Australian
Education
Research
Organisation

Introduction to multi-tiered system of supports

Providing evidence-based literacy and numeracy support in secondary school

This guide is for secondary school leaders and teachers looking to better support Years 7 to 9 students struggling with foundational literacy and numeracy skills. It is primarily aimed at those able to make whole-school decisions. It makes recommendations based on the best available evidence. Early foundational literacy and numeracy skills include those that are expected to be developed through primary school as per the Australian Curriculum, including:

- reading fluency
- word recognition
- written expression

- reading complex texts
- spatial reasoning
- counting and solving number problems.

Related frameworks

Australian Professional Standards for Teachers
Focus Area 2.5, 5.4

Australian Professional Standards for Principals
Professional Practice 1

Requirements for successful intervention:

1. Support high fidelity, evidence-based instruction in all classrooms.
2. Screen students early and identify learning gaps.
3. Align your intervention to the gaps identified in the assessment.
4. Continually monitor learning and evaluate the effectiveness of the intervention.

How these 'struggling students' are defined differs across systems and schools. One way of estimating the number of students in this group is to look at the share of Australian students who do not exceed the national minimum standards in NAPLAN testing (including those who are exempt from testing). By Year 9, this group consists of one-fifth of all students for numeracy and a quarter for reading.

Regardless of how they are defined, students arriving in secondary school who have not developed foundational literacy and numeracy skills will, without significant support, struggle to participate in classes that require them to engage with more complex materials and topics. These students must be identified early and receive support tailored to their learning needs.

This guide introduces the **multi-tiered system of supports (MTSS)** model and explains how it can be applied in secondary schools. MTSS is a tiered model of instruction and intervention that starts with high quality core classroom instruction. Guidance for quality core instruction can be found in AERO's Tried and Tested Guides. MTSS also includes universal student screening, evidence-based interventions provided on a sliding scale of intensity, and progress monitoring of students receiving intervention. MTSS has evolved from the concept of 'Response to Intervention' (RtI), a tiered model of intervention provided on a sliding scale of intensity, which gained popularity after its introduction into US legislation in 2004. Since 2004, MTSS, a more comprehensive model than RtI, has become the dominant conceptualisation of intervention internationally. A tiered intervention approach is data driven, allowing all students access to intervention based on need. This emphasises equity by replacing models where access to interventions is restricted based on disability or the personal characteristics of students. Data-based decision-making offers a framework for organising interventions, communicating transparently about foundational skill development, monitoring, and celebrating student progress.

Providing effective intervention must be part of a wider approach to delivering whole-school, evidence-based instruction and intervention. Before developing an approach to intervention, school leaders should also ensure they have a whole-school vision and school-wide, evidence based instructional model, as well as buy-in for collecting and using data to drive decisions and practice.

This guide draws on a review of evidence-based approaches for supporting struggling students conducted by Monash University, supplemented by additional cited guidance. Note that some of the examples offered may not apply in all school contexts, and professional judgments should be made where necessary to ensure the best possible support for students with disability. This resource is the first in a series that will provide guidance on how Australian secondary schools can best support struggling students.

Multi-tiered system of supports

MTSS is a tiered model of instruction that includes:

- a school-wide, multi-level system of instruction
- high-quality classroom instruction
- universal student screening
- evidence-based interventions provided on a sliding scale of intensity
- continuous, data-based progress monitoring.

High quality, evidence-based Tier 1 instruction is the foundation of MTSS. Tier 1 refers to the instruction that the whole class receives. If secondary students have already mastered foundational literacy and numeracy skills, most, if not all, will respond well to evidence-based Tier-1 instruction in all subjects. This includes practices such as explicit instruction, spacing and retrieval, and formative assessment. For more information on evidence-based Tier 1 practices, visit the AERO Practice Hub. In an MTSS model, all students are screened to determine their capability in reading, writing and mathematics. The resulting data is used to inform whether students require intervention and for those that do, to tailor the intervention offered.

Tier 2 intervention involves intensifying support for students with knowledge or skill gaps that prevent them from responding to quality Tier 1 instruction. This involves the use of evidence-based instructional practices and empirically validated interventions in a small group setting.

Students who do not respond to Tier 2 intervention will require **Tier 3** intervention, which intensifies support further by increasing frequency or lowering the ratio of students to staff in small-group instruction (1:1 instruction also being an option).

Tier 2 and Tier 3 interventions should be delivered by a staff member trained in an evidence-based reading, writing or mathematics intervention. Interventions should be time-limited and have clear goals and entry and exit criteria that indicate when students will no longer need support in the specific skill or knowledge targeted.

For more on Tier 2 and 3 interventions, see AERO's MTSS evidence snapshot.

