

InSummary:

Analysis and discussion of 10 years of NAPLAN data -
literacy and numeracy knowledge and skills in Tasmania

Dr Lisa Denny
Workforce Demographer
January 2022
www.lisadenny.com.au
[#100percentliteracy](https://twitter.com/lisadenny)

Overview

This InSummary report provides a comparative analysis of 10 years of National Assessment Plan - Literacy and Numeracy (NAPLAN) results for Tasmania, with reference to the respective Australian Early Development Census (AEDC) outcomes.

The analysis reveals dire educational outcomes for Tasmanian students over time in the context of within cohort outcomes for 2021 students as they progressed through their schooling as well as in comparison with historic cohort performance.

While policy priorities exist to improve both retention to year 12 and educational attainment in Tasmania, the implications of low and declining literacy and numeracy knowledge and skills for successful school completion are critical, particularly for boys and those from lower socio-economic backgrounds.

Previous research has consistently identified that results of year 9 NAPLAN tests across the five learning areas – reading, writing, spelling, punctuation and grammar, and numeracy – are strong predictors of year 11 and 12 performance. While writing is the best predictor of successful school completion, spelling, grammar and punctuation are the best predictors of writing competence.

This report provides a 2021 cohort analysis for each NAPLAN domain for each year group, a comparative analysis with the outcomes of the 2011 cohort, and an assessment of change over time using 10 years of data. The report also provides a socio-economic gap analysis for year 9 students whereby parental education is used as a proxy for socio-economic status as well as a gender gap.

Following the findings of the analysis, the report discusses the economic and social implications of declining literacy and numeracy skills for young Tasmanians in terms of engagement in learning, successful school completion, participating in further education and training and securing meaningful work as well as the broader implications for the workforce, industry development, and economic growth for Tasmania.

The report argues that much greater emphasis on achieving the expected standard of literacy and numeracy knowledge and skills in primary school by a range of stakeholders and policy makers is warranted. To improve educational attainment in Tasmania, *all* students need to exceed the expected level for their respective year as they progress through primary school to year 12.

The life-long and long-term costs to the economy and society of Tasmanians not acquiring the necessary language, literacy and numeracy knowledge and skills throughout their schooling is substantial, and entirely preventable.

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Glossary: NAPLAN

- National Assessment Program – Literacy and Numeracy (NAPLAN) is an annual, standardised assessment for all Australian students in Years 3, 5, 7 and 9.
- NAPLAN tests the types of skills that are essential for every child to progress through school and life. The tests cover skills in reading, writing, spelling, grammar and punctuation, and numeracy.
- The national minimum standards describe some of the skills and understandings students can generally demonstrate at their particular year of schooling, in a specific subject area or domain.
- Students who are **below** the national minimum standard have not achieved the learning outcomes expected for their year level. They are at risk of being unable to progress satisfactorily at school without targeted intervention.
- Students who are performing **at** the national minimum standard may also require additional assistance to enable them to achieve their potential.
- The NAPLAN scales are constructed so that any given score represents the same level of achievement over time. For example, a score of 700 in reading will have the same meaning in 2014 as in 2010. This enables changes in domain achievements by student cohorts or groups to be monitored over time.

NB NAPLAN was not conducted during 2020 due to COVID-19.

Reading

The reading tests measure literacy proficiency; the reading of written English and the comprehension, knowledge and interpretation of that text.

Language

The language conventions tests explicitly assess spelling, grammar and punctuation.

Writing

The writing task – either narrative or persuasive - requires students to write in response to a stimulus or prompt and is assessed against 10 criteria.

For narrative writing, criterion are audience, text structure, ideas, character and setting, vocabulary, cohesion, paragraphing, sentence structure, punctuation and spelling.

For persuasive writing, criterion are audience, text structure, ideas, persuasive devices, vocabulary, cohesion, paragraphing, sentence structure, punctuation and spelling.

Numeracy

The numeracy tests assess the proficiency strands of mathematics understanding, fluency, problem-solving and reasoning across numbers and algebra, measurement and geometry, and statistics and probability.

Each NAPLAN scale is divided into ten bands used to report student progress through Years 3, 5, 7 and 9. Band 1 is the lowest band and band 10 is the highest band.

Glossary: Australian Early Development Census

The AEDC provides a national measurement of how young Australian children have developed by the time they start school.

The AEDC reports on the percentage of developmentally vulnerable, at risk and on track children across five key developmental areas based on national 'cut-offs' which were established during the first national data collection in 2009.

- physical health and wellbeing
- social competence
- emotional maturity
- language and cognitive skills (school-based)
- communication skills and general knowledge.

Children 'developmentally on track'

- Children who score above the 25th percentile (in the top 75 per cent) are classified as 'on track'.

Children 'developmentally at risk'

- Children who score between the 10th and 25th percentile are classified as 'developmentally at risk'.

Children 'developmentally vulnerable'

- Children who score below the 10th percentile (in the lowest 10 per cent), are classified as 'developmentally vulnerable'. These children demonstrate a much lower than average ability in the developmental competencies in the respective domain.

Executive Summary

In 2012, around 1 in 5 (21.5%) Tasmanian children in their first year of school were identified as being developmentally vulnerable (1,308 students), similar to the proportion nationally. At least a further 15.6 per cent were considered 'developmentally at risk'.

By 2021 when this cohort was in grade 9 (around 6,634 students in total), 1,891 (28.5%) could not read at the level expected to engage in the wider curriculum, 2,753 (41.5%) could not express themselves in written form and 1,552 (23.4%) were not numerate.

Compared with 10 years prior (the 2011 grade 9 cohort), 2021 grade 9 students were considerably less proficient in literacy and numeracy skills. The 2021 results show an alarming decline in the high proficiency bands (9 and 10) and an equally alarming increase in the proportion below the expected standard in the range of literacy knowledge and skills.

A substantial socio-economic gap also exists between higher- and lower-SES students. While the analysis shows an increase in the proportion not exceeding the expected standards for both higher- and lower-SES students for all five learning domains, the rate of increase is greater for lower-SES students and the substantial socio-economic gap widened further for three key domains. The socio-economic gap ranged from 46.3 percentage points for grammar and punctuation to 37.5 percentage points for numeracy.

A concerning gender gap also exists. Over half of year 9 male students (52.7%) did not exceed the expected standard for writing compared with a third (32.4%) of female students. While the average gender gap over the period was 21.5 percentage points, the gap narrowed slightly over the period.

These disturbing trends warrant many questions, honest discussion and truthful answers. Further investigation is an imperative.

While policy priorities exist to improve both retention to year 12 and educational attainment in Tasmania, the implications of low and declining literacy and numeracy knowledge and skills for successful school completion, participating in further education and training and securing meaningful work are dire, particularly for boys and those from lower socio-economic backgrounds.

While in the past, those with poorer literacy and numeracy skills have been able to secure employment in low skill or manual work, these jobs are either transforming or disappearing with the infiltration of the technological revolution into work and life. As a result, the demand for strong foundational and occupation-specific language and literacy (communication) and numeracy skills is ever-increasing across the skill spectrum and in a more highly-skilled, technology driven economy and society.

Industries and workplaces demand occupation-specific reading comprehension, writing and oral communication skills; numeracy capabilities such as measuring and calculation, data recording and interpretation and cost estimation as well as digital literacy skills. These occupation-specific skills can not be acquired without solid foundational language, literacy and numeracy knowledge and skills in the first place.

Low literacy and numeracy affects the type of jobs we can offer in Tasmania, the industry investment we can attract, support and sustain, our productivity potential, and the level and distribution of public revenue for crucial social services.

While the 2021 grade 3 NAPLAN results show an improvement in most indicators compared with other cohorts, the historic trend over time has been for literacy and numeracy skills to deteriorate as a cohort progresses through the education system.

It is critical that this trend is arrested immediately and that subsequent generations are supported throughout their schooling to not only exceed the expected standard in literacy and numeracy skills but to engage widely in learning, successfully complete their schooling and have the opportunity to pursue further education and training or work.

The cost is too high not to. It is surprising that there is not a greater level of outrage expressed by the industries, business community and community groups who bear the cost of this failure, particularly when it is entirely preventable.

Key Points

This analysis reveals dire educational outcomes for Tasmanian students over time, in the context of within cohort outcomes for 2021 students as they progressed through their schooling as well as in comparison with historic cohort performance.

Year 9 NAPLAN test results are strong predictors of year 11 and 12 performance. While writing is the best predictor of successful school completion, spelling, grammar and punctuation are the best predictors of writing competence. Prior achievement is also a greater predictor of future performance than school or background factors.

