission takes the view that a high-performing school system is one in which all students, at the conclusion of compulsory schooling, have been equipped with the knowledge and skills that enable them to choose their next steps out of a broad range of opportunities. Put another way, a high-performing school system is one in which no student is limited in their post-compulsory school options due to deficits in what they know and can do.

Student learning is fundamentally shaped by teaching practices, and the impact of those practices is mutually reinforced by the learning environment and its impact on student behaviour. While this submission will draw a distinction between CIS research that focuses on teaching practices and research that focuses on school/class culture and student behaviour, it is a distinction made for convenience only. No teaching practice can be successful without a productive learning environment, and a productive learning environment is intended for the purpose of successful teaching and learning.

2. What does successful teaching look like?

Addresses Theme 1, and TOR items 1 and 2

Productive learning environments

PISA surveys of the disciplinary climate in classrooms show that Australia overall is ranked 69th out of 76th within the OECD.[1] Moreover, OECD analysis finds that students in schools with greater disciplinary environments record higher achievement — with Australian students achieving around 7 months higher in PISA's reading assessment with a one-unit increase in the disciplinary index. This is

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[1] OECD (2019). PISA 2018 Results – Volume III. Table III B1.3.1.

approximately the difference in discipline recorded between Australia and PISA-participating Chinese provinces).[2]

Low-level behaviour concerns are typically hard to measure as they manifest in disengagement and inattentiveness rather than non-compliance. Discussing a longitudinal study of students in WA he worked on, CIS contributor Tim McDonald noted 40% of students displayed unproductive behaviours regularly. Of these, "more than half were in a 'compliant disengaged' group, described by their teachers as uninterested in their schoolwork, unprepared for lessons, and quick to give up tasks they found difficult or boring. The most common unproductive behaviour identified by teachers was inattentiveness."[3] This study also found the 40% of students who displayed unproductive behaviours were on average one to two years behind peers in literacy and numeracy and that this was just as bad as those who teachers identified as actively disruptive. In other words, surveys that seek to capture instances of misbehaviour underestimate the scale of the problem caused by inattentive behaviours and, consequently, underestimate the disruption to learning. McDonald notes further on the value of ordered classrooms for student wellbeing:

> A well organised classroom is consistent. A consistent classroom is inclusive. Consistency is an important element to establish with students from day one. Knowing how the class will work and what is expected of them increases anticipation rather than anxiety about the year ahead. Students with anxiety or worries about how they will fit in or belong in a class, or a school, are reassured from day one on how the class will be structured and organised. A consistent classroom is predictable, reliable and stable because there are clear norms of behaviour, routines to follow, and rules. Coupled with this behavioural consistency is the consistency of instruction, with clear learning objectives and guidance from the teacher.

A behaviour curriculum is essentially a school-based system made up of principles and practices for ensuring every student learns how to behave in a manner that is appropriate for the school environment. Tom Bennett, behaviour adviser to the English Department for Education and CIS contributor, elaborates in his CIS paper, *Conduct Becoming*:[4]

> … the school has a duty to teach children the habits of conduct that will maximise their safety, their opportunity to learn, and their dignity. If they do not do this, then the following will happen: if the school largely serves demographics of children advantaged with social capital, habituated into habits of institutional success — sharing, waiting, helping, perseverance, etc., — then the school will be fortunate enough to experience high levels of compliance, and only deal with relatively minor levels of disruption. This is the case in, e.g., highly-affluent private schools, schools with small intakes, or younger children. The other thing that will happen if the school does not serve such a polished and compliant community of learners, is that misbehaviour will be high, and the school will constantly fight the same battles on a gruelling and endless basis.

The lack of clarity, predictability and routine in a school that lacks a well-implemented behaviour curriculum will not only reduce learning through reduced time-on-task, but can detract from student

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[2] OECD (2019). PISA 2018 Results – Chapter 3.

[3] Tim McDonald, Teaching Behaviour: How classroom conduct can unlock better learning, Analysis Paper 55, The Centre for Independent Studies, September 2023.

[4] Tom Bennett, Conduct Becoming: The importance of the behaviour curriculum, Analysis Paper 56, The Centre for Independent Studies, September 2023.

safety and wellbeing. Bennett notes that whatever the standards of conduct and the mechanisms for implementing them are, consistency is key:
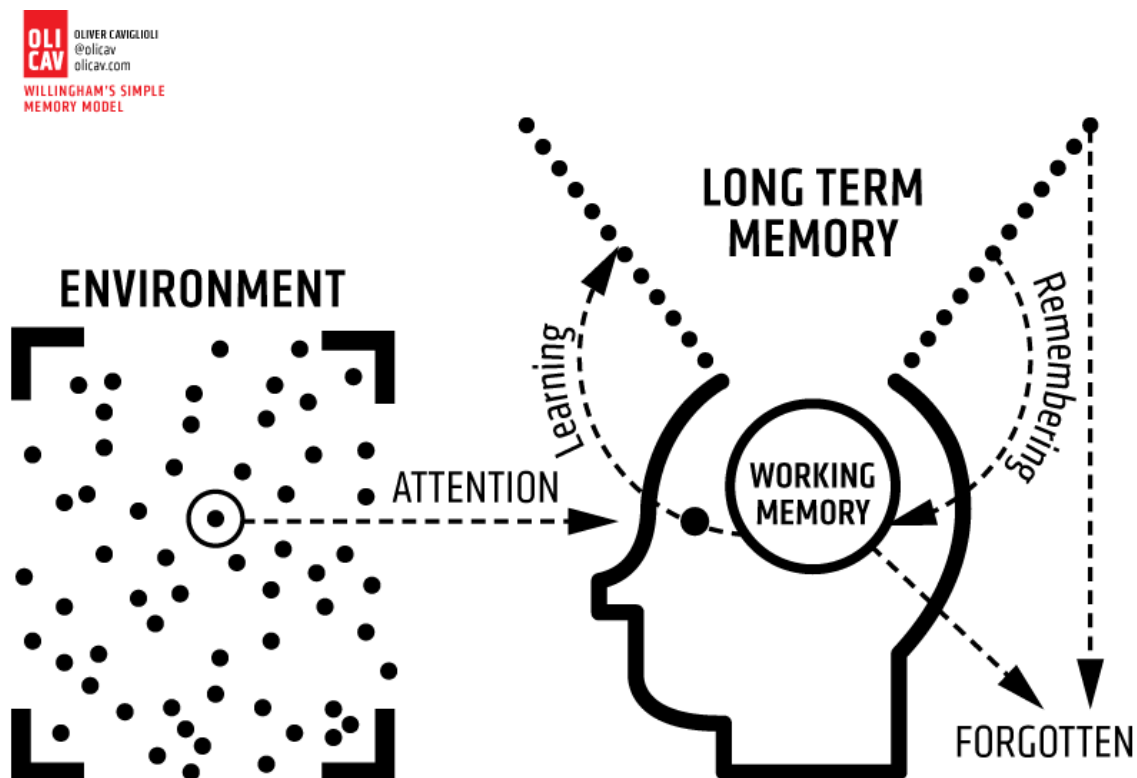
> These behaviours are clearly taught, repeated and insisted upon, until they become habit for all students. Leaders are encouraged to define what behaviours they want everyone to perform quickly and efficiently. Once these behaviours have been defined, they can be shared, teachers trained, and then students taught to follow them. And the elegant reality of this is that students are being taught how to be successful, not just how to avoid failure. The emphasis is on what they should do, not what should not be done.

