

Challenging our most able students

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The first 12 years of this century saw a steady decline in the reading and mathematics levels of Australian 15-year-olds. This decline was especially marked among our most able students. In 2012 there were fewer Australian 15-year-olds performing at the highest international levels in reading and mathematics than there had been twelve years earlier.^[1]

This was not the case in many other countries. For example, Korea saw a significant improvement in average mathematics levels during this period. As a result, the gap between Australia and Korea – which had already been quite large – widened by the equivalent of a full year of school over these twelve years.

The proportion of high achievers in Australia is lower than in some other countries from the earliest years of school.

By Year 4, the top 10 per cent of Australian students in mathematics perform at about the same level as the top 40 per cent of students in Singapore, Korea and Hong Kong. By Year 8, this gap has widened, with the top 10 per cent of Australian students performing at about the same level as the top 50 per cent of students in Singapore, Korea and Chinese Taipei.^[2]

These observations raise questions about Australia's future ability to innovate and compete at the highest international levels in fields such as science, technology, engineering and mathematics. In the knowledge economies of the 21st century, there are likely to be implications for Australia's national productivity and for our capacity to contribute to, and not just consume, advances in these fields.

In a presentation earlier this year to the International Conference on Giftedness and Talent Development I argued that some of the ways in which we organise and deliver school education in this country may be contributing to the underperformance of our most able students. I gave three examples.

1. Failing to recognise true variability in students' levels of capability and achievement

The vast majority of Australian students progress through school with their age peers. Students are placed in mixed-ability classes and progress more or less automatically from one year of school to the next. This practice is supported by the available research; there is little evidence that either streaming by ability or having students repeat years of school is effective in improving educational outcomes.

However, underpinning this practice is an assumption that students of the same age/year level are at broadly similar levels of achievement. At the start of each school year, all students are assumed to be more or less equally ready for the same year-level curriculum. Each year is

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treated as a fresh start, and even if information about prior performance is available, it may be seen as largely irrelevant to the task at hand.

In reality, the most advanced students commencing any year of school can be up to six years ahead of the least advanced students in that year level. In reading, for example, the most advanced five per cent of Year 3 students already outperform 20 per cent of Year 9 students.^[3]

This variability in students' levels of achievement tends to be underestimated in the way schools are organised and school curricula are developed and delivered, and standard assessment processes often fail to illuminate actual student variability. Assessments against year-level expectations generally are not ideal for diagnosing and understanding the learning needs of the least advanced students or for identifying the strengths, talents and learning needs of our most advanced learners.

2. Delivering the same year-level curriculum to all students

Under the assumption that students in the same year of school are at broadly similar levels of achievement, teachers then teach the relevant year-level curriculum, accepting that some students inevitably will learn more of what they teach than others.

However, any attempt to infer a student's learning needs from their age or year level alone risks being significantly wide of the mark. And much teaching does miss the mark. Many less advanced students in our schools are being expected to learn material that they are not yet ready to learn because they lack the necessary foundations, and many of our more advanced students are not being stretched and extended by year-level expectations.

Lant Pritchett at Harvard refers to this as the 'curricular gap' – the gap between where somebody thinks or wishes students were in their learning and students' actual levels of achievement.^[4] For some students, the year-level curriculum is significantly over-ambitious, leading to frustration, disengagement and eventual dropping out. For others, the curriculum is significantly under-ambitious, leading to boredom, disengagement and failure to maximise potential.

Many years ago, David Ausubel wrote, 'The most important single factor influencing learning is what the learner already knows. Ascertain this and teach accordingly'.^[5] Lev Vygotsky went one step further – the way to maximise the probability of successful learning is to provide challenges just beyond an individual's comfort zone (in their 'zone of proximal development').^[6]

There is anecdotal evidence that, rather than being given challenges in their zones of proximal development, many very able students in our schools are being assigned the same year-level work as the rest of their class. Some teachers appear reluctant to give these students more difficult work or to assign additional, more challenging, activities. Instead, these students are often given 'free time' as a reward for completing set work early. There is also evidence that some teachers feel less confident about their ability to meet the needs of these students – something that may be a particular issue for teachers teaching out of field.