As the 2021 Tasmanian year 9 cohort progressed through their schooling from lower primary to high school their literacy and numeracy knowledge and skills progressively declined.

- By grade 9, 1,891 (28.5%) students could not read at the expected level to engage in the wider curriculum, compared with 1,074 (16.5%) when they were in grade 3.
- Two in five (41.5%) of year 9 students could not express themselves in written form compared with 10.9% when they were in grade 3.
- Almost a quarter (23.4%) of year 9 students were not numerate compared with 18.9% when they were in grade 3.
- Compared with the 2011 year 9 cohort, a greater proportion of 2021 year 9s were below the expected level in reading, spelling and punctuation and grammar while a greater proportion was above the expected level in writing and numeracy.
- The proportion of year 9s at or below the expected standard increased over time for both higher- and lower- SES students for all five learning domains.
- Despite the proportion at or below the expected standard increasing for both higher- and lower-SES students, the gap widened between them for all domains other than writing and numeracy. The socio-economic gap for those at or below the expected standard ranged from 46.3 percentage points for grammar and punctuation to 37.5 percentage points for numeracy.
- Over half of year 9 male students (52.7%) did not exceed the expected standard for writing compared with a third (32.4%) of female students.
- The proportion of male year 9 students at or below the expected standard for writing exceeded the proportion of female students by an average of 21.5 percentage points. However, the gap between male and female students narrowed over the analysis period by 1.2 percentage points compared with the average.

Importantly, students who are exempt or withdrawn from NAPLAN testing often do not meet the expected standard in the respective domains. Combined with high rates of absenteeism which indicate struggling and disengaged learners, the 2021 results could be considered a 'best-case scenario'.

NAPLAN: 2021 Year 9 cohort

As the 2021 year 9 cohort progressed through its schooling, their literacy and numeracy knowledge and skills progressively declined.

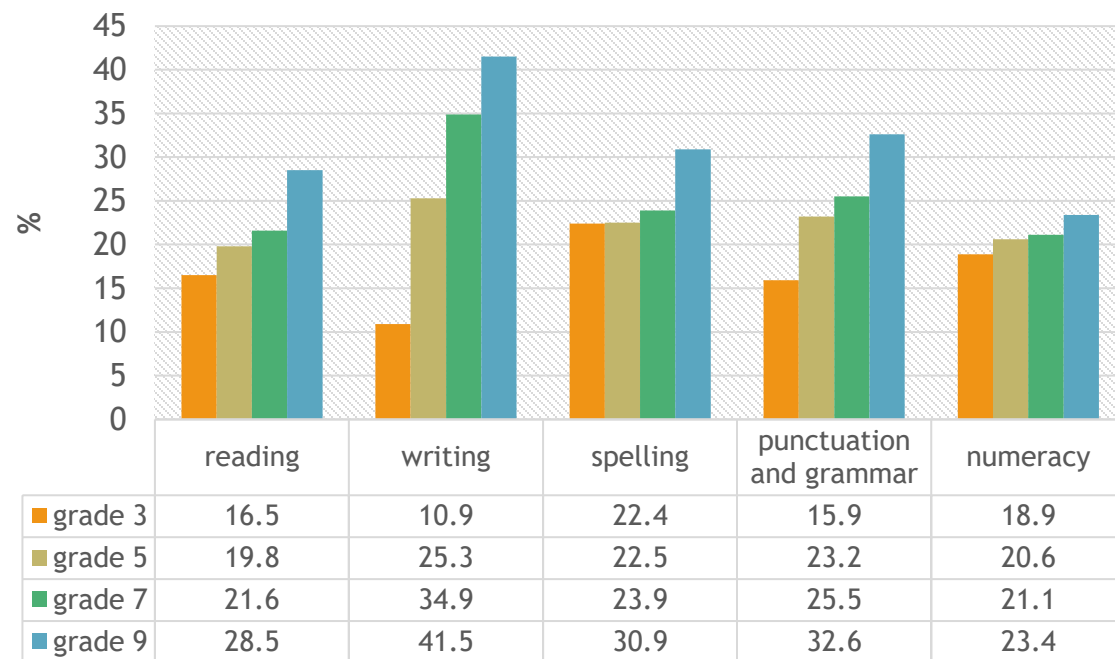
By grade 9, 1,891 (28.5%) students could not read at the expected level to engage in the wider curriculum, compared with 1,074 (16.5%) when they were in grade 3.

Given that reading underpins other literacy skills, it follows that punctuation and grammar, spelling and writing declined even further. Alarming 41.5 per cent of year 9 students could not express themselves in written form compared with 10.9 per cent when they were in grade 3.

Almost a quarter (23.4%) of students were not numerate compared with 18.9 per cent when they were in grade 3.

Around 1 in 10 year 9 students were 'absent' at the time of the NAPLAN tests (as opposed to exempt or withdrawn). Research shows that those who do not participate in NAPLAN tests are more likely to be struggling and disengaged learners. Therefore, the 2021 results could be considered a 'best-case scenario'.

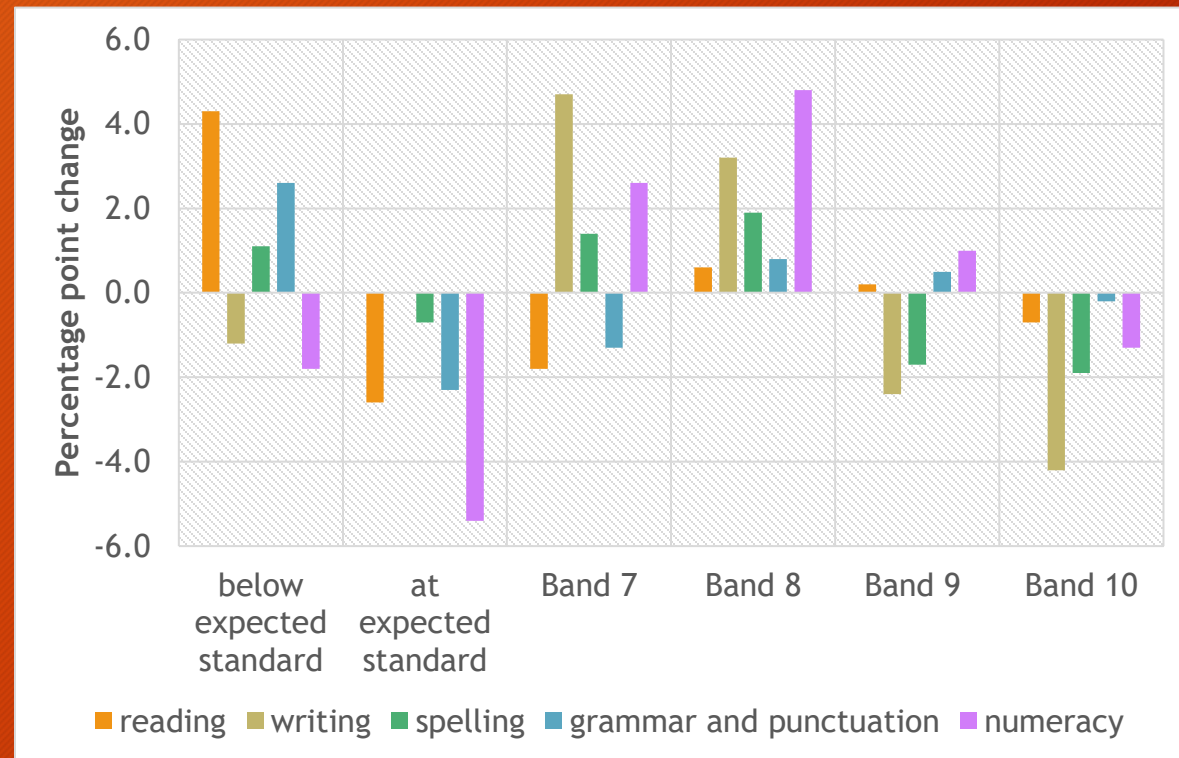
Proportion at or below the expected standard



