



Improving the quality of teaching

Submission to the Productivity Commission inquiry into building a skilled and adaptable workforce

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Introduction

This submission responds to the issues raised in the Productivity Commission's interim report relating to improving outcomes for school students.

Improving the quality of teaching should be a priority for all governments, because better academic results would improve the lives of students and lift workforce productivity.

Effective teaching has the biggest impact on student learning.¹ A student with a highly effective teacher can achieve in half a year what a student with a less effective teacher achieves in a full year.² But effective teaching does not just happen. Nor is it the responsibility of individual teachers working on their own. Effective teaching that maximises student learning across subjects and across each year of school requires teachers to engage in careful preparation and planning at a whole-school level, before any individual teacher even sets foot in the classroom.

The PC's interim report sets out the problems facing teachers in delivering high-quality instruction in schools and points to possible

solutions. This submission builds on those reform ideas, recommends some adjustments to the PC's proposals, and provides advice on how the PC's proposals would best be implemented to ensure maximum impact on student results.

This response draws on several recent Grattan Institute reports and publications, including:

- [*Ending the lesson lottery: How to improve curriculum planning in schools*](#) (Attachment A)
- [*The Reading Guarantee: How to give every child the best chance of success*](#) (Attachment B)
- [*The Maths Guarantee: How to boost students' learning in primary school*](#) (Attachment C)
- [*Look to classrooms for a productivity boost*](#), published in [*The Australian Financial Review*](#), 12 August 2025

¹ Aaronson, D., Barrow, L. and Sander, W. (2007) "Teachers and student achievement in the Chicago public high schools". *Journal of Labor Economics* 25.1, pp. 95–135.; Hanushek, E. A. (1999). "[Some Findings from an Independent Investigation of the Tennessee STAR Experiment and from Other Investigations of Class Size Effects](#)". *Educational Evaluation and Policy Analysis* 21.2, pp. 143–163.; Hanushek, E. A., Kain, J. F., O'Brien, D. M. and Rivkin, S. G. (2005). [The Market for Teacher Quality](#). Cambridge, MA: National Bureau of Economic

Research; Leigh, A. and Ryan, C. (2011). "[Long-Run Trends in School Productivity: Evidence from Australia](#)". *Education Finance and Policy* 6.1, pp. 105–135.; and Rockoff, J. E. (2004). "[The Impact of Individual Teachers on Student Achievement: Evidence from Panel Data](#)". *The American Economic Review* 94.2, pp. 247–252.

² Leigh, A. (2010). "[Estimating teacher effectiveness from two-year changes in students' test scores](#)". *Economics of Education Review* 29, pp. 480–488.

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1 Invest in a baseline set of high-quality, comprehensive curriculum materials

The PC's interim report recognises the role that high-quality, sequenced curriculum materials can play in supporting classroom instruction, and acknowledges that not all teachers have access to these materials.

To address this problem, the PC's interim report recommends the federal government invest in a single online curriculum materials resource bank, which would include materials developed by different jurisdictions.

If the federal government is committed to providing teachers with a baseline set of curriculum materials, Grattan Institute recommends it instead identifies and funds a single comprehensive set of high-quality materials, as a starting point. This is preferable to attempting to co-ordinate across state and territory jurisdictions to develop a resource bank, which is likely to be very difficult to achieve in a reasonable timeframe, and would not necessarily produce a comprehensive and coherent set of high-quality materials.

1.1 High-quality curriculum materials are difficult to create

Grattan Institute's *Lesson lottery* report (Attachment A) sets out some key features of high-quality curriculum materials (see Box 3 in the report), including that they should:

- Meet or exceed mandatory curriculum standards
- Be carefully sequenced and knowledge-rich
- Support evidence-based instructional practices
- Include aligned assessments
- Be comprehensive, encompassing all the key materials teachers need to teach a subject or learning area over a year (e.g. curriculum map, guidance for teachers, lesson plans, presentation slides, and student handouts)
- Be easy to use.

Curriculum materials should also be well-maintained and regularly updated, to ensure they remain aligned to mandatory curriculum standards as they are revised over time.

As noted in the PC's interim report, curriculum materials are onerous to create. Grattan Institute estimates that it takes about 500 hours to develop a year's worth of curriculum materials in a single subject (for example, Year 3 English or Year 8 Science).³

³ Grattan Institute's *Lesson lottery* report (p. 11).