Figure 1 How tiers of support work in a multi-tiered system of supports
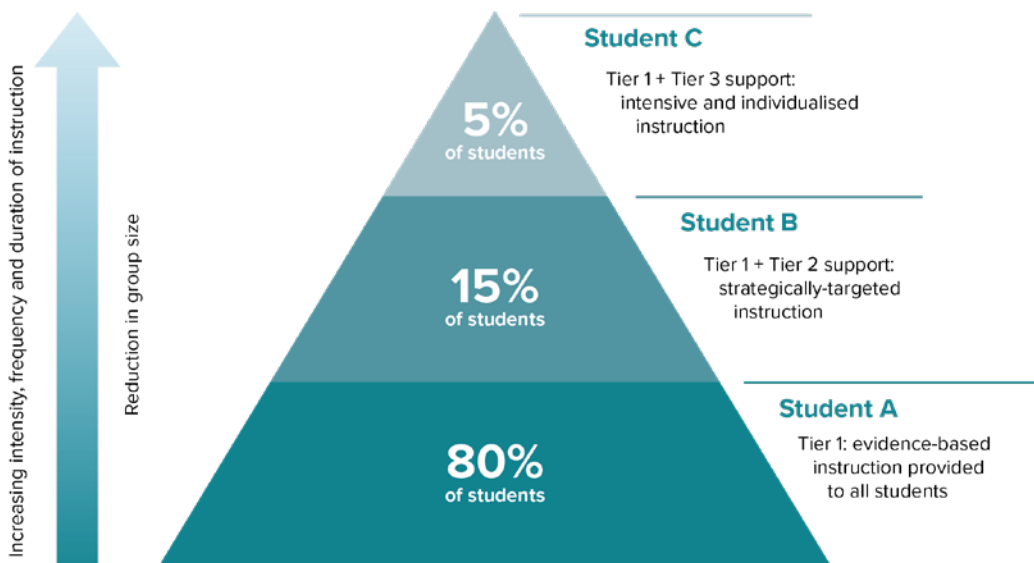
Source: de Bruin and Stocker (2021)

Providing Tier 2 and 3 support is not the same as making disability adjustments, which some students require in addition to, or in lieu of intervention. Students can present in Year 7 with foundational knowledge gaps for a variety of reasons, including disrupted schooling, disengagement from learning and having English as an additional language or dialect. A collaborative effort between school leadership, classroom teachers and intervention support practitioners is required to ensure every student is offered adequate support.

Evidence from implementing MTSS in primary schools suggests that high-quality Tier 1 instruction is sufficient on its own to support approximately 80% of students to make adequate progress with no additional support. This means that 20% of students are likely to need additional support on top of Tier 1 instruction. Across secondary schools, the number of struggling students can vary significantly. For schools with larger proportions of struggling students on entry to the school, the number requiring Tier 2 and 3 interventions may be larger. However, the larger the number of these students, the greater the benefit to further focussing on foundational skills in whole-class Tier 1 instruction. If schools find that a growing number of students between Years 7 to 9 are requiring Tier 2 and 3 support, an investigation of the pedagogical practices used in classrooms (as part of Tier 1 instruction) should be undertaken to ensure all teachers are implementing evidence-based practices with fidelity.

How does MTSS relate to differentiation?

Intervention is not differentiation. Differentiated instruction can be defined as a flexible approach to teaching in which a teacher plans and carries out varied approaches to the content, the process, and/or the product in anticipation of or in response to student differences in readiness, interests, and learning. In MTSS, differentiation occurs within Tier 1. The purpose of universal screening is to identify students who, in addition to receiving differentiated instruction of secondary curriculum, require targeted interventions to address gaps in foundational skills.

These may include:

- providing skill-building in reading (for example, vocabulary and the reading of complex texts)
- writing (for example, written expression)
- mathematics (for example, conceptual understanding of equivalent fractions).

Teaching these skills to a minority of students as part of Tier 1 instruction in a secondary classroom goes beyond differentiation and adjustment may not be a reasonable expectation of teachers.

Universal screening

Screening students at Tier 1 is an essential component of the MTSS model. Universal screening at Tier 1 should occur 3 times per year in primary settings, on entry to Year 7 and, ideally, at 6 month intervals throughout secondary school. In secondary settings, on-entry screening in reading, writing and mathematics is recommended, as intervention will be most effective when provided as early as possible.