Year 9: 10 year change 2011 to 2021

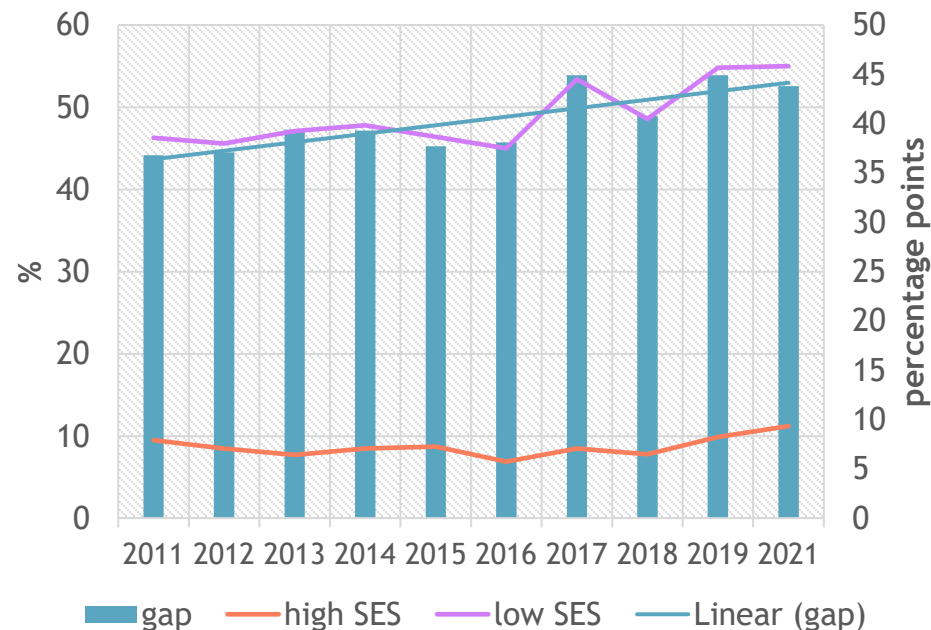
Compared with the 2011 year 9 cohort, a greater proportion of 2021 year 9s were below the expected level in reading (4.2 percentage points), spelling (1.0 percentage points) and grammar and punctuation (2.5 percentage points).

A greater proportion were above the expected level in writing (1.3 percentage points) and numeracy (7.1 percentage points) compared with the 2011 cohort. However, the increase was driven by a decline in the proportion at the expected level and an increase in bands 7 and 8 (and a small increase in band 9 for numeracy) and offset by substantial declines in the proportion in bands 9 and 10.



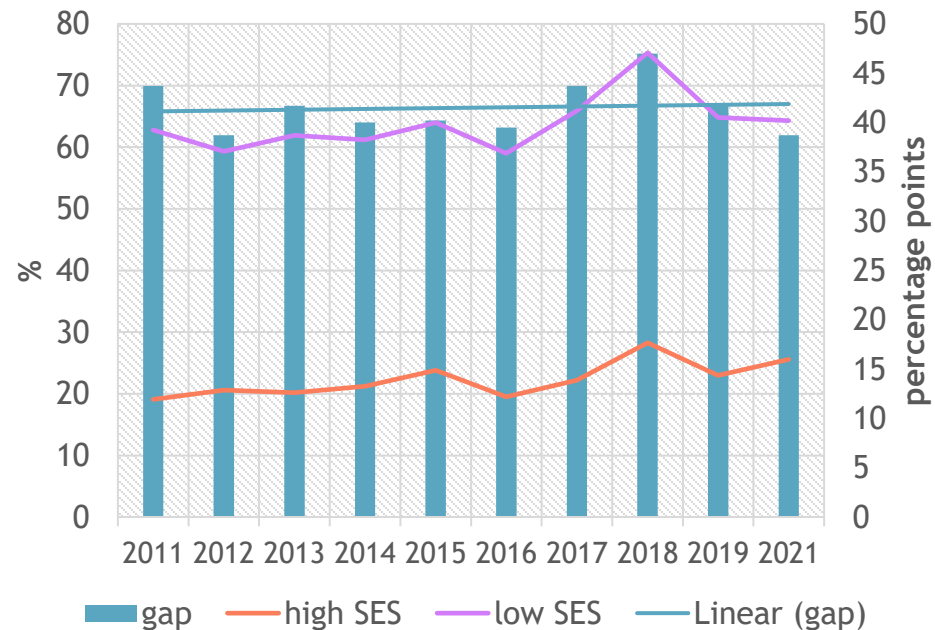
Year 9 socio-economic status gap analysis (1)

Proportion at or below the expected standard and percentage point gap - Reading



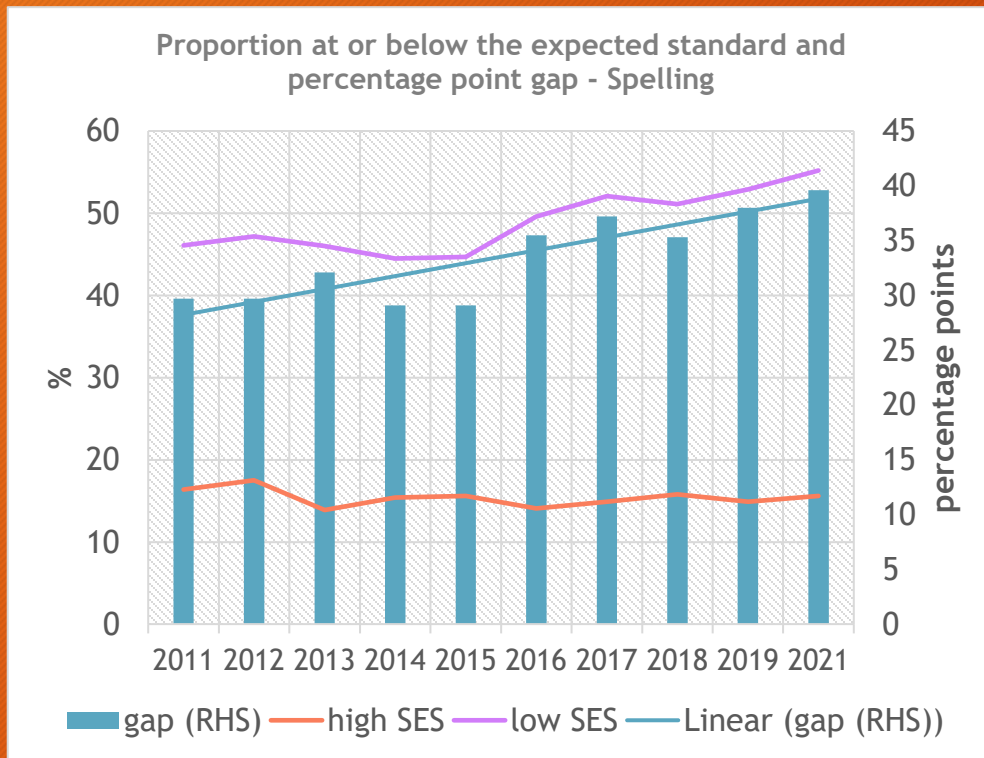
The proportion of students at or below the expected standard for reading increased over the period by 2.5 percentage points above the average for higher SES students and 6.0 percentage points for lower SES students. The gap between them widened further by 3.5 percentage points compared with the average to a 43.8 percentage points difference.

Proportion at or below the expected standard and percentage point gap - Writing

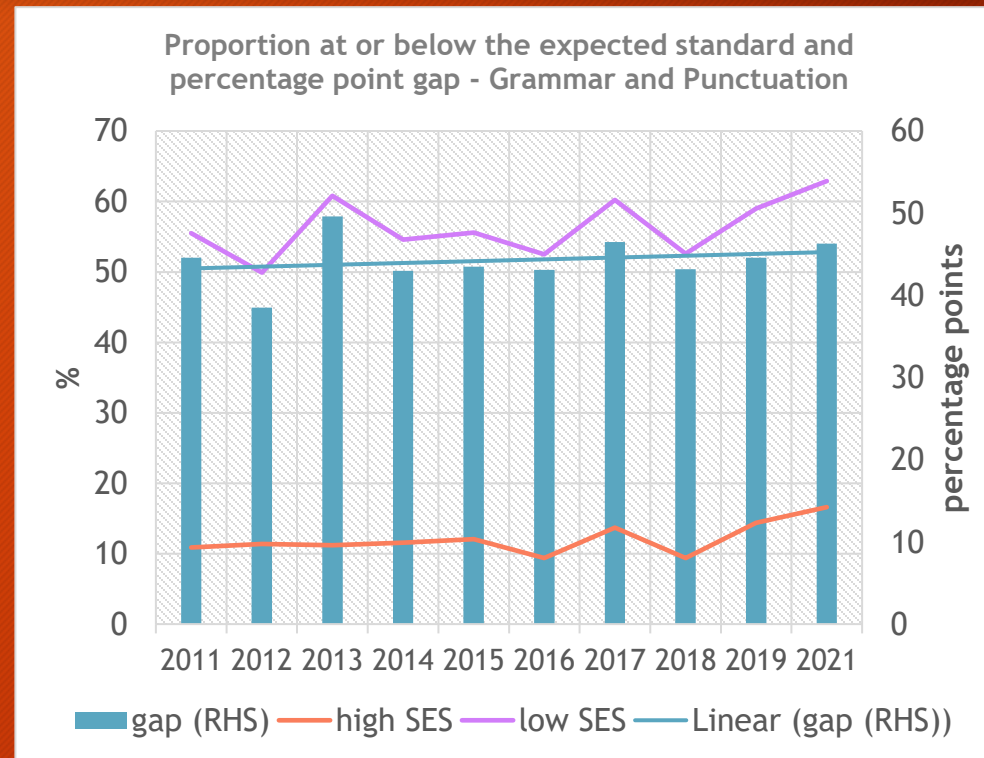


While the proportion of students at or below the expected standard for writing increased over the period by 3.3 percentage points above the average for higher SES students and 0.5 percentage points for disadvantaged students, the gap between them narrowed by 2.8 percentage points compared with the average to a 38.7 percentage points difference in 2021.