Since the publication of these report, behaviour has become a national priority for education ministers.[5] Accordingly, the Australian Education Research Organisation (AERO) has released a suite of resources intended to assist schools in the development of a behaviour curriculum.[6]

Human cognition and learning

Not only are a behaviour curriculum, routines and scripts – as discussed above – necessary to manage student behaviour, it is only by managing the learning environment that the teacher has the opportunity to direct student attention. As Figure 1 shows, this is a necessary precondition for utilising the cognitive processes underpinning learning.

Figure 1: Oliver Caviglioli's illustration of Daniel Willingham's Simple Memory Model

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WILLINGHAM'S SIMPLE MEMORY MODEL

LONG TERM MEMORY

ENVIRONMENT

ATTENTION

Learning

WORKING MEMORY

Remembering

FORGOTTEN

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[5] Education Ministers' Meeting communique, 26 April 2024. Department of Education (Commonwealth).
[6] Australian Education Research Organisation (AERO), Classroom management: guides and resources.

The term 'science of learning' is used to describe the connection between 1) insights from cognitive science and educational psychology and 2) the teaching practices that are supported (and not supported) by those insights.[7] Key cognitive science concepts include:

- **Biologically primary knowledge (BPK) and biologically secondary knowledge (BSK):** BPK includes things like basic social relations and problem-solving skills and does not need to be taught; BSK (what schools are for) must be taught explicitly.
- **Domain-specific and domain-general skills:** domain-general skills overlap with biologically-primary knowledge but critical thinking and analysis are specific to domains such as Maths, History etc.
- **Working memory and long-term memory:** working memory is severely limited and can only handle small amounts of new information, making it a funnel to long-term memory. A strong long-term memory can help strengthen working memory.
- **Cognitive load theory:** given these models of human cognition, teachers should design instruction in a way that optimises the burden on working memory in a way that best helps learning.

The science of teaching

The insights from cognitive science suggest a better way to teach and points us in the direction of practices that might be effective. If working memory is limited, information should be encountered in small steps and practiced, and clear, explicit, teacher-directed instruction will make this process easier. It suggests that independent student work should be carefully placed within a larger instructional sequence to limit the chances of overloading working memory. If working memory relies strongly on long-term memory and novel information is more likely to 'stick' when it can be connected to existing knowledge, teaching and learning should involve the same content and be practiced over an extended period of time to ensure it is retained.

The teaching approach best supported by the evidence is *explicit instruction* of a well-sequenced, knowledge-focused curriculum. Some key features of explicit instruction include:

- Careful ordering of curriculum content so that new information and concepts are built sequentially.
- Explanation of new information in small steps, taught through modelling and worked examples, with student practice after each step.
- Asking questions and checking for all students' understanding of what has been taught before gradual release of students for independent work and more complex tasks.
- Regular review of previous content to ensure retention and connection to new knowledge.

In other recent research from the CIS, school leaders and teachers participated in interviews and focus groups about their experiences implementing science of learning-aligned practices such as explicit teaching and the science of reading.[8] Participants spoke of the sense of professional satisfaction they experienced from being able to see rapid and meaningful student learning growth after switching to these methods.

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[7] Trisha Jha, What is the Science of Learning? Analysis Paper 63, The Centre for Independent Studies, February 2024.
[8] Trisha Jha, Implementing the Science of Learning: Teacher Experiences. Research Report 47, The Centre for Independent Studies, February 2024.

However, another clear thread was the lack of formal support from school systems, initial teacher education and professional development opportunities which left teachers forced to rely on informal methods of building up their knowledge and skills.

Based on these findings, the report makes the case for a combination of top-down and bottom-up approaches to scale good practice. Top-down measures include stronger system-level messaging on the importance of the science of learning, the removal of contradictory advice and provision of greater support in curriculum, assessment, and resources. Bottom-up measures include identifying and enabling successful schools to share knowledge and practice, so others can learn from their success.