Despite there now being a range of external curriculum publishers in Australia, some jurisdictions have invested in creating curriculum materials themselves in-house.

These initiatives appear well intended. But governments have not always recognised the in-depth, highly-specialist curriculum expertise required to develop genuinely high-quality materials, nor have they always insisted that the materials they create (or procure) are actually aligned with robust evidence on how students learn best.

To the best of our knowledge, none of the government materials created or procured to date have been quality assured through a robust, independent, and transparent process.

Governments also rarely maintain materials over time, or update them based on ongoing feedback from the classroom or new evidence on effective practice. In some cases, governments explicitly decide not to update materials for new versions of the Australian Curriculum. In others, materials appear to simply languish on department websites, victims of shifting priorities or a ‘one-and-done’ mentality. For example, when researching our *Maths Guarantee* report (Attachment C), Grattan Institute found several broken links in government materials. This is not surprising – government departments simply do not face the same incentives as external curriculum publishers to respond to end-user feedback and ensure their materials remain fit for purpose.

As a result, past government investments have not solved the current challenges teachers face in accessing high-quality materials.

Teachers and students are likely to be better served if governments simply subsidise access to high-quality curriculum materials produced by commercial or not-for-profit external publishers, who are more willing to invest in deep curriculum expertise, maintain their materials over time, and submit their materials to robust, independent quality assurance processes.

1.2 To provide free access to baseline materials, the federal government should invest in a single comprehensive set of high-quality materials

If the federal government is committed to providing all teachers with access to free curriculum materials, it should simply identify and fund a single comprehensive set of high-quality baseline materials, as a starting point, rather than attempting to scrape together a suite of offerings, based on the existing patchwork of materials developed by different jurisdictions, which vary significantly in quality and comprehensiveness.

One efficient option would be for the federal government to procure materials created by Ochre Education. Ochre is a not-for-profit curriculum materials publisher that is already well-established, having developed curriculum materials in primary and secondary English, Maths, and Science, and primary Humanities.

Ochre’s materials are broadly aligned to the Australian Curriculum as well as state variants, including the Victorian Curriculum and NSW syllabus, and are already used by many schools and systems. Ochre has the organisational capacity and incentives to continue to expand its offering and improve its materials.

Government investment in Ochre to further extend its offering and supplement it with lesson videos would have the benefit of building a strong bank of resources to support teaching continuity during times when children cannot physically attend school, such as due to illness or school closures. A video lesson bank would also be a valuable resource to support teacher professional development or for schools to use when teachers are absent.

This would mirror the UK Government's approach to funding Oak National Academy. Oak provides free, comprehensive curriculum materials and video lessons, and is now publicly funded by the Department for Education as a non-departmental public body.⁴

Should the federal government pursue this option, Ochre materials should still be subjected to an independent and transparent quality assurance process, to ensure they meet benchmark quality criteria (see Section 2 for further discussion).

Recommendation 1:

The federal government should invest in a baseline set of comprehensive curriculum materials that include sequenced, lesson-level materials (including video lessons) across all major subjects from Foundation to Year 10.

These materials should be made publicly available to teachers in all states and territories and across all school sectors, and be accompanied by professional development to support implementation.

This could be achieved by:

- Funding an existing curriculum publisher, such as Ochre Education, to improve and expand its current offering to cover all major subject areas and year levels and offer accompanying professional development to teachers (Ochre materials are currently limited to English, Maths, Science, and Humanities in some year levels).
- Requiring that any procured materials go through an independent quality assurance process (see Section 2) to ensure they meet benchmark quality criteria.

⁴ Oak National Academy. (2024). [Oak National Academy annual report and accounts 2023 to 2024](#).

2 Support an independent, curriculum materials quality assurance body

The PC's interim report acknowledges that teachers get conflicting advice about what constitutes high-quality curriculum materials. It recommends that 'materials on [a] national platform should be assessed against a clear framework to evaluate their alignment with the Australian curriculum, education standards, and other evidence-based quality criteria' (p. 20).

We agree that teachers and school leaders do not have enough information about which curriculum materials are high-quality. And we agree that robust quality-assurance would support better decision making by systems and teachers.

To achieve this, Grattan Institute recommends that quality assurance be independent and rigorous, and conducted by a genuinely independent specialist body, set up for this purpose.