Year 9 socio-economic status gap analysis (2)

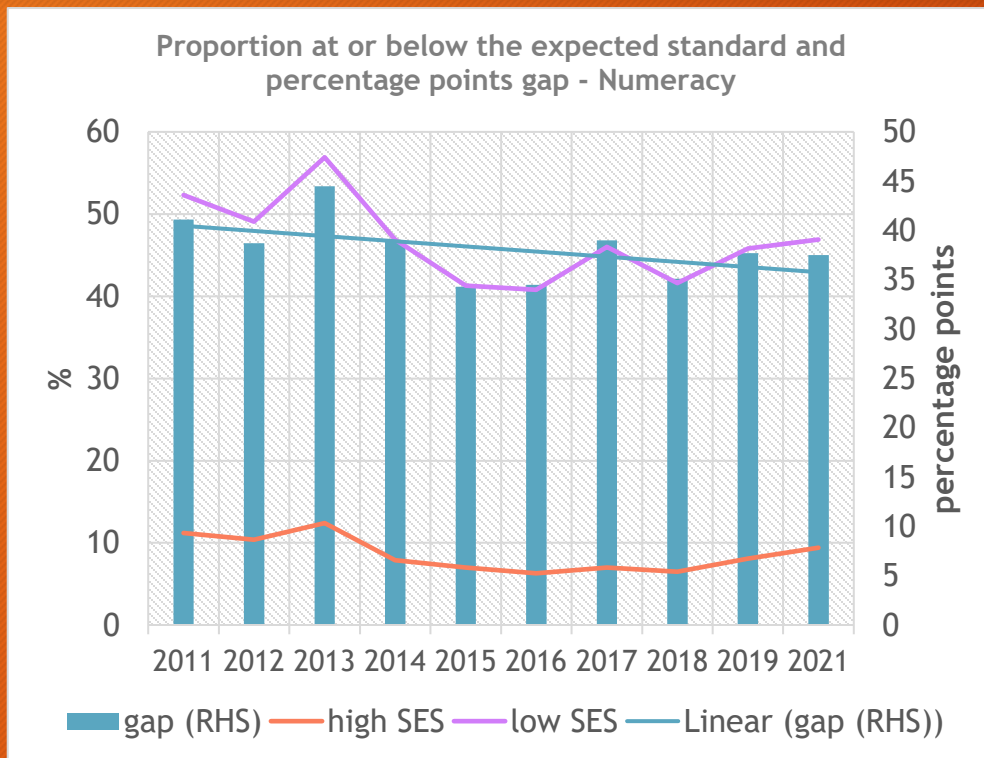


The proportion of students at or below the expected standard for spelling increased over the period by 0.2 percentage points above the average for higher SES students and 6.3 percentage points for lower SES students. The gap between them widened by 6.1 percentage points compared with the average to a 39.6 percentage points difference in 2021.

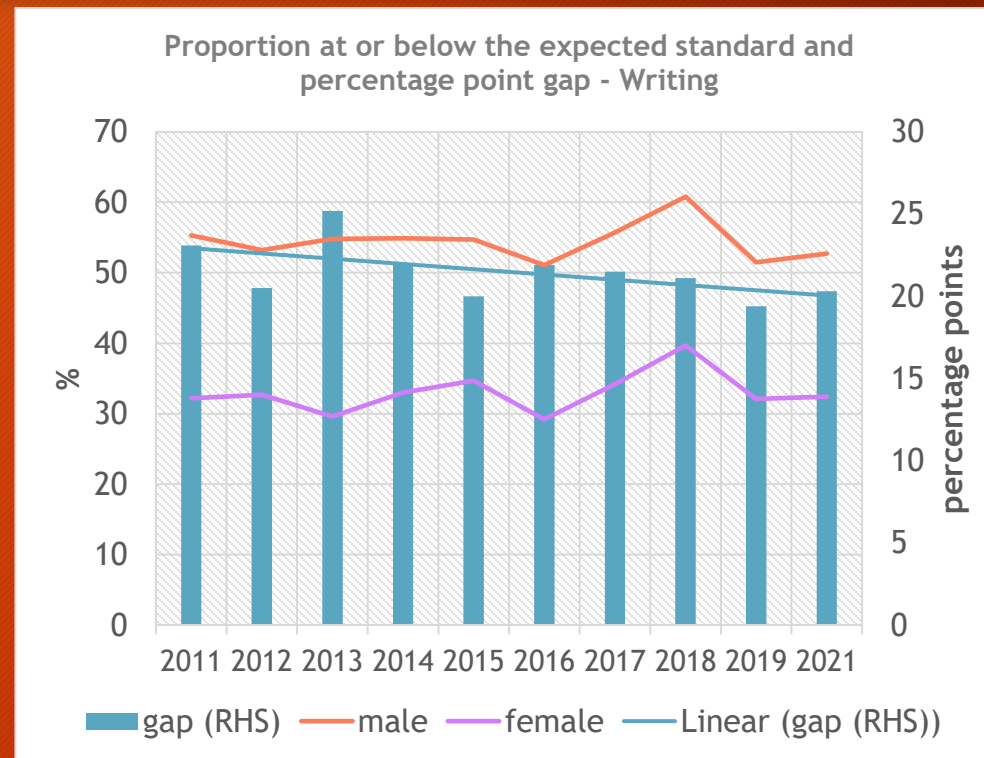


The proportion of students at or below the expected standard for grammar and punctuation increased over the period by 4.5 percentage points above the average for higher SES students and 6.5 percentage points for disadvantaged students. The gap between them widened by 2.0 percentage points compared with the average to a 46.3 percentage points difference in 2021.

Year 9 socio-economic status gap analysis (3)



The proportion of students at or below the expected standard for numeracy increased over the period by 0.8 percentage points above the average for higher SES students and 0.1 percentage points for lower SES students. The gap between them narrowed by 0.6 percentage points compared to the average to a 37.5 percentage points difference in 2021.



From a gender perspective, the proportion of students at or below the expected standard for writing improved over the period by 1.8 percentage points below the average for male students and 0.6 percentage points for female students. The gap between them narrowed by 1.2 percentage points to a 20.3 percentage points difference in 2021 compared with the average in 2021.