Evidence-based approaches to teaching mathematics

This submission notes the existing work done by the present Tasmanian Government to lift literacy outcomes in the community, including a focus on schools' role. The CIS has previously produced research and advocacy on the topic of literacy.[9] In order to fill the remaining policy and practice gap, this submission will focus on specific evidence-based practices that relate to the teaching of mathematics and numeracy. Research shows early mathematics appears to be a stronger predictor of later achievement than early reading or behaviour.[10]

In a recent CIS report, Siobhan Merlo elucidates the science of learning as applied to mathematics. Some key findings are as follows:[11]

- Teacher effectiveness in mathematics can be improved by aligning instruction with scientific evidence about how students learn. This is particularly relevant to mathematics which represents a large body of biologically secondary knowledge (BSK).
- Working memory limitations therefore apply to the learning of mathematics, and spaced and retrieval practice to ensure information is stored in long-term memory is essential to managing cognitive load. Knowledge, including mathematical knowledge, is stored in schemas held in long-term memory. Schemas for mathematical knowledge can be built and refined through the effective use of representations alongside abstract symbols (the Concrete-Pictorial-Abstract approach), deliberately connecting prior knowledge to new knowledge and the provision of effective feedback.
- As mathematics is BSK, explicit instruction should be the tool of choice for acquisition and fluency phases of learning. Only when students have fluency with prerequisite skills, problem-solving and reasoning should be developed through minimally-guided approaches such as student direct and investigative tasks.
- Positive dispositions towards mathematics can be supported through effective instruction where students are supported to achieve success. Choosing teaching approaches that align with students' stage of learning and providing timely is important for this success.

The 'science of maths', as explored by Merlo, has several implications for instructional 'dos and don'ts'. In a 2022 paper, US education researchers Sarah Powell, Elizabeth Hughes and Corey Peltier debunk seven commonly-held myths about teaching maths:

[9] Kerry Hempenstall and Jennifer Buckingham, Read about it: Scientific evidence for effective teaching of reading. Research Report 11, The Centre for Independent Studies, March 2016.

[10] Duncan et al. (2007). School readiness and later achievement. Developmental Psychology, 43, 1428–1446.

[11] Siobhan Merlo, The Science of Maths and How to Apply It. Analysis Paper 71, July 2024.

1. that conceptual understanding should precede procedural understanding, when in fact they support and reinforce each other;
2. that teaching algorithms is harmful, when in fact evidence demonstrates that the effective teaching of algorithms alongside a focus on understanding enhances achievement,
3. inquiry learning is the best approach, when in fact research shows that instruction aligned to students' stage of learning produces the best outcomes and novice learners benefit most from explicit instruction;
4. productive struggle is important, when in fact strategies where students receive explicit instruction prior to problem-solving are more effective than those that don't;
5. growth mindset and executive function training increase achievement, when in fact academic interventions have far more significant and reliable effects on achievement; and
6. timed assessments cause mathematics anxiety, when in fact mathematical fluency is an essential component of mathematical knowledge and timed testing is an effective instructional technique for both developing and measuring fluency when used at the right time in the learning process.

The researchers argue that maths teaching must reject unsubstantiated methods and focus on proven pedagogy to ensure all students succeed.[12]

Building on this, Australian educator Toni Hatten-Roberts argues that the prioritising of conceptual understanding of mathematics over procedural and factual fluency is a key cause of students' declining mathematics outcomes.[13] Hatten-Roberts makes the case that mathematical fluency is a foundational competency that underpins higher-level skills such as problem-solving and reasoning, and it can be achieved in the classroom through retrieval, spaced and interleaved practice, and timed testing. She also draws on the experience of the UK's Multiplication Tables Check at the end of Year 4 to argue for similar screening in Term 3 of Year 4 of Australian students.

Cognitive psychologist and maths researcher David C. Geary notes from PISA data that an increase in its Index of Mathematics Anxiety is associated in a decrease in mathematics achievement of 18 score points (about a year's worth of learning). However, Geary argues that rather than being the cause of low achievement, maths anxiety is its effect: students who experience early difficulties with maths are more likely to suffer from maths anxiety, rather than the other way around. But because maths anxiety is poorly understood, 'solutions' abound that reduce the role of timed tests and procedural fluency, though evidence shows these are likely to compound problems rather than solve them.[14]

In a further paper, education researchers Sarah Powell, Sarah King and Sarah Benz outline the evidence base for and practice implications of five research-validated maths teaching practices: (1) focus on the language of mathematics, (2) use multiple representations, (3) be systematic and explicit with instruction, (4) build fluency, and (5) focus on word problems. The authors also emphasise the importance of formative assessment practices that track student progress and enable teachers to modify instruction accordingly.[15]

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[12] Sarah Powell, Elizabeth Hughes and Corey Peltier, Myths That Undermine Maths Teaching. Analysis Paper 38, The Centre for Independent Studies, August 2022.

[13] Toni Hatten-Roberts, The need for speed: why fluency counts for maths learning. Analysis Paper 57, The Centre for Independent Studies, October 2023.

[14] David C. Geary, Facing Up to Matsh Anxiety: How It Affects Achievement and What Can Be Done About It. Analysis Paper 61, The Centre for Independent Studies, January 2024.

[15] Sarah Powell, Sarah King and Sarah Benz, Maths Practices You Can Count On: Five Research-Validated Practices in Mathematics. Analysis Paper 62, The Centre for Independent Studies, February 2024.

Though each of these papers has a slightly different function and focus, they identify similar problems in the current teaching of mathematics, most notably the privileging of conceptual understanding, problem-solving and reasoning and the ongoing negligence of fluency as an instructional focus, at least in part due to a misplaced fear of timed testing as the root cause of maths anxiety.

The papers also advocate for the application of explicit teaching principles as a basis to address this issue: for students to experience academic success and the ensuing engagement and wellbeing benefits, there should be a well-designed curriculum where concepts are broken up into smaller pieces and taught, practiced, and demonstrated systematically. Such an approach addresses inequity through ensuring that all students, regardless of their level of advantage, have opportunities to build the knowledge necessary to problem-solve and reason effectively.

Policy implications

- Recommendation 1: The Tasmanian government to develop, or partner with relevant experts to develop, resources suitable for helping schools to develop a behaviour curriculum.
- Recommendation 2: The Tasmanian government to take a clear position on the topic of what evidence-based teaching looks like, which is the use of explicit teaching frameworks based on the science of learning.
- Recommendation 3: The Tasmanian government should work with schools to surface high-quality and relevant curriculum teaching resources that utilise explicit models of teaching (or partner with other providers if this is not possible) and make these available to all schools.
- Recommendation 4: To complement and build on the work done in literacy, the Tasmanian government should make maths and numeracy a key focus of further reforms.