Evidence supports the use of **curriculum-based measures (CBM)** for screening at Tier 1. Despite their name, CBM are not assessments of content taught at Tier 1. CBM are brief and basic assessments of students' reading, writing and mathematics foundational skills that can be used frequently, such as weekly or biweekly, and typically take between one to 5 minutes to administer. For example, reading CBM might include an oral reading fluency (ORF) screener. If students are struggling with this, it may be followed by a phonics screener (i.e. a non-word spelling test), a comprehension screener and a morphology screener. For secondary school students who are identified as struggling in reading, writing or mathematics, further assessment should be conducted to identify the specific skills that require intervention. This enables interventions to be appropriately targeted (for example, focusing on strengthening phonemic awareness or developing vocabulary) rather than applying the same intervention for all students who struggle in a given domain.

Year 5 NAPLAN results and teacher judgements or grades from primary years can assist identification of students needing Tier 2 and 3 support, but should not be solely relied upon, given they do not provide granular and objective data on student strengths and weaknesses across the sub-components of each domain. Additionally, not all secondary schools will gain access to this data, or it may be transferred late. Also, approximately one in 20 Year 5 students do not sit NAPLAN, therefore no objective data will be available for these students.

Progress monitoring

Carefully monitoring students receiving Tier 2 and 3 interventions is also central to the MTSS model.

Monitoring student progress enables intervention to be adjusted as required. For students who do not make sufficient progress, additional work should be undertaken to ensure that the intervention appropriately targets underlying skill deficits, and that these deficits have been correctly identified. Fidelity of implementation should also be examined. Increasing the intensity of intervention (that is moving from Tier 2 to Tier 3) may also be an appropriate response should other checks be satisfied. Where sufficient progress is observed, the focus of intervention can shift to other skill gaps or the student can return to only receiving Tier 1 instruction.

The frequency of progress monitoring should increase from Tier 2 to Tier 3. Some research suggests that Tier 2 monitoring should occur at least monthly, with frequency increasing in Tier 3. Others suggest Tier 2 monitoring should be conducted weekly, with Tier 3 monitoring occurring bi-weekly or even daily. What is important is consistent and frequent progress monitoring to allow student results to be tracked.

AERO is currently researching available screening assessments and monitoring tools and will provide further recommendations in future publications.

Next steps

Consider where you see your school in a continuum of MTSS implementation.
What is your next step?

We do not have any whole-school structures that would support MTSS

Start with the foundations:

- a whole-school vision and school-wide, evidence based instructional model
- commitment to getting Tier 1 right
- buy-in for collecting and using data to drive decisions and practice.

Start by familiarising yourself and your school with the strong evidence on how students learn and the most effective teaching practices; this body of evidence is often described as the science of learning. Then familiarise yourself and your school with evidence-based instruction, before building Tier 1 capability and moving towards MTSS.

We do not have any intervention strategies in place

Begin by familiarising yourself and your colleagues with MTSS.

Develop a multi-tiered system of supports for your school, whereby students may receive support on a sliding scale of intensity. Ensure that there are structures in place to support students to receive Tiers 2 and 3 support.

Select appropriate assessment measures to screen students for competence in foundational skills.

Choose CBM assessments to screen all students for foundational skills and use student screening data to inform the number of students requiring intervention, the level of intervention required and their specific learning needs.

We are using other approaches not covered in this guide

Consider how you can embed evidence-based, specific instructional strategies into the intervention processes you already have in place.

The approaches you are using may be beneficial and aligned with theoretical models of effective learning but may not have been formally evaluated in research trials that have documented impact. It may be more effective to align your practice with what is proven to work.

We are just starting to implement some intervention processes

Ensure staff are trained in how to intervene and what specific approaches to use at Tiers 2 and 3 for reading, writing and mathematics.

Support colleagues to use data in their decision-making when identifying students, planning interventions and tracking progress.

Ensure intervention processes and all intervention decisions are overseen by a qualified teacher who has received appropriate intervention training.

We have already embedded a 3-tiered approach to intervention

You could focus on embedding, sustaining and monitoring quality practice. For example, you could:

- ensure fidelity of MTSS implementation across your school – leading staff members should conduct instructional rounds to support teachers and teacher assistants delivering intervention programs to do so with fidelity
- ensure adequate upskilling and ongoing professional learning of staff
- ensure staff are trained in the ongoing use of data to ensure students are accessing the right level and type of intervention
- support staff to implement high-quality instruction at the Tier 1 level, including effective instructional strategies such as explicit instruction.

For more information

For more information on how to implement MTSS within your school setting, see our work on the AERO website.

de Bruin, Kestel, Francis, Forgasz and Fries, 2023.

Berkeley, Bender, Peaster and Saunders, 2009.

Scammacca, Roberts, Vaughn, Edmonds, Wexler, Reutebuch and Torgesen, 2007.

Filderman, Toste, Didion and Peng, 2021.

To provide feedback on this guide or view further information, including full references and additional resources, visit AERO's website.

For more information visit
edresearch.edu.au

100523.CH.AA.V2