NAPLAN: 2021 Year 7 cohort

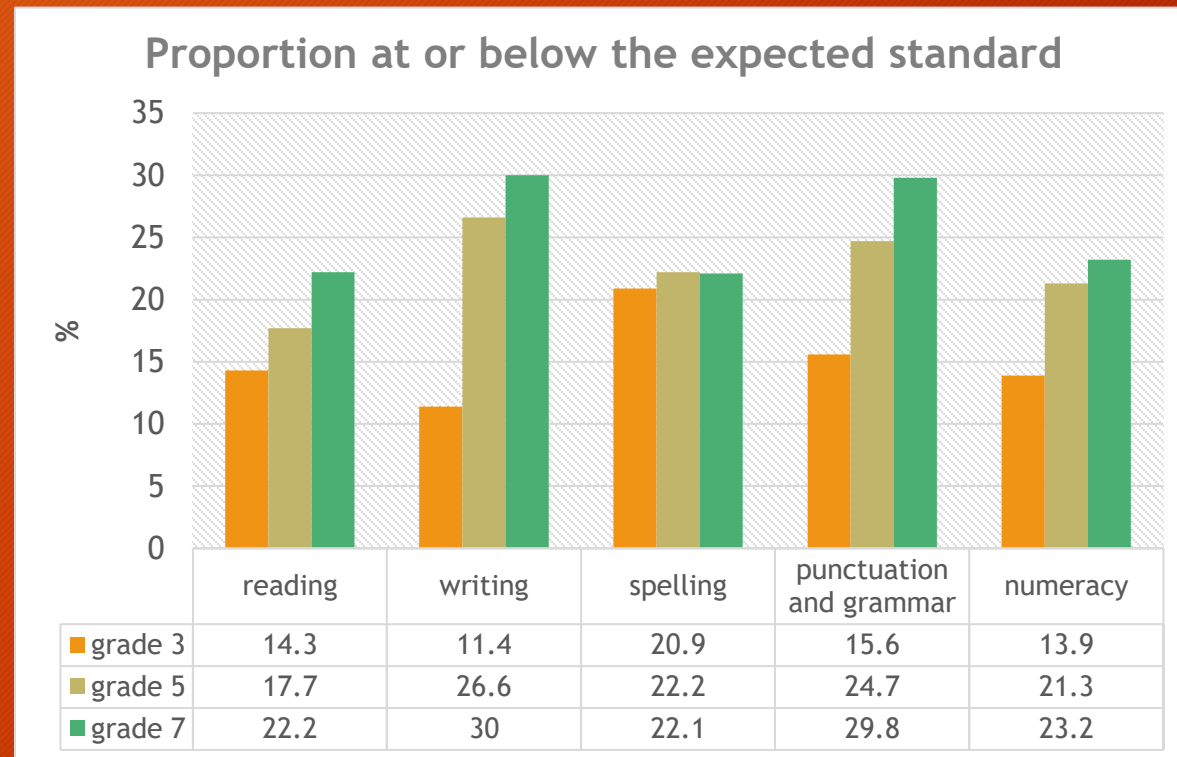
Similar to the year 9 cohort, as the 2021 year 7 cohort progressed through its schooling, their literacy and numeracy knowledge and skills progressively declined in all areas except spelling.

By grade 7, 1,524 (22.2%) students could not read at the expected level to engage in the wider curriculum, compared with 966 (14.3%) when they were in grade 3.

Considerable decline is also evident for punctuation and grammar and writing with the proportion not above the expected level by grade 7 almost doubling for punctuation and grammar and tripling for writing compared with when the cohort was in grade 3.

Around 1 in 5 students were not achieving the expected level in spelling for each grade level.

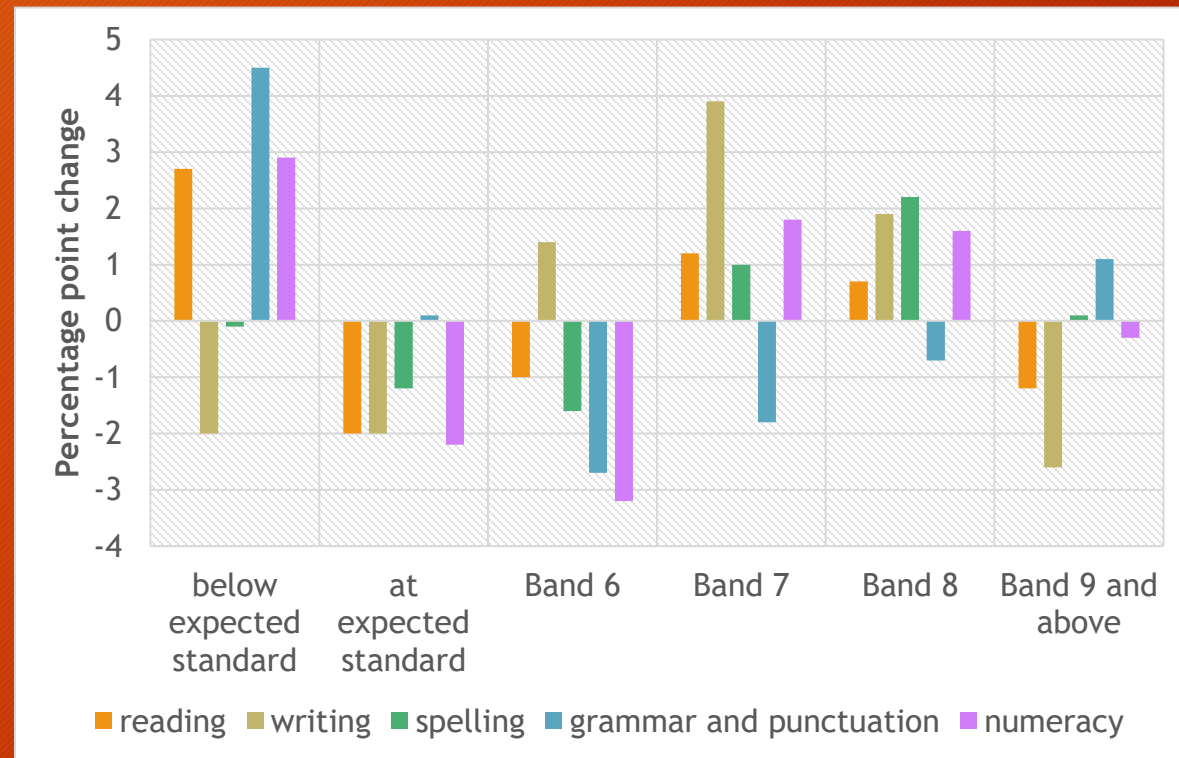
Almost a quarter (23.2%) of students were not numerate compared with 13.9 per cent when they were in grade 3.



Year 7: 10 year change 2011 to 2021

Compared with the 2011 year 7 cohort, a greater proportion of 2021 year 7s were below the expected level in reading (2.2 percentage points), punctuation and grammar (4.0 percentage points) and numeracy (2.4 percentage points), more than offsetting the declines in the proportion at the expected levels (except for spelling).

A greater proportion of students were above the expected level in writing (4.6 percentage points) and spelling (1.7 percentage points) compared with the 2011 cohort. The increase is driven by a decline in the proportion at band 6 (except for writing) and an increase in bands 7 and 8 (except for punctuation and grammar) but offset by declines in the proportion in the higher proficiency bands (9 and above) for reading, writing and numeracy.

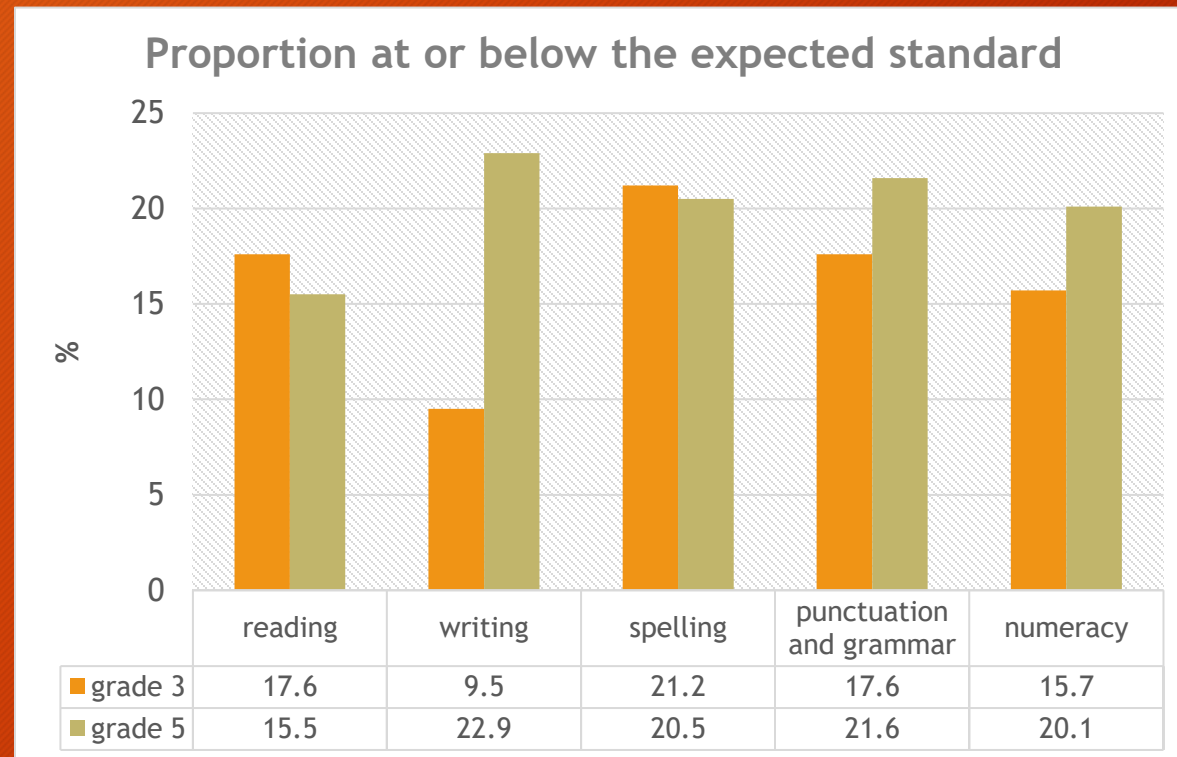


NAPLAN: 2021 Year 5 cohort

For the 2021 grade 5 cohort, the proportion at or below the expected standard for reading and spelling improved (declined) since the cohort was in grade 3.