3. Meeting the needs of all students

Addresses Theme 2, and TOR items 1 and 2

Testing data shows many students are not achieving

NAPLAN data reveals roughly a third of Australian students lack proficiency (defined by ACARA as achieving within the 'Needs Additional Support' or 'Developing' categories) in foundational skills.[16] Figure 2 shows these proportions for Tasmania, which are also consistently higher than the national average.

Figure 2: Proportion of Tasmanian students lacking proficiency in NAPLAN Reading and Numeracy, 2024

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[16] Australian Curriculum, Assessment and Reporting Authority (ACARA), NAPLAN national results 2023.
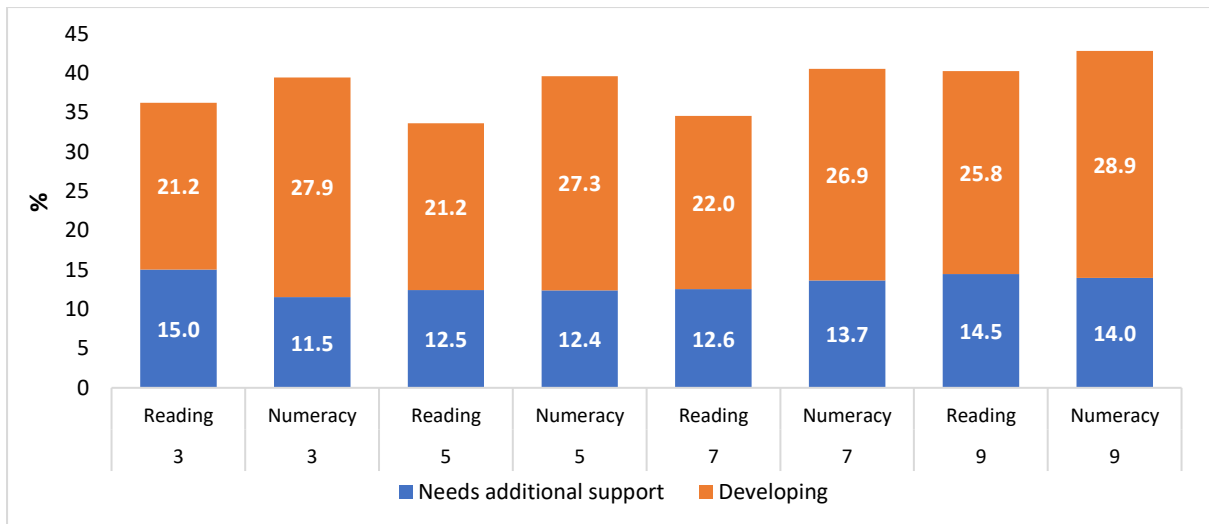
The Program for International Student Assessment of 15-year-olds is also helpful as an indicator of what proportion of students have met certain benchmarks as they prepare to enter senior secondary school.

Table 1 shows achievement of **proficiency** in PISA testing. In Australia, to be proficient means a student has met "a challenging but reasonable expectation of student achievement… with students needing to demonstrate more than elementary skills."[17] The results show Tasmania performs lower than the Australian average and lower than the OECD average in mathematical literacy.

Table 1: Percentage achieving the National Proficient Standard, PISA 2022

	Tasmania	Australian average	OECD average
Mathematical literacy	42%	52%	46%
Scientific literacy	51%	58%	50%
Reading literacy	51%	57%	49%

Another PISA benchmark is the '**low performers'** benchmark: students who perform below a Level 2 band. Achieving below Level 2 means a student's proficiency is "too low to enable them to participate effectively and productively in life." Table 2 shows the proportion of low performers for Tasmania, Australia and the OECD average:

Table 2: Percentage not attaining Level 2 achievement (low performance), PISA 2022

	Tasmania	Australian average	OECD average
Mathematical literacy	34%	26%	31%
Scientific literacy	22%	20%	25%
Reading literacy	26%	21%	26%

Taken together, Tables 1 and 2 show around half — more in Mathematics — enter senior secondary do not meet the 'challenging but reasonable' proficiency benchmark, but between a quarter and a third do not meet a benchmark that 'enables them to participate effectively and productively in life'.

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[17] De Bortoli et al. (2023). *PISA 2022.* Reporting Australia's results. Volume I: Student performance and equity in education. Australian Council for Educational Research.

A multi-tiered system of supports (MTSS) can meet student needs

A policy consensus has emerged on the use of a multi-tiered system of supports; see Box 1 for details of the relevant policy developments.

Box 1: The multi-tiered system of supports in Australia

Whether a student is 'responsive to intervention' has been considered best practice for students with learning difficulties (with or without a diagnosis) for some time, but it is only recently that Response to Intervention (RTI) and the linked term Multi-Tiered System of Supports (MTSS) have entered the mainstream education lexicon.

During the COVID-19 pandemic, tutoring was proposed to help students catch up amid regular and prolonged periods of school closure and remote learning. By the end of 2020, both the NSW and Victorian governments had announced funding for such programs.

As the pandemic-driven concern has receded, and with new NAPLAN reporting from 2023 painting a clearer picture of how many students are behind, policymakers have recommended tutoring continue in some shape or form. Both the Grattan Institute[18] and AERO published research in early 2023 that provided advice to policymakers and practitioners about how to implement effective small-group intervention in Australian schools.

In August 2023, Federal Education Minister Jason Clare said "all of the evidence shows that [small-group tutoring is] a key part of helping children who fall behind here to catch up. Those small groups with one teacher and a couple of children and the work that they do over the course of a couple of weeks can have a massive impact on a child's education."[19]

This was followed by the government-commissioned Better and Fairer Review recommending the implementation of small-group catch-up tutoring as part of an overarching Multi-Tiered System of Supports (MTSS) framework,[20] reflected in the subsequent Agreement's statement that parties will commit to:[21]

> Whole-of-system and/or whole-of-school approaches that identify student learning needs early and provide tiered and targeted, intensive supports, in line with evidence-based teaching and a 'multi-tiered systems of support' approach.