3. Equating high grades with successful learning

The third issue goes to the heart of how we define and measure success at school. Many highly able students are being told that they are performing very well because they are achieving high grades on middling expectations for students of their age.

Students who begin the school year two or three years behind the bulk of their age cohort (and five or six years behind the most advanced students of their age) are already on track to underperform on year-level expectations. Many lag their age cohort and receive low grades year after year. At the other extreme, more advanced students tend to begin each school year well ahead of other students. They commence the year at an advantage and are already on track to perform well on year-level expectations – sometimes with minimal effort.

All of this happens because, almost universally, we define success at school in terms of year-level curricula. But there is evidence, including from Patrick Griffin's research, that many of our most able students are achieving high grades while making relatively little annual progress in their learning. The lowest rates of year-on-year progress are often made by our most able students.^[7]

An alternative way of defining and measuring success at school would be in terms of the progress or growth that students make over the course of a year, regardless of their starting point. Under this approach, excellent progress would be an expectation of every student – even those who began the school year well ahead of their age peers.

Way forward?

There is a deeply entrenched belief among many educators and parents that the role of teachers is to teach the curriculum for the year level; the role of students is to learn that curriculum; and the role of assessment is to judge and grade students on how well they have learnt what teachers have taught. In fact, the requirement that teachers assess and grade all students (using 'A to E' or equivalent) against year-level curriculum expectations is currently built into Commonwealth legislation.

But just how well does this practice identify and address the learning needs of individual learners, including the most able students in our schools?

An alternative belief system – and one that I believe would better serve the needs of all students – is one in which:

- the curriculum is seen less as a body of content to be taught and learnt by all students in a particular year of school and more as a map of what it means to make progress in an area of learning over an extended period of time;
- teaching is seen less as the process of delivering the same curriculum to all students in the same year of school and more as the process of establishing where students are in their learning and providing appropriately targeted teaching and learning opportunities;
- learning is seen less as mastering the relevant year-level curriculum and more as making excellent learning progress, regardless of starting point;

- learners are seen less as good and poor learners and more as individuals who are at different points in their learning and who are capable of making good further progress if motivated and given appropriate learning opportunities;
- assessment is seen less as the process of judging how well students perform against year-level expectations and more as the process of establishing where individuals are in their long-term learning and monitoring the progress they make over time; and
- reporting is seen less as grading students on how well they have learnt what they have been taught and more as communicating where students are in their learning – that is, identifying and describing what they now know, understand and can do at the time of assessment.

[1] Thomson, S, De Bortoli, L & Buckley, S (2013). *PISA 2012: How Australia Measures Up*. Melbourne: Australian Council for Educational Research.

[2] Thomson, S, Hillman, K, Wernert, N, Schmid, M, Buckley, A & Munene, A (2012). *Highlights from TIMSS & PIRLS 2011 from Australia's Perspective*. Melbourne: Australian Council for Educational Research.

[3] Australian Curriculum Assessment and Reporting Authority (2014). *National Assessment Program, Literacy and Numeracy – National Report for 2014*, Sydney: ACARA.

[4] Pritchett, L & Beatty, A (2012). The negative consequences of overambitious curricula in developing countries. *Faculty Research Working Paper 12-035*. John F Kennedy School of Government, Harvard, Mass.

[5] Ausubel, D P (1968). *Educational psychology, A cognitive view*. New York: Holt, Rinehart and Winston.

[6] Vygotsky, L (1978). *Mind in society: The development of higher psychological processes*. (M Cole, V John-Steiner, S Scribner, & E Souberman, Eds. & Trans.). Cambridge, MA: Harvard University Press.

[7] Griffin, P (2013). As reported by Jewel Topsfield in 'results flatline for top students', *The Age*, 10 January 2013. (Accessed from www.theage.com.au/national/education/results-flatline-for-top-students-20130109-2cgud.html)

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