The proportion at or below the expected level for punctuation and grammar increased by 4.0 percentage points and by 13.4 percentage points for writing so that more than 1 in 5 students were not able to express themselves in written form as expected at their year level (1,477 students).

The proportion at or below the expected level for numeracy increased to 20.1 per cent or 1,296 students.

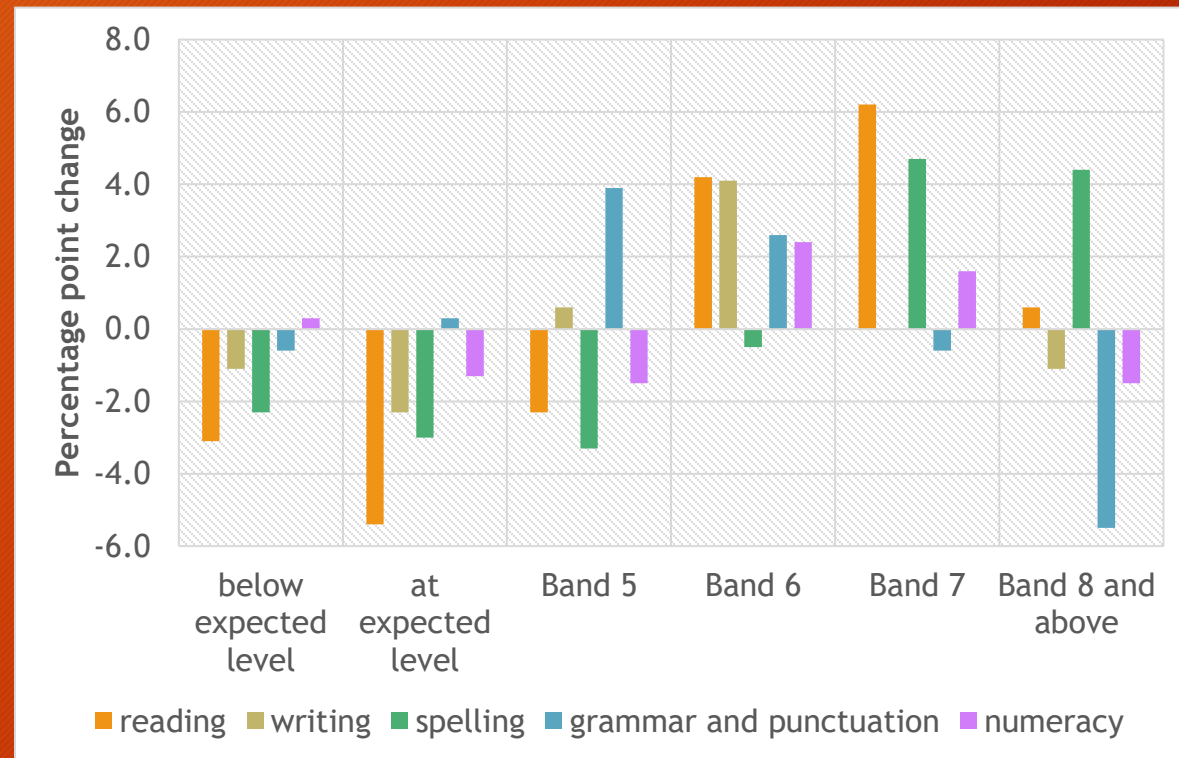


Year 5: 10 year change 2011 to 2021

Compared with the 2011 grade 5 cohort, a considerably greater proportion of students were above the expected level in all literacy domains as well as numeracy.

These gains were realised predominantly in bands 6 and 7 with the exception of punctuation and grammar which declined considerably for bands 8 and above and had comparatively little improvement in those bands at or below the expected level.

Grammar and punctuation (syntax) are critical pre-cursor skills for more developed written communication skills as students progress through their schooling, enabling them to participate in the wider curriculum.

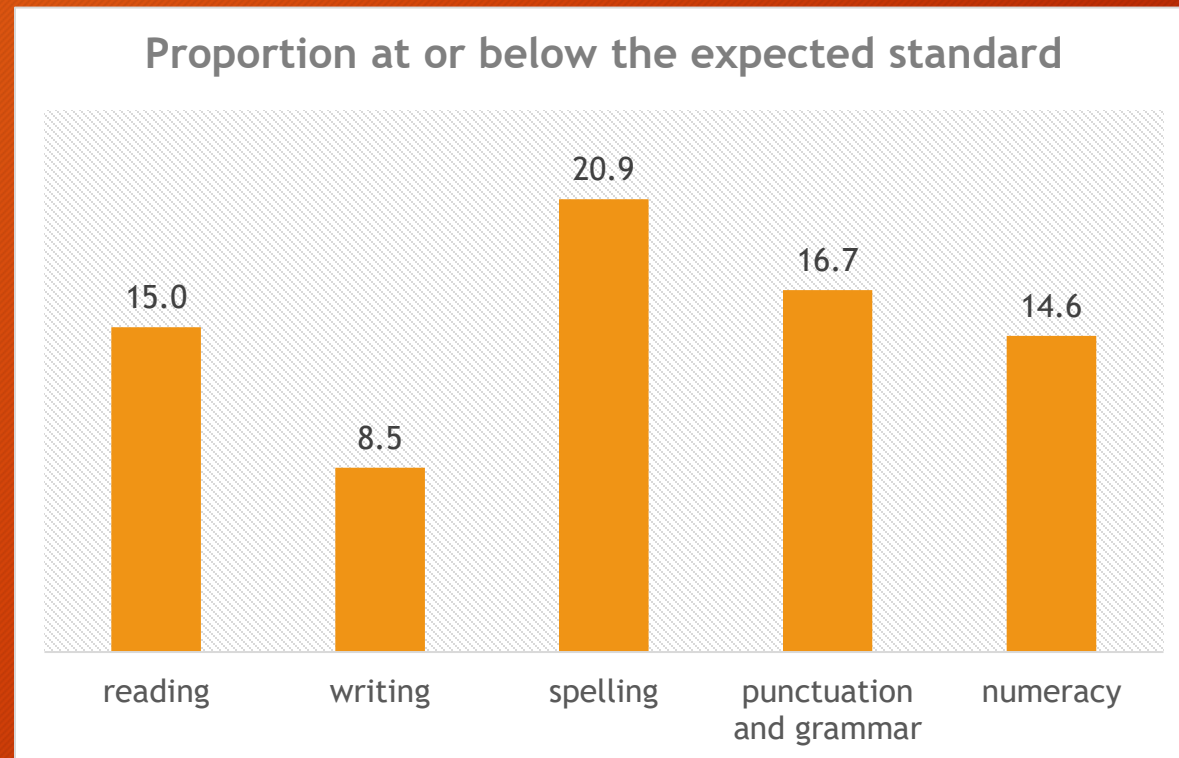


NAPLAN: 2021 Year 3 cohort

In 2018 when the 2021 grade 3 cohort was in their first year of formal schooling, 21.5% (1,255 students) were identified by the Australian Early Development Census as being developmentally vulnerable in one or more domains. At least a further 15.4% were considered developmentally at risk.

By grade 3, a considerably lower proportion were considered below or at the expected level for each literacy domain and numeracy.

Compared with the other grade 3 cohorts in this analysis, the proportion not meeting expected standards was lower for the 2021 cohort in all domains except for punctuation and grammar and numeracy.



