



# Briefing report

## Education Review Office (ERO): Literacy and Mathematics: ERO's Evidence

Date	12 May 2021
Security Level	N/A
ERO Priority	Medium
ERO Reference	M21-42
Date requested	ERO initiated
Date due	ERO initiated
Proactive release	Not recommended

Addressee	Action sought	Deadline
<b>Minister of Education</b>	It is recommended that you:	
	<ul style="list-style-type: none"> <li>a) <b>Note</b> ERO's findings on New Zealand's literacy and mathematics achievement.</li> <li>b) <b>Note</b> that this briefing is not recommended for proactive release</li> </ul>	



### Attachments:

**Education Review Office (ERO):  
Literacy and Mathematics: ERO's  
Evidence**



### Comments:

### Minister's Office to complete

Noted	<input type="checkbox"/>
Seen	<input type="checkbox"/>
Approved	<input type="checkbox"/>
Referred to:	
Date signed by Minister:	



Our Ref: M21-42

12 May 2021

**Hon Jan Tinetti**  
**Associate Minister of Education**

### **Literacy and Mathematics: ERO's Evidence**

#### **Purpose**

1. To inform the Strategy Session on Wednesday 12 May 2021.
2. This short paper summarises ERO's evidence on literacy and mathematics curriculum and assessment in English-medium early learning and schooling, and ERO's view on what needs to change to support improved provision. This is in the context of sustained concern around in New Zealand's competitiveness in international assessments of literacy and mathematics.

#### **Background**

##### ***Early Learning***

3. Literacy begins with a strong foundation in oral language in early learning. ERO has found in 2016:
  - Evidence of some effective practice in this area.
  - Many services needed to improve on capitalising on home languages (other than English) as a foundation for other language learning.
  - Many services also needed to be prompt and proactive where concerns are identified about children's oral language learning and development. Early interventions are more effective than later interventions, by which time children may have fallen well behind.
4. In early mathematics, evidence suggests a balance between child- and teacher-initiated learning opportunities is needed. In 2016 ERO has found that in early learning:
  - Kaiako often see mathematics as being 'everywhere' and child-initiated incidental learning is common.
  - Kaiako were less likely to identify and capitalise on opportunities to identify and extend children's learning in mathematics more deliberately. This is often due to a lack of content knowledge, pedagogical content knowledge and comfort with mathematics.
  - There is often an element of discontinuity in transition from early learning through to schooling. Teachers in early primary schooling are not necessarily aware of children's prior learning, leading to reassessment, and/or missing some of the strengths that children bring, particularly with home languages.

- Schools could bring a greater focus on oral language as a support for literacy learning.

### ***Assessment and accelerating progress***

5. In relation to assessment, ERO has found that schools' understanding and use of assessment has increased between 2008 and 2018. Aside from standardised assessment tools like Progressive Achievement Tests (PAT) and Electronic Assessment Tools for Teaching and Learning (eAsTTle), there are a range of school- and teacher-developed formative assessments in use across Aotearoa New Zealand. ERO has consistently found that moderation and consistency are areas for development. The potential of the Progress and Consistency Tool (PaCT), which could have supported this, was hampered by low uptake driven by distrust within the sector over data ownership and use by the centre.
6. Assessment on its own does not drive improved learning in literacy and mathematics. The use of assessment information to make curricular and pedagogical changes is the missing link. In general, schools are more capable of identifying who needs acceleration in literacy and mathematics than at supporting that acceleration. ERO's view is that curriculum must be responsive in order to accelerate progress. It is crucial that schools are deliberate and strategic about investigating the success or otherwise of their interventions. Some interventions are repeatedly used despite absent or unclear evidence of success. Rapidly trialling different interventions and extending those that show success enables schools to better prioritise their efforts.
7. ERO found in 2014 that the Accelerated Learning in Mathematics (ALiM) and Accelerating Learning in Literacy (ALL) programmes were effective where they were well implemented, but that they were not necessarily a good fit for those schools that were overwhelmed by significant underachievement.
8. ERO has no recent evidence pertaining to Gifted and Talented Education (GATE) In 2008, ERO found that schools were not very effectively identifying and extending gifted and talented students.
9. For students with additional learning needs, ERO has previously found that strong co-ordination by a designated SENCO and responsive individual education plans support accelerated progress. Early identification and intervention are areas for improvement.

### ***Teacher/Kaiako Capability***

10. The ability to implement effective curricular and pedagogical responses to identified learner needs depends on teacher and kaiako content knowledge, pedagogical content knowledge and knowledge of how student learn in a specific curriculum area. Teaching effectiveness in specific curriculum areas is an outcome of high-quality initial teacher education (ITE) and opportunity to learn through high quality in-service professional learning and development (PLD). ERO's 2017 report on newly graduated teachers suggested review and strengthening of ITE programmes, particularly with respect to the balance of theoretical and practical elements. Many newly graduated teachers reported emerging from their programmes still needing to substantially develop their understanding of pedagogy, curriculum, assessment practice, and working with diverse learners and whānau.
11. Accessing relevant, often whole-school PLD was a strong feature of schools who have demonstrated improved literacy and mathematics practice. ERO has found (in 2019) that most school leaders used data to strategically select and access PLD that is relevant to their planning and priorities. However, they were less likely to evaluate the

impact of their PLD on student outcomes. Access remained a challenge for more isolated, smaller and/or rural schools.

12. Teacher and kaiako capability is of particular concern in mathematics. Few primary teachers specialise in mathematics, which limits the quality of teaching and opportunity to learn. It is ERO's view that there need to be a more systematic approach to building capability in mathematics.