While a consistent application of effective teaching practices (as described previously) should be sufficient to ensure the majority of students achieve at desired levels, there will always be some students who require additional support.

As CIS research has explored, strong whole-class teaching practice (see Figure 3) is a necessary precondition for effective and efficient intervention processes. A stronger Tier 1 can represent a

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[18] Julie Sonnemann and Jordana Hunter, *Tackling under-achievement: Why Australia should embed high-quality small-group tuition in schools.* The Grattan Institute, January 2023.

[19] Jason Clare as interviewed by Sabra Lane, ABC Radio AM, 23 August 2023

[20] Australian Government, *Improving Outcomes for All: The Report of the Independent Expert Panel's Review to Inform a Better and Fairer Education System*, Department of Education.

[21] Department of Education, Heads of Agreement (Better and Fairer Schools Agreement 2025-2034), July 2024.

rising tide that not only lifts all boats, but reduces the proportion of students requiring supplementary support and intervention.[22]

AERO lists the key ingredients for MTSS success as:[23]

1. Using proven teaching methods for all students;

2. Regular testing of all students to identify gaps in learning;

3. Delivering frequent small group or 1:1 interventions with a focus on these learning gaps; and

4. Continuous data-based tracking of student progress to ensure interventions delivered real gains.

Figure 3: Representation of a Multi-Tiered System of Supports
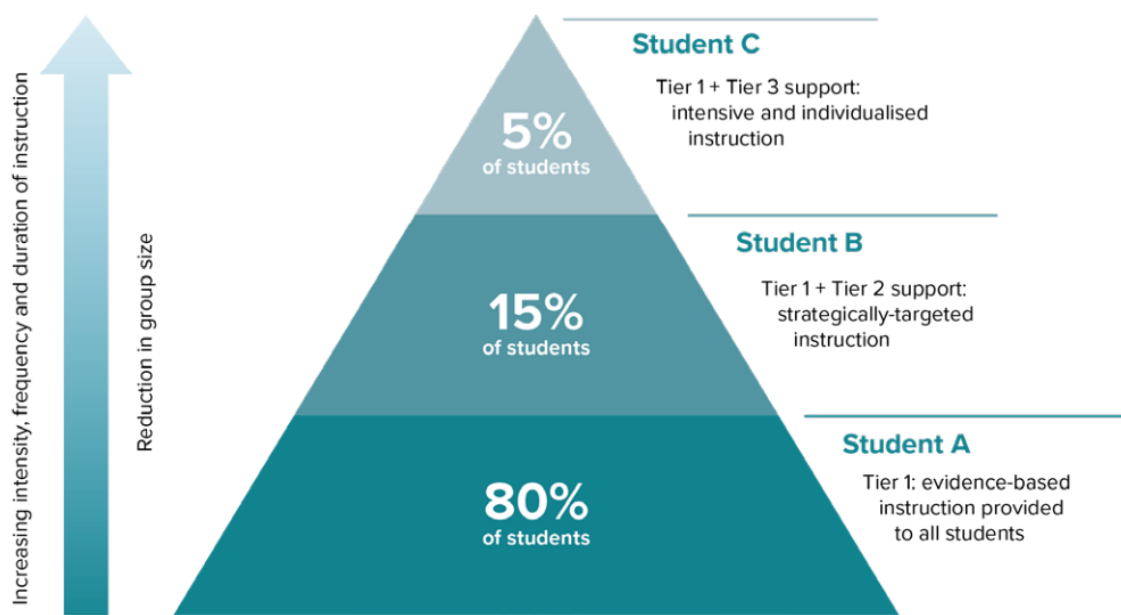
Source: Australian Education Research Organisation

A variation of the traditional three-tiered model includes a 'Tier 1.5', that sits between Tier 1 and 2: a class-wide intervention for when screening data suggests a large amount of educational risk in a classroom or across a year level.[24] Class-wide interventions can involve the following features:

• Fluency-based peer tutoring based on materials students have already learned;
• High opportunities for response and error correction within carefully selected pairings;
• Students take turns practising then complete timed intervals of task completion to improve performance; and
• Processes heavily structured and materials gradually increase in difficulty.

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[22] Trisha Jha, Learning Lessons: the future of small-group tutoring. Analysis Paper 73, The Centre for Independent Studies, July 2024.

[23] Australian Education Research Organisation (AERO), Supporting secondary students lacking foundational literacy and numeracy skills: research summary, May 2023.

[24] Kovaleski et al. (2023) The RTI Approach to Evaluating Learning Disabilities (2nd ed.) The Guildford Press, New York, pp. 46-47.

Intensification of instruction, regardless of 'tier', can also be achieved in other ways. Greater use of explicit instruction principles — providing simple explanations, modelling solutions, backwards fading/reduction of scaffolding, practice opportunities — as well as higher dosage through increased opportunities to respond, are factors of intensification that can be used at the whole-class level as well.[25] Opportunities to respond (OTRs) are factors of ordinary classroom practice and intensifying quality and/or rate of OTRs is a comparatively resource-efficient way of increasing instructional intensity.[26]

As these sorts of changes seek to shift educational outcomes at the whole-class level without creating vast new programs requiring additional staff, they represent a cost-effective way to meet the educational needs of a higher proportion of students.

Screening and assessment

Within the MTSS framework, efficient and accurate screening processes are required to monitor all students and identify those in need of further support.[27] Screening tools assess student capacity on measures that are predictive of success, and students flagged by screening should undergo further diagnostic assessment to understand what form of intervention is required.

Success is contingent on schools having access to both sets of tools, knowledge of which is required, and data skills to use the results. If any of these are lacking, there is potential for inaccurate identification of students for intervention.

However, knowledge and use of effective screening and diagnostic tools is inconsistent within Australia and the same can likely be said for Tasmania. Some progress has been made with widespread — but not yet universal — adoption of the Year 1 Phonics Screening Check and recognition of the need for an equivalent number screening tool. Despite the range and variety of current assessment tools, most are interviews (in early years) or achievement tests (for all year levels) and are not fit for purpose as screening. While the gradual adoption of a consistent approach to Year 1 screening is a good start, effective MTSS requires screening to be regular part of ongoing practice in every year level and in both reading and mathematics domains.