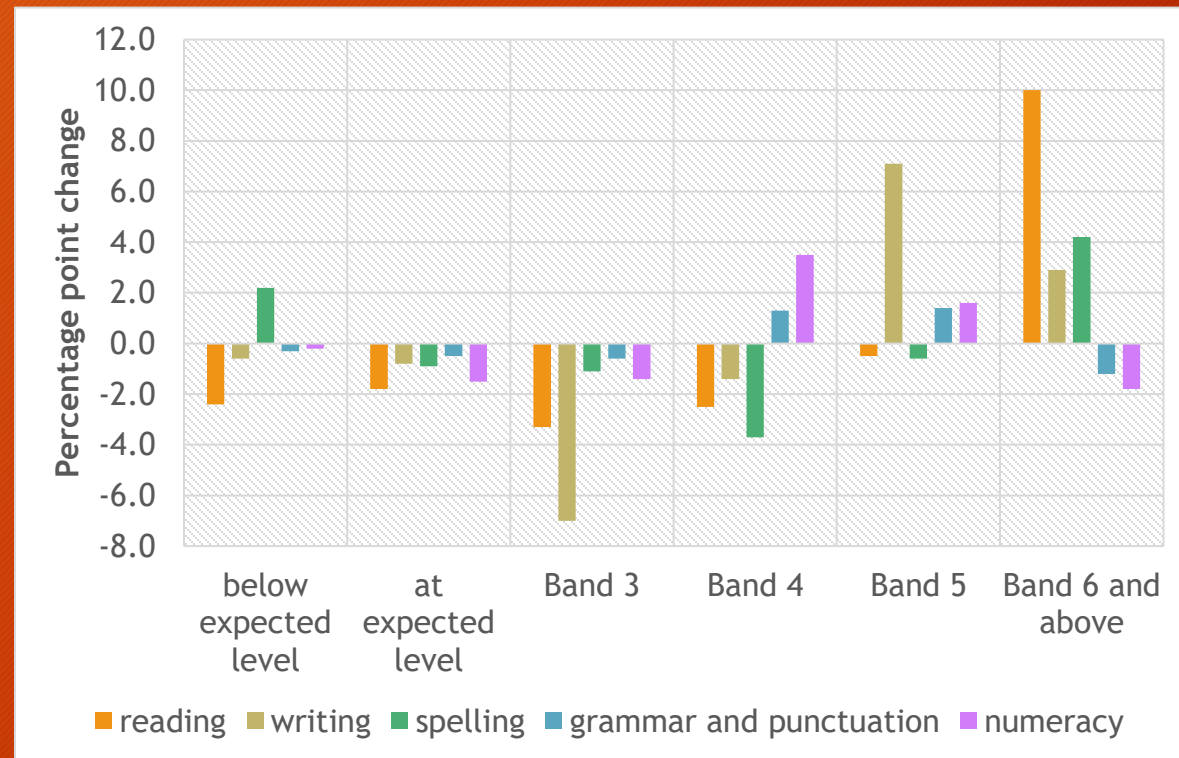
Year 3: 10 year change 2011 to 2021

Compared with the 2011 grade 3 cohort, a considerably greater proportion of the 2021 grade 3 cohort were above the expected level in four domains; reading (3.7 percentage points), writing (1.6 percentage points), punctuation and grammar (0.9%) and numeracy (1.9 percentage points).

The gains in proficiency were particularly evident in the higher bands.

A greater proportion of the 2021 grade 3 cohort were at or below the standard for spelling by 1.2 percentage points compared with the 2011 cohort.

These results bode well for the students progressing through their future schooling providing the upper primary and secondary schooling system can maintain and progress their literacy and numeracy development over time, as well as rectify the spelling deficiencies evident. This is particularly important as spelling is a strong predictor of writing competence.

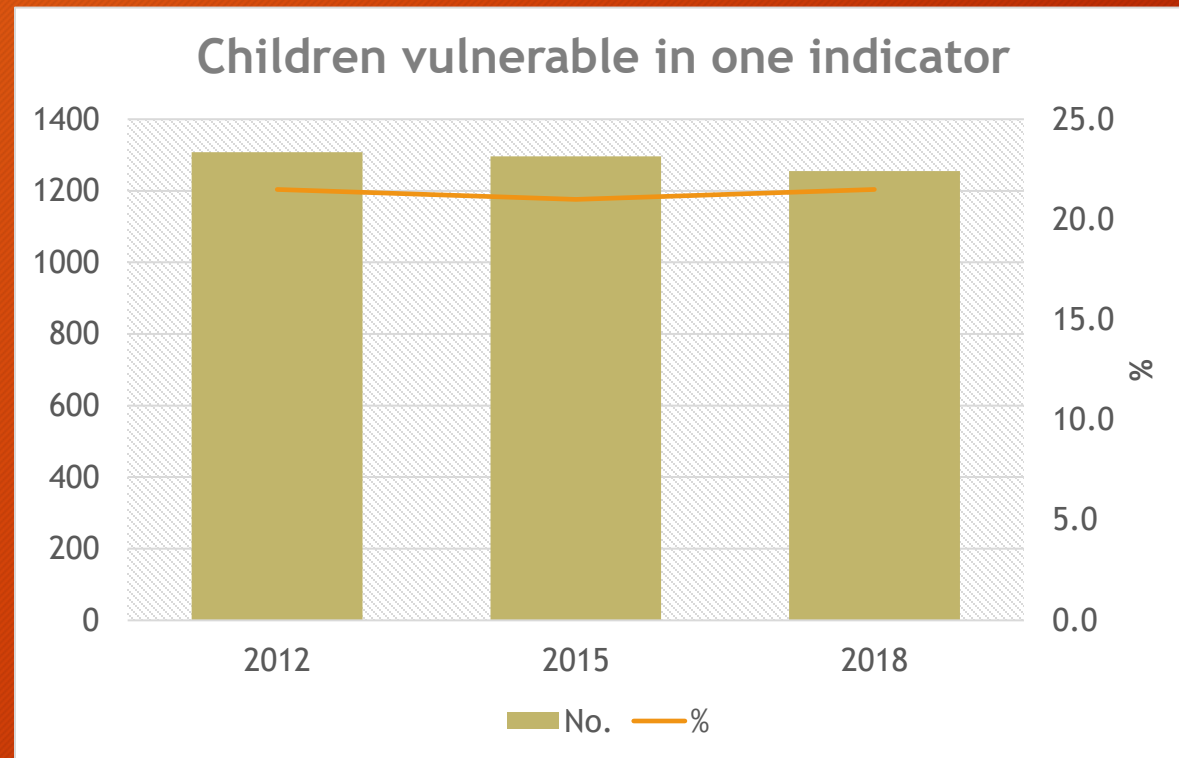


Australian Early Development Census (AEDC)

Since its inception in 2009, the Australian Early Development Census (AEDC) has identified that around 1 in 5 Australians start their formal schooling from a position of developmental vulnerability across one or more domains and that around 10% are developmentally vulnerable in two or more domains.

The proportion is similar for Tasmanian students in their first year of formal schooling. This equates to between 1,200 and 1,300 students each year, depending on the size of the cohort.

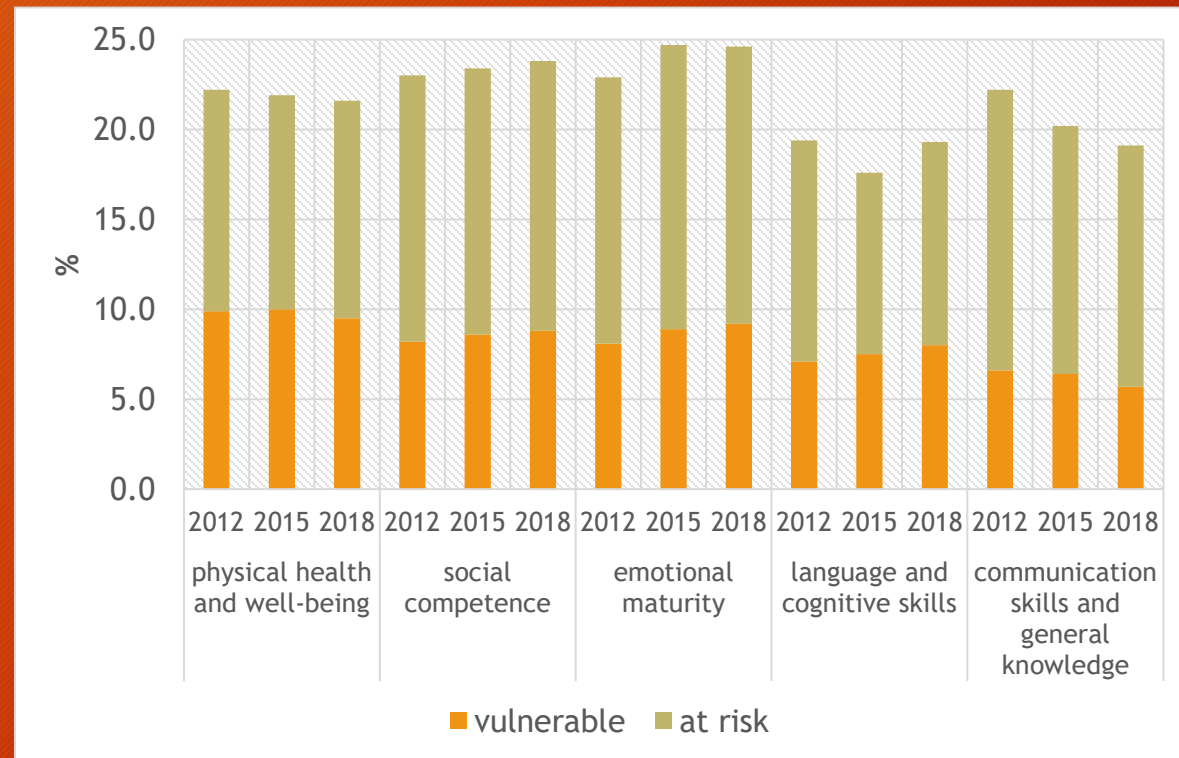
Despite a similar proportion starting school in Tasmania developmentally vulnerable to those in Australia, NAPLAN results suggest that the Tasmanian education system contributes to considerably lower levels of educational attainment compared with the national average by the time the cohorts have completed their schooling.