### ***Effective Teaching Strategies***

13. In general terms, ERO has collected evidence on teaching strategies that work to improve student achievement in literacy and mathematics.

14. Writing strategies included:

- Extending writing opportunities (i.e. more frequent).
- A focus on oral language.
- Reducing withdrawal from class.
- Structured processes and explicit scaffolding.
- Using writing contexts that are interesting to children.

15. Reading strategies included:

- Phonological awareness interventions for students who are struggling.
- More deliberate emphasis on comprehension.
- Support with selecting books from the library.
- Summer reading programmes.
- Community volunteer reading programmes.

16. Mathematics strategies included:

- Student involvement in goal setting.
- Teaching within authentic contexts.
- Ensuring coverage of strands, not just numeracy.
- Giving students explicit instruction about learning strategies.
- Mixed-ability grouping and group learning.
- Working more closely with parents/whānau especially around transition times.

### ***Mathematics Curriculum***

17. ERO's view is that, in relation to mathematics:

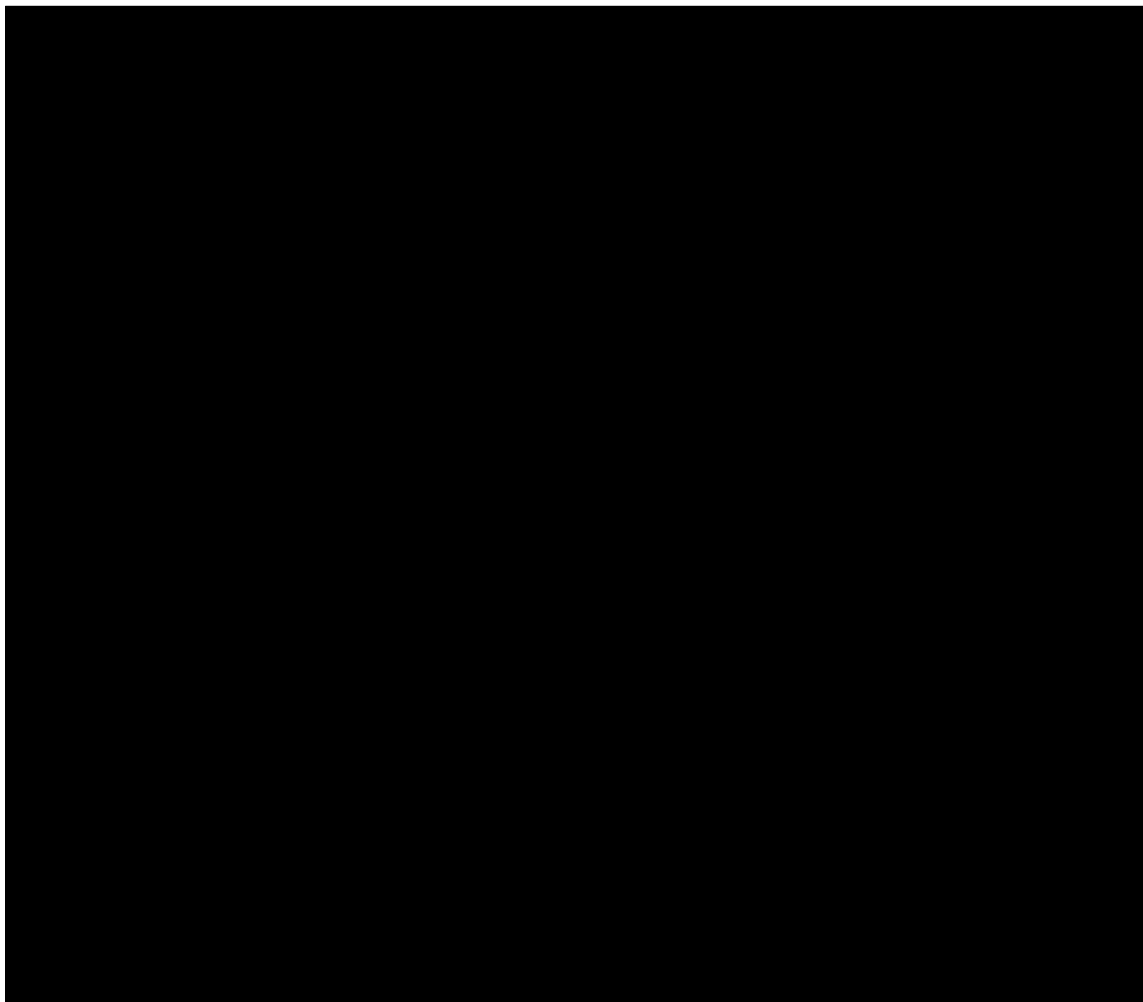
- In the absence of strong direction and clarity, reinterpretations of the National Curriculum have become embedded over time in the mathematics and statistics learning area.
- There is evidence of a slippage of expectations.
- There is a focus on numeracy to the exclusion of other strands.
- There is misalignment of curriculum content from various sources (e.g. websites, commercial publishers).
- There are mixed messages about pedagogical approaches.

### ***Areas for Improvement***

18. We have seen years now of relative deterioration in New Zealand's performance in international comparative measures of literacy and mathematics achievement. ERO

believes that addressing these long-term trends necessitates fundamental shifts in approach at system, institution, and classroom levels. It will require sustained investment over at least a five to ten year period.

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### Recommendations

20. It is recommended that you:

- a) **Note** ERO's findings on New Zealand's literacy and mathematics achievement.
- b) **Note** that this briefing is not recommended for proactive release.

**noted**

**noted**

  
Nicholas Pole  
Chief Executive

NOTED/APPROVED

  
Hon Jan Tinetti  
Associate Minister of Education

16/05 / 2021