A robust and transparent quality assurance process would encourage existing publishers (including government departments) to produce higher-quality materials, benefiting teachers and students.

2.1 By supporting a robust quality assurance process, governments can steer the existing publishing market towards creating higher-quality materials

Robust quality assurance is common in other countries and sectors, but largely absent in school education in Australia.

The PC's interim report rightly draws attention to the importance of quality assuring curriculum materials, but focuses on government-commissioned materials only. This approach misses a large part of the publishing market, which includes long-standing academic publishing houses, private-equity funded start-ups, professional association publishing arms, not-for-profits established by teachers, and peer-to-peer and social media platforms, such as TeachersPayTeachers and Pinterest.

The quality, alignment, and comprehensiveness of the materials currently available vary widely. It ranges from materials that have passed rigorous quality assurance processes in other countries and have been adapted for the Australian Curriculum, to materials that are highly fragmented, poorly aligned, of very low quality and/or clearly inconsistent with evidence-based instructional practices.

Grattan Institute's view is that governments can significantly improve the quality of curriculum materials available by supporting a robust quality assurance process targeted at all comprehensive materials, whether developed by governments or other publishers.

This would reduce the need for government departments to create curriculum materials in-house, a task for which they are not well-suited.

2.2 Australian governments should support a rigorous, independent, quality assurance body

The federal government should fund an independent quality-assurance body to review comprehensive curriculum materials, including both physical textbooks and EdTech-based curriculum materials, that are aligned with the Australian Curriculum, the NSW Syllabus, and the Victorian Curriculum.

Given the complexity of Commonwealth-state relations in school education, and the fact that many governments are themselves active participants in the creation of curriculum materials, the new body should be established as a not-for-profit, non-government organisation, to ensure integrity and confidence in its reviews.

There are several international examples of robust approaches to quality-assuring curriculum materials.⁵ EdReports, for example, is a US not-for-profit that reviews the quality of comprehensive English, Maths, and Science curriculum materials – including textbooks and ‘EdTech’-based materials – and publishes the results on its website.

Its reviews are conducted by accomplished teachers – with 17 years of experience on average – who receive more than 25 hours of training before they join a review team. Teams spend four-to-six months reviewing the content in each set of materials.

⁵ In addition to the example from the US, there are curriculum quality-assurance mechanisms in Singapore, Poland, and Japan. See Singapore Ministry of Education (2024). [Approved textbook list](#). Government of Singapore.; Jensen, B., Roberts-Hull, K., Magee, J., and Ginnivan, L. (2016). [Not So elementary: Primary school teacher quality in top-performing](#) systems. Learning First.; and

This takes hundreds of hours. Reviews are based on transparent criteria. The criteria for reviewing Foundation to Year 8 Maths curriculum materials, for example, are set out in a 100-page guide. Reviewers examine materials page-by-page. For example, one criterion for assessing Year 1 Maths curriculum materials is whether materials provide students with enough opportunities to practise fluently adding and subtracting numbers below 20.

EdReports has reviewed 97 per cent of the comprehensive (Foundation-to-Year 12) materials available in English and Maths in the US market. Of the Maths curriculum materials reviewed, 49 per cent fully passed EdReport’s quality benchmark.⁶ The existence of an independent and reputable review body such as EdReports means curriculum publishers compete on the quality of their materials, not the gloss of their brochures.⁷ In the US, different state governments and school districts use EdReports’ reviews to inform decisions on which curriculum materials they purchase, subsidise, or recommend to schools.

A similar model would work well in Australia. A straightforward and efficient option would be for the federal government to fund an independent, not-for-profit, quality-assurance body. This body would be focused solely on reviewing comprehensive curriculum materials – including well-structured EdTech materials – in major

Tarkowski, A. and Voicu, O. (2018). [Open textbooks in public education: Experience from Poland and Romania](#). 2018 Open Education Policy Forum.

⁶ EdReports. (2024). [EdReports 2023 annual report](#).

⁷ For further details see Section 5.3 of Grattan Institute’s *Maths Guarantee* report (Attachment C).

subject areas in Australia, drawing on lessons learnt from international review processes.