Therefore, policymakers should ensure appropriate tools are available, or direct schools to existing resources. If existing resources are used, then cut scores and decision rules that are tailored to the Australian context must also be part of this work. Both the access to relevant tools and the ability to use the data are critical to improving schools' decision-making capabilities.

For literacy, one tool used in many schools is the University of Oregon's DIBELS (Dynamic Indicators of Basic Early Literacy Skills) which has been adapted for Australian spelling and vocabulary and can be used from Foundation to Year 8. For older age groups, De Bruin et al. recommended a test of oral reading fluency for students entering Year 7 as a universal screening tool, with flagged students then sitting additional tests as appropriate on phonemic awareness, decoding and vocabulary.[28]

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[25] Fuchs et al. (2017). "The taxonomy of intervention intensity." *Teaching Exceptional Children*, 50, 35-43. doi: 10.1177/0040059917703962

[26] Van Camp et al. (2020) "Increasing Opportunities to Respond to Intensify Academic and Behavioral Interventions: A Meta-Analysis", *School Psychology Review*, 49:1, 31-46, DOI: 10.1080/2372966X.2020.1717369

[27] Erica S. Lembke, Emily L. Singell, Gabriella Lyth Donofrio and Megyn Martin. Using Curriculum-Based Measurement for Primary School Maths Screening. Analysis Paper 75, The Centre for Independent Studies, August 2024.

[28] de Bruin et al. (2023) Supporting students significantly behind in literacy and numeracy: a review of evidence-based approaches, edresearch.edu.au, p. 67

While there is a range of well-supported options for literacy difficulties, evidence for mathematics and numeracy is much less known. The US's National Centre for Intensive Intervention (NCII) also evaluates the screening tools on offer from different third-party providers according to the strength of evidence as well as their usability for screening at different points in the year (three times a year being the norm).[29]

Recognising this gap in Australian research, recent CIS research authored by Kelly Norris advocates the development of a screening tool suitable for Foundation and Year 1 students, based on a robust conception of number sense.[30] 'Number sense' represents a body of core knowledge about whole numbers, which predicts mathematics achievement and underlies the development of more complex mathematical skills and knowledge. Number sense encompasses three domains:

- Number: saying, reading, and writing numbers and counting;
- Number relations: comparing and understanding numbers in terms of 'more' and 'less'; and
- Number operations: understanding and facility with addition and subtraction

The report also shows that number sense is 'teachable' and students who receive high quality early interventions in number sense can experience significant and lasting benefits.

Despite the benefits, awareness of, and screening for, these key foundational skills is not systematically implemented in Australian schools. In contrast to achievement testing (such as PAT Maths — used in Tasmanian schools) screening does not measure capability with the curriculum but measures the risk of future underachievement by focussing on core number competencies which are instrumental to progress in mathematics. An exclusive focus on achievement means students at risk are not consistently identified early enough to maximise their chance of success.

Evidence-based interventions

Once students have been identified for further support and their specific instructional needs identified through diagnostic assessments, they should have access to small-group intervention. De Bruin et al. provide further elaboration on how the model works:[31]

> Tier 2 instruction commonly involves targeted, small-group intervention with ongoing monitoring of progress (Barrio et al. 2015; Berkeley et al. 2009). Tier 2 is time-limited, has clear goals and entry and exit criteria that indicate when students will no longer need support… Within RTI and MTSS, *instruction across the tiers should be aligned so that Tier 2 supplements and complements Tier 1, but does not replace it* (Harn et al. 2011)… Rather, the logic of RTI and MTSS is that *evidence-based instruction at higher tiers should be an intensified version of Tier 1 practice*, achieved by increasing the frequency and duration of instruction and reducing the group size (Harlacher et al. 2010; Lemons et al. 2014; Powell and Stecker 2014). That is, students access a higher 'dosage' of quality instruction. [emphasis added]

Such a program should assist students to *progress faster than their peers*, to close the achievement gap and reach grade-level performance. Students who have previously achieved slower progress

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[29] National Center on Intensive Intervention (NCII), Academic Screening Tools Chart. NCII at the American Institutes for Research.

[30] Kelly Norris, Screening That Counts: Why Australia Needs Universal Early Numeracy Screening. Research Report 49, The Centre for Independent Studies, June 2024.

[31] de Bruin et al. (2023) Supporting students significantly behind in literacy and numeracy: a review of evidence-based approaches, edresearch.edu.au. p. 24

cannot 'catch up' unless their progress is significantly accelerated. This requires a rigorous, evidence-based intervention which is higher in intensity than Tier 1 instruction, to give students sufficient opportunities to practise and thus close the gap.

Interventions can be said to be based on evidence if they use instructional principles such as explicit instruction which are supported by broader literature ('research-based'), or if they have been subject to research trials and high-quality studies that show them to be effective ('evidence-based'). Table 3, below, contains a list of principles for intervention that schools should use to guide their practice.

Table 3: Principles of intervention, reproduced from AUSPELD's *Understanding Learning Difficulties: A Practical Guide*[32]

Evidence-based	It is important that the program is based on current research evidence and that its effectiveness is supported by independent reviews (i.e. not evaluated solely by the program manufacturer). Structured synthetic phonics programs (SSPPs) are considered to be evidence-based because they have been the subject of systematic reviews.
Explicit and direct instructional methods	Content is taught clearly and directly, not in an embedded or implicit manner. Explicit instruction directs student attention towards specific learning in a highly structured environment.
Incorporates dual coding	Programs that involve concurrent visual and verbal encoding, referred to as *dual coding*, aid retention and recall of information, as the learner creates multiple retrieval routes to the same information.
Cumulative sequence	Builds on what has already been learned and previous learning receives further practice.
Sequential	A prescribed sequence of learning targets presented in small steps.
Repetitive	Regular systematic review of concepts and over-learning to ensure learning is retained in long term memory.
Systematic	Concepts and skills are taught in a step-by-step manner. For example, in a structured synthetic phonics program, a complete set of phoneme-grapheme relationships are taught sequentially, cumulatively and systematically.
Appropriate pace	It is important to introduce concepts and skills in small steps but at a reasonable pace. Each component is taught on its own with ample opportunity for practice. In subsequent sessions (preferably daily) – previous learning is reviewed, new concepts and skills are taught, and – again – ample opportunity for practice is provided.
Cover all areas of instruction	For example, possible areas for literacy remediation include: phonemic awareness, phonics, decoding, fluency, comprehension, spelling, grammar, sentence structure, and vocabulary.
Assessment	Regular ongoing assessments of concepts taught to ensure the student is provided with instruction, resources and activities at the right level.