AEDC: developmental domains

Of the five developmental domains in the AEDC, the domains with the greatest proportion of Tasmanian students starting school vulnerable or at risk are emotional maturity and social competence, crucial pre-cursors to learning.

Since 2012, the proportion of Tasmanian students considered vulnerable in language and cognitive skills has been increasing. These skills are also a critical pre-cursor to effective learning and are the foundations for developing strong literacy skills.



Economic and social implications

Low levels of language, literacy and numeracy skills permeate the economy and society and have compounding effects.

In the past, students who did not successfully complete their schooling had been able to secure lower skill, largely manual or physical, work and/or pursue vocational education and training, particularly boys. These jobs did not require strong literacy or numeracy knowledge and skills which meant they could be relatively 'successful' in their lives and maintain their much-valued Tasmanian lifestyles.

However, with the emergence of the technological revolution and the polarisation of the workforce resulting from the displacement of many low and middle skills jobs through automation and artificial intelligence, the knowledge and skill content of jobs is transforming across the skill spectrum. All industries and jobs are increasingly demanding higher levels of foundational and occupation-specific language, literacy and numeracy skills which also underpin the vital workplace skill of effective communication.

Even so, career aspiration research suggests that young Tasmanians still aspire to work in these traditional, yet disappearing or transforming, jobs, particularly boys.

In its *The Modern Worker, A Guide to What Employers Want*, the Business Council of Australia outlines the minimum capability requirements for trade and technical jobs traditionally aligned with vocational education and training. These skills include occupation-specific reading comprehension, writing and oral communication skills; numeracy capabilities such as measuring and calculation, data recording and interpretation and cost estimation as well as digital literacy. These occupation specific skills can not be acquired without solid foundational language, literacy and numeracy knowledge and skills in the first place.

For those students who haven't acquired those language, literacy and numeracy knowledge and skills throughout their schooling, securing work and/or participating successfully in vocational education and training, let alone higher education, is increasingly challenging. Those who do not have the requisite foundational skills are finding themselves Not in Education or Employment (NEET).

In its *Workforce Development Needs 2018* report, the Australian Industry Group found that 99 per cent of employers are affected in some way by low levels of literacy and numeracy in their workforce with 39 per cent highly affected. The employers reported dissatisfaction with the use of English and basic numeracy and literacy levels of over one-fifth of school leaver workforce entrants. The most significant effect on the business was cited as poor completion of workplace documents and reports followed by teamwork and communication problems. The impact of these low levels of literacy and numeracy include time and/or material wastage, unsafe work practices, financial loss, teamwork challenges, and lack of confidence. Due to a lack of specific workplace literacy and numeracy programs, employers are increasing their internal resources to militate the effect of the problem in the workplace, at considerable cost.

A 2017 OECD adult skills report in Australia unsurprisingly traces poor literacy and numeracy skills back to initial schooling. However, perhaps surprisingly, the report also found that many well-educated adults have low literacy and/or numeracy skills.

Life-long and long-term low and declining literacy and numeracy skills have serious implications for the economy and society. The cost of poor language, literacy and numeracy skills of school leavers is borne over the long term and not just by the individual themselves. Low literary and numeracy affects the type of jobs we can offer, the industry investment we can attract, support and sustain, productivity potential, and the level and distribution of revenue for public services.

Discussion and Conclusion

Despite a similar proportion starting their formal schooling in Tasmania developmentally vulnerable to those in Australia, the Tasmanian education system produces considerably lower levels of educational attainment compared with the national average by the time the respective cohorts have completed their schooling.

As this analysis shows, the literacy and numeracy knowledge and skills of Tasmanian students as a cohort have declined as they progress through their schooling from lower primary to upper primary and to secondary schooling. This is despite students being regularly identified through a range of assessments as either at risk or below the expected standard throughout their schooling. The decline in proficiency of literacy and numeracy skills for those above the expected standard is also particularly concerning.

While the analysis shows an increase in the proportion not exceeding the expected standards for both higher- and lower-SES students, the rate of increase is greater for lower-SES students as the substantial socio-economic gap widened further for three key domains.

Students who do not meet the expected level of literacy skills for their age and year struggle to participate in the wider curriculum. Without direct intervention and support these students do not 'catch up' and are likely to disengage from learning. This disengagement can lead to disruptive behaviour and school exclusion, and, potentially, youth incarceration – the school-to-prison pipeline.

Australian Council for Educational Research (ACER) confirms that the driving forces behind socio-economic differences in both cognitive outcomes for students' and their social and emotional skills, are largely related to the availability of resources and the home environment. Schools and their culture are therefore important resources for promoting young people's social and emotional skills and, therefore, overall wellbeing. This is particularly the case for disadvantaged students who may not have access to appropriate social support structures.

Further ACER analysis of PISA data found that only 13 per cent of disadvantaged students in Australia overcame their socio-economic background to go on to higher academic performance. However, this means that 87 per cent of disadvantaged students did not and continued to perform at a low level.

For the relatively high proportion of Tasmanian children from low socio-economic backgrounds who are not likely to benefit from a strong and stable home environment, the education system and associated resources are their primary opportunity to develop the necessary language, literacy and numeracy knowledge and skills to successfully complete school, pursue further education and training and work and ultimately overcome socio-economic disadvantage.

Contributing to educational performance is satisfaction with schooling, motivation and effort. Unsurprisingly, higher motivation and effort lead to higher results and low motivation and effort lead to lower results. The latest PISA results show that one-third of Australian 15-year-old students are dissatisfied with school, increasing from 8 per cent in 2003. This may manifest in reduced motivation, effort and subsequently lower results.

Improving engagement, retention and attainment can only be achieved on a sustainable basis by prioritising the foundational skills of language, literacy and numeracy throughout a student's entire schooling, building on prior achievements and subsequent confidence. It is these foundational skills which will enable engagement and achievement in the wider school curriculum such as STEM, humanities, the social sciences and the creative arts as well as pursue further vocational education and training or higher education.

While much public discourse and policy intervention in relation to education focusses on school retention and attainment rates in years 10, 11 and 12, if the business community wants engaged, motivated and work-ready school leavers with the capability to acquire occupation-specific literacy, numeracy and communication skills, it must extend its advocacy to ensuring the foundational skills are effectively learned in primary school.

Given the life-long and long-term costs of the Tasmanian education system failing to equip all Tasmanian students with the literacy and numeracy skills required to fully participate in our economy and society, it is surprising that there is not a greater level of outrage expressed by the industries, business community and community groups who bear the cost of this failure, particularly when it is entirely preventable.

Further information and select references

- [Road Map to a Literate Tasmania](#), the Tasmanian 100% Literacy Alliance
- [Primary Reading Pledge](#), Five from Five, AUSPELD and LDA
- [Disadvantage hindering social and emotional development](#), Sue Thomson, Deputy CEO, Australian Council for Educational Research
- [How poor reading and writing feeds the school-to-prison pipeline](#), Professor Pamela Snow
- [The attitudes, values and career aspirations of young Tasmanians in the Next Generation report for the Tasmanian Seafood Industry Council](#)
- [Being work ready: a guide to what employers want](#), Business Council of Australia
- [Workforce Development Needs Skilling: A National Imperative](#), Australian Industry Group
- [Building Skills for All in Australia](#), OECD
- [Workforce Polarisation in Tasmania: implications for the future of work and training](#), Dr Lisa Denny
- [Workforce Demographer Blog](#)
- [Year 9 NAPLAN writing results the best predictor of HSC success: study](#), media article reporting on a NSW Centre for Statistics and Evaluation (CESE) report
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InSummary: The life-long and long-term economic and social implications of low and declining literacy and numeracy knowledge and skills for Tasmania - an analysis of NAPLAN data

Dr Lisa Denny: Workforce Demographer: www.lisadenny.com.au: January 2022

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