Financial sustainability, independence, and rigour will be crucial for the quality assurance process to deliver meaningful benefits for teachers and students. A new quality assurance body will need to have sufficient independence to develop rigorous, subject-specific evaluative criteria and hold firm on a high-quality standard, irrespective of whether it is reviewing materials created by governments or external publishers. It is not clear that a government-run quality assurance body would be granted sufficient independence from government to hold firm on a high-quality standard, given governments themselves are active publishers of materials.

An independent, not-for-profit, quality assurance body, supported at least in part through an endowment funding model, would help ensure independence, rigour, financial sustainability, and trust. The UK's Education Endowment Foundation is an example of a not-for-profit organisation, funded largely through a government endowment, that has enabled it to retain sufficient independence to provide frank and fearless advice in the public arena.

Grattan Institute estimates an endowment of about \$60 million could fund a quality-assurance body for the next 20 years. An initial \$24 million endowment would support the curriculum materials quality-assurance body for a start-up period of six years.

The federal government, and the states and territories, should also commit to ensuring that any comprehensive curriculum materials they develop or subsidise are also reviewed.

Recommendation 2:

The federal government should invest in a genuinely independent, curriculum materials quality assurance body to provide information to systems, schools, and teachers on the best-quality comprehensive curriculum materials. This body should:

- Quality assure comprehensive curriculum materials only – including EdTech curriculum programs where appropriate – that have been developed by governments, not-for-profits, and commercial publishers.
- Quality assure curriculum materials against rigorous and transparent subject-specific evaluative criteria, and publish the results.

Given the complexity of Commonwealth-state relations, a national not-for-profit body that is independent of governments but funded through endowment contributions would help ensure trust, rigour, and integrity of reviews. There is international precedent for such an approach.

State and territory governments could then focus their efforts on encouraging schools to use the highest-quality curriculum materials available, including through subsidies if desired.

3 Provide national leadership on EdTech and AI in schools

The PC's interim report recommends the federal government 'endorse a national edtech toolkit' and coordinate a 'national process to develop advanced ed tech tools' (pp. 22 and 23).

Comprehensive 'EdTech'-based curriculum materials should be included in curriculum material quality assurance processes, as discussed in Section 2.

With respect to the broader landscape relating to EdTech and Artificial Intelligence, which continues to evolve rapidly, Grattan Institute is concerned that the PC's recommendations risk putting the cart before the horse.

3.1 EdTech and AI offer great opportunities, but also pose risks

The PC is right to recognise the opportunity of EdTech and AI. But there remains significant uncertainty about the best uses for AI, in particular, in Australian schools. Rather than seeking to drive national coordination at this stage, we recommend that Australian governments focus on exploration and disciplined innovation, seeking potential upsides as well as strategies to manage known risks (such as privacy risks and the challenge posed to widely used forms of assessments, such as take-home assignments and essays, from student use of AI tools such as ChatGPT).

In relation to the use of AI to support lesson planning, Grattan Institute notes there are risks that the use of generative AI could exacerbate the challenge of delivering high-quality, well-sequenced instruction.

As discussed in Section 1, high-quality instruction relies on sequenced, coordinated curriculum planning within a whole school. If individual teachers look to AI to create one-off lessons rather than taking a co-ordinated approach that pays close attention to how learning builds incrementally for students across subjects and year levels, there is a greater risk that students will experience a fractured and ad-hoc education.⁸ Current versions of AI tools are also prone to hallucinations and mistakes.

There are potentially positive ways to use EdTech and AI in schools. Examples include:

- 'Walled garden' approaches, where a defined database of information is used as the basis for generative lesson planning (e.g. Aila from Oak National Academy). These have highly sophisticated in-built prompts and can be programmed to draw only from existing sets of materials that have themselves been quality assured.

⁸ Hunter and Haywood. (12 August 2025). [Look to classrooms for a productivity boost](#), [The Australian Financial Review](#).

- Using AI for task modification, rather than whole-lesson planning.
- Using AI for data management and reporting.
- In the longer term as the technology develops, the use of AI to provide highly personalised 1:1 instruction and/or tutoring for motivated students.

While the technology is rapidly evolving, there is a role for governments in exploring and innovating to identify promising uses for EdTech and AI in schools. Exploration should seek to solve pressing problems in schools and have as its core objective improving the quality of instruction and student performance. Only once these promising uses have been identified should governments seek to fund trials and then adopt and spread effective approaches.