Policy implications

- Recommendation 5: Invest in curriculum support and professional development resources to enable more schools to prevent students falling behind, with a more consistent and evidence-based approach to Tier 1 instruction.

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[32] AUSPELD (2018), *Understanding Learning Difficulties: A practical guide*. DSF Literacy Services

- Recommendation 6: Develop a repertoire of screening tools for all year levels that are most predictive of success in the domain (reading or maths) as well as more detailed diagnostic assessment for students flagged through initial screening.
- Recommendation 7: Develop and research a numeracy screening tool for Foundation and Year 1 students based on CIS number sense research.
- Recommendation 8: Conduct a desktop review of interventions deemed promising based on existing literature and practice in Australia and overseas, and use it to form the basis for randomised controlled trials and efficacy studies in Australian schools. The findings should be used to inform planning for scale.
- Recommendation 9: The Tasmanian government should move towards a pilot program of MTSS that embeds all the enabling factors discussed above, and where pilot schools are selected carefully on the basis of capacity as well as need. Findings from research in pilot schools are then used to create a playbook for effective MTSS delivery.

4. Accountability for improved outcomes

Addresses Theme 5 and TOR item 5

What should accountability involve?

The topic of accountability is fraught, and the word is used to describe very different relationships of accountability. For instance, it can be argued that the publication of school-level data on the MySchool website is a mechanism of parents and the community holding schools accountable. The Department of Education's annual reports, or the ACARA website's publication of NAPLAN data, could also be said to be ways of holding state governments accountable to the public. A third form of accountability is the way the Department of Education holds schools (largely, state schools) accountable for their outcomes, potentially using more datasets than just standardised testing such as NAPLAN.

The Consultation paper noted:

> Holding accountability for outcomes is simple in theory but difficult in practice, because there are many factors that can influence outcomes, some of which are outside of the control of a teacher, a school, a school system or even a Government. But that is not an excuse not to assign accountability. Parents and carers expect teachers to deliver the best learning outcomes for their children and for schools to support that outcome. They and the broader community expect that school systems (in the case of Government and Catholic education sectors), and the Government, to be accountable for achieving the best education outcomes for children and young people so that Tasmania has a future capable workforce and vibrant communities.

In addition, by signing the Better and Fairer Schools Agreement with the federal government, the Tasmanian government has already committed to the following outcomes:[33]

> a. Equity and excellence — schools and education systems are equipped to provide all students with highly effective evidence-based teaching and equitable learning opportunities and support them to maximise their learning.

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[33] Department of Education, Heads of Agreement (Better and Fairer Schools Agreement 2025-2034), July 2024.

b. Wellbeing for learning and engagement — schools take a structured approach to wellbeing for learning in a way which reflects their school and learning environment, and students have a sense of belonging, safety and engagement with their learning.

The Agreement also stipulates in sections 69-71 that jurisdictions will have to measure and report on progress towards these outcomes. Accordingly, this Submission makes suggestions in this section about how the outcomes can be achieved through school-level targets, reporting and accountability.

In brief, the Department of Education, Children and Young People (DECYP) should hold individual schools accountable for the following, measurable student and school-level outcomes:

- NAPLAN and PAT performance relative to schools with similar demographics to set school-level improvement goals;
  - o Proportion of students that keep up (maintain a proficient level of achievement), move up (move from Strong to Exceeding) and catch up (move from Needs Additional Support and Developing into the next band up);
  - o Reporting of progress according to student equity group (e.g. socio-educational advantage, First Nations status);
- Monitor wellbeing and school climate by surveying behaviour, attention and disruption; and
- Proportion of students attaining proficiency in Year 9 NAPLAN or equivalent by the time they leave school.

Furthermore, while some of the data exists already and needs only to be measured and presented in a different way, others will require new measurements and metrics for effective monitoring and accountability.

Monitoring standardised testing data

National Assessment Plan Literacy and Numeracy (NAPLAN)

Current DECYP annual reporting (based on NAPLAN reporting mechanisms prior to 2023) reports the proportion of students meeting the National Minimum Standard; a reporting measure that will require change for the next annual report due to the change in NAPLAN.

The Better and Fairer Agreement sets the following targets:

- By 2030, in the National Assessment Program–Literacy and Numeracy (NAPLAN) Reading and Numeracy, of Years 3, 5, 7 and 9:
  - o reduce the proportion of all students in the Needs Additional Support proficiency level by 10 per cent; and
  - o increase the proportion of all students in the Strong and Exceeding proficiency levels by 10 per cent.
- and trend upwards in the proportion of priority equity cohort students (including, Aboriginal and Torres Strait Islanders, outer regional, remote and very remote, and parental education (Year 11 or below)) in the Strong and Exceeding proficiency levels.

This is consistent with this submission's suggestions above.

Progressive Achievement Testing (PAT)

Current DECYP annual reporting includes the percentage of "students achieving year level appropriate standards" for PAT Reading and Maths. The report notes 'year level appropriate standards' are determined by DECYP but also that the reported figures may not represent a definitive

representation of performance on account of different levels of participation and different conditions. The exact meaning of this is not specified, but as PAT is not conducted according to a compulsory assessment schedule like NAPLAN, the data may not be reliable when aggregated.

The inclusion of PAT is appropriate, as without it, there is only public accountability for the four year levels tested in NAPLAN and Year 12 completion (five year levels out of a total of 13). The following should occur to better embed PAT as a health check on student achievement:

- In conjunction with ACER, generate Australian Curriculum-aligned cut scores for PAT Reading and Maths;
- Create a compulsory and therefore consistent assessment schedule for PAT Reading and Maths for non-NAPLAN year levels;
- Work with schools to set targets for PAT growth and report the proportion of schools reaching growth targets; and
- Continue the current practice of reporting statewide averages of on-track students according to the new system.

Student wellbeing and school climate

Given the importance of attendance, behaviour and school climate in setting necessary preconditions for learning, this should be given greater consideration by policymakers so that academic learning outcomes can be better contextualised and utilised for improvement.

Behaviour surveys

Many Australian states already collect survey data that relates to these topics, but this data is typically not considered part of government reporting requirements. Additionally, the surveys used all differ across jurisdictions and non-compulsory participation means their usefulness at a system level can also be compromised.

This slapdash approach contrasts with the model in England, which is highly practical for a small jurisdiction such as Tasmania. England Behaviour Adviser and CIS contributor Tom Bennett proposed and led a National Behaviour Survey, which surveyed staff and students about things such as their perception of disruption and how safe they feel, as well as frequency and impact of misbehaviour and how schools respond to it. The first round of data was released in June 2023, with some key findings for wellbeing of both staff and students:[34]

- Health and wellbeing of 60% of teachers had been affected, with 31% to a small extent, 23% to some extend and 7% to a great extent;
- A quarter of students only felt safe at school on 'some days' or at no point at all in the week before they did the survey;
- On average, about *six minutes for every half an hour in class* was eaten up by poor behaviour; and
- More than one in five children had been a victim of bullying in the past 12 months, with the most common reason being picked on for the way they look.

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[34] Tom Bennett, Conduct Becoming: The importance of the behaviour curriculum, Analysis Paper 56, The Centre for Independent Studies, September 2023.

Attendance

The Better and Fairer Agreement commits Tasmania to contributing to a 91.4% student attendance rate (equivalent to the 2019 national average) by 2030, both overall and for priority equity cohorts, and to close the gap in attendance for priority equity cohorts by 2035. At present, DECYP only reports on student attendance level (the proportion of students attending 90% or more of the time). The attendance rate should also be included in annual reporting.

However, attendance at the individual student level is also a precondition for learning, and schools should also set school-appropriate targets to improve attendance. As with other metrics discussed in this submission, these should be school-based, and should be challenging yet achievable.

Post-school readiness

Under current agreements, Tasmanian students must stay in school until they turn 18 or complete Year 12 or an equivalent, whichever comes first. However, attainment does not necessarily measure achievement, and achievement – particularly in core competencies of reading, writing and mathematics – is what determines readiness for post-school options.

As previously explored, the national and international testing data drawn from students at Years 9 and 10 – the years before senior secondary – show that between a third to half of students lack proficiency in foundational skills, and around a quarter overall perform at a level too low to enable effective participation in society after they finish school.

At present, there are no meaningful targets for schools, or pre-requisites for students, that mean a Year 12 or equivalent attainment means the student has achieved proficiency in literacy and numeracy. Western Australia is one state which requires its students to show proficiency in these areas in order to attain their WACE (Western Australian Certificate or Education).

There are two ways students in WA can demonstrate this: by achieving a certain cut score in Year 9 NAPLAN or completing an equivalent online assessment in the period leading up to WACE completion. In the first instance, students who meet the cut score (set within the Strong band; a higher standard than merely scraping into the Strong band) at Year 9 NAPLAN are deemed to have met this hurdle requirement for the WACE. Those who do not must complete the OLNA – Online Literacy and Numeracy Assessment, which is set an equivalent level to Level 3 in the Australian Qualifications Framework.[35]

Creating a similar policy for Tasmanian schools would help ensure students leave school with competence in foundational skills and can therefore choose between a broader variety of options for post-school life.

Retention to Year 12

An area of some discussion is Tasmania's college system, where many students must go to a different school after Year 10 to complete senior secondary, and consequently Tasmania's Year 12 retention rates are the lowest in the country.[36] This means meeting targets in the Better and Fairer Agreement

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[35] School Curriculum and Standards Authority, Western Australian Certificate of Education Literacy and Numeracy Standard: OLNA and Prequalification through Year 9 NAPLAN, 2024.
[36] Ellen Coulter, "Only half of Tasmanian students finish Year 12 and the state wants to turn that around", ABC 7.30, 2 September 2024.

(to increase the proportion of people aged 20-24 attaining Year 12 or equivalent to 96% by 2031) will be challenging for Tasmania.

In theory, Year 12 non-completion is not necessarily a problem in itself — for instance, if students go on to complete an apprenticeship and traineeship, they can get a head start on their career. But the data do not support the notion that students are making an informed choice at the end of Year 10, having been well-equipped with foundational skills to that point.

While increasing Year 12 retention and proportion of students achieving Year 12 certification is probably of benefit to some students and could be done by moving further away from the college system, ensuring that students can finish Year 12 with strong foundations will benefit all students.

Policy implications

- Recommendation 10: Both NAPLAN and PAT data should be monitored to see whether students are catching up, keeping up or moving up.
- Recommendation 11: DECYP and its schools should conduct an annual behaviour survey of students and teachers and report on this at both the school level at regular intervals and annually at the state level in annual reports.
- Recommendation 12: Based on the WA model of Year 9 NAPLAN or OLNA being a prerequisite for senior secondary certification, Tasmania should implement a similar model.
- Recommendation 13: School-level accountability should occur through schools setting their own strategic plans that contain localised targets, but schools should also be responsive to their communities by reporting publicly to their communities at regular intervals e.g. every three years.
- Recommendation 14: DECYP should also report statewide or regional figures in the areas covered above, such as by reporting the proportion of schools meeting their goals, on track to meeting their goals or making insufficient progress.