Recommendation 3:

The federal government should provide national leadership on EdTech and AI in schools, focusing efforts on:

- Exploration and innovation to identify the most productive uses for EdTech/AI to solve pressing problems in schools.
- Funding trials of promising uses, to determine implementation requirements and efficacy.
- Creating guidelines to mitigate the risks of harm from AI (especially in relation to assessments).

4 Invest in subject-specific professional development for teachers

The PC's interim report notes that 'effective professional development initiatives are essential for implementing new programs and teaching strategies, since they promote teachers' confidence and self-efficacy' (p. 27). We agree that professional development is essential to support teacher practice.

Grattan Institute's recent reports, *The Reading Guarantee* (Attachment B) and *The Maths Guarantee* (Attachment C), find that governments have dramatically underestimated the professional development requirements for teachers and school leaders.

While the PC's interim report focuses on the importance of training in new EdTech and AI tools, we should not lose sight of the need for professional development in other areas. Grattan Institute recommends investing in high-quality, subject-specific professional development that develops teachers' and leaders' knowledge and skills in effective, subject-specific instruction, assessment, and catch-up support.

4.1 Teachers need subject-specific professional development to support effective classroom instruction

Improving teacher quality will boost student performance, so effective teacher training and professional development is critical.

Grattan Institute's research into primary Maths demonstrates the need for high-quality, subject-specific professional development. In Maths, as in other subjects, teachers need strong pedagogical content knowledge, which includes a strong grasp of Maths knowledge and skills, to teach effectively.

A Grattan Institute survey of 1,745 primary teachers and school leaders, combined with analysis of teachers' Maths background, shows that teachers do not necessarily have strong pedagogical content knowledge in the subject.⁹ Some primary teachers struggled with Maths before joining the profession, not all teachers feel confident to teach Year 6 Maths, and many have concerns about their colleagues' Maths teaching ability.

With effective on-the-job training and high-quality guidance, graduates who struggled with Maths when they were in school or at university could become adept with Maths once they begin teaching. Our survey suggests that, by and large, this is not happening. Most teachers and school leaders find that the guidance and professional learning offered by their school system are inadequate:

- Fewer than half of leaders we surveyed said there are high-quality professional development courses available to improve teachers' Maths knowledge.

⁹ See Chapter 3 for a discussion of the results.

- Twenty-two per cent of teachers said that, in the last year, none of the external professional learning they attended was Maths-specific.
- Only about two in five teachers agreed or strongly agreed that external professional learning improved their understanding of common misconceptions, or built their knowledge of Maths topics such as fractions.

4.2 Develop subject-specific micro-credentials on how to best to teach and lead improvement

Australian governments – including the federal government – should develop and subsidise micro-credentials on the best way to teach and lead improvement in specific subjects.

Grattan Institute's *Maths Guarantee* report sets out what this would look like in primary Maths through three different micro-credentials (see Chapter 3).

The three micro-credentials should build on one another, take between one and two years, and be tailored for different roles and expertise. The Australian Education Research Organisation (AERO) should have a role in reviewing the content of professional development to ensure it aligns with the evidence on effective instruction, similar to the role the Education Endowment Foundation has in England. Successful completion of a micro-credential should require passing a final assessment on the knowledge and skills covered by the course.

In relation to primary maths, the three micro-credentials should include:

- A course for primary school teachers or teaching assistants mainly focused on the content of the primary Maths curriculum and how to effectively teach it.
- A course for aspiring or current primary Maths leaders.
- A course on multi-tiered systems of support in primary Maths, suitable for school leaders, instructional leaders, and teaching assistants / school learning support officers.

These micro-credentials should set a new bar for evidence-informed, intensive, and long-term professional development. Current investments are insufficient. For instance, the federal government has recently invested in a course on phonics, designed for Foundation-to-Year 2 teachers, which includes just seven modules of 20-to-45 minutes each.

Grattan Institute estimates it would cost about \$2.25 million to design the three primary Maths courses, and about \$6 million to deliver them each year (see Appendix C in our *Maths Guarantee* report for costing details). States could then adapt these, if necessary, to meet local conditions.

The federal government should take a leadership role in developing a single national set of micro-credentials, to promote consistency and coherence within the teaching profession Australia-wide. Foundational subjects, such as English and Maths, should come first.

Recommendation 4:

The federal government should develop quality-assured, subject-specific micro-credentials on how best to teach and lead improvement in foundational subjects, including English and Maths.