Submission No 10

INQUIRY INTO MEASUREMENT AND OUTCOME-BASED FUNDING IN NEW SOUTH WALES SCHOOLS

Organisation: The Centre for Independent Studies

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Foreword

The Centre for Independent Studies (CIS) is a leading independent public policy think tank in Australasia. Our work is driven by a commitment to the principles of a free and open society. The CIS is independent and non-partisan in both its funding and research, and does no commissioned research nor takes any government money to support its public policy work.

The CIS welcomes the opportunity to contribute to the New South Wales Legislative Council Parliamentary Committee on Education's Inquiry into Measurement and Outcome-based funding in New South Wales schools.

The CIS firmly holds that a quality education in school is vital for individual well-being and for a healthy society.

Recommendations

Measurement of outcomes

1. NSW schools should be more closely aligned with the national curriculum, including in school-based and external assessments.
2. HSC results should be made publicly transparent for each school, similar to the way NAPLAN results are displayed on the MySchool website, to enable greater transparency of outcomes and help parents to choose the best possible school for their child. School funding should be conditional on this greater transparency of outcomes.
3. The NAPLAN tests should be continually improved to gain better quality data for measuring outcomes. Any future review of NAPLAN (whether by ACARA or an external body) should investigate raising the National Minimum Standards.

Measuring teacher performance

4. Performance measures used by principals to inform teacher pay decisions should utilise student achievement data. This should be based upon both indicators of student *achievement* and *improvement*, with a focus on teachers' value-add.
5. Additional stages of assessments could be employed in order to ensure that performance measures can be applied throughout all stages of schooling (not just yet in NAPLAN years).
6. Performance could be supplemented with other forms of assessment, such as external evaluation of teaching methods and contribution to school culture.

Funding for performance

7. Funding arrangements should be more oriented towards outcomes, as an input-based approach to school funding has so far failed to improve education outcomes.
8. Outcomes-based funding could take the form of financial incentives for high-performing schools and teachers as well as potential sanctions for low performers. Rewards and sanctions would have to be non-trivial in order to meaningfully influence behaviour.
9. The authority to make pay and employment decisions should be devolved to principals, allowing them to can utilise their knowledge of local needs of schools. This would help in revitalising the teaching profession by making working arrangements more flexible and responsive.

From input to outcome funding

School funding in NSW is needs-based. This means that funding to schools is determined mostly by the number of students and their demographic characteristics (as proxy for their needs) — as well as the historical level of funding. Almost all funding (95 per cent in 2017) for government schools is determined by formulae from the Commonwealth (20 per cent) and the NSW (75 per cent) Department of Education. Given this way of funding, the model can be described as 'input-based'.

Research has found that input-based funding "misaligns incentives, rewards sub-par performance, and diminishes the imperative for significant and sustained educational outcomes."[1] For this reason, it has been concluded that "by concentrating on inputs and ignoring the incentives within schools, the resources have yielded little in the way of general improvement in student achievement."[2] In Australia — and NSW specifically — funding has perpetually increased over time, with little return observed in improved educational outcomes. This deteriorates public confidence in the current approach taken to school funding.

There is also little reason for confidence in the integrity of the Commonwealth's base funding methodology — the core of the Schooling Resource Standard (SRS). The resourcing of high-achieving schools is taken as the benchmark for how much schools should be eligible for in order to deliver to a high standard. If true, then schools identified as belonging to this 'reference group' — schools with at least sufficient resources — should have no reason to experience a decline in achievement. Following the revision of the reference group,[3] 47 per cent of schools were identified as reference schools in only one of the two reporting periods. Over one in four schools identified in the first wave of the reference group dropped out of it by the second wave — meaning that despite receiving funding equivalent to the resourcing standard, they still experienced achievement decline. In short, having enough money resulted in lower achievement — *how* money is spent is what matters.

Input-based funding is flawed as a means for maximising educational outcomes since it is based on who comes to a school rather than what happens at school. Funding "should be based upon academic growth and not just whether a student enrols and sits at a desk."[4] Too often, confronted with just about any educational policy challenge, "the remedy of choice is to provide more money but to leave the existing system for spending it in place."[5]Few incentives currently exist to genuinely promote improvement and general cost-effectiveness in school. A more appropriate alternative approach is for funding to be based on outcomes, including funding arrangements that are directly tied to individual or institutional indicators for performance (performance-based *funding*).

The OECD Principles of Budgetary Governance call on countries to "ensure that performance, evaluation and value for money are integral to the budget process." The OECD's School Resources

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[1] Mesecar, D. and Miller, C. (2015). Showing up is not enough: Performance-based funding in federal education policy, *American Action Forum: Research*, July 22 2015.
[2] Hanushek, E. (2003). The Failure of Input-Based Schooling Policies, *Economic Journal*, 113(485), pp. F64-F98.
[3] Parliament of Australia (2017). Schooling Resource Standard funding amount: 2015 update, Technical Paper.
[4] Snyder, R. (2011). A Special message to the Michigan Legislature from Governor Rick Snyder: Education Reform, State of Michigan Executive Office, https://www.michigan.gov/documents/snyder/SpecialMessageonEducationReform_351586_7.pdf
[5] Hanushek, E. (2009). Performance-based funding, *Defining Ideas*, June 9 2019, Hoover Institution.

Review[6] recommends that countries direct their efforts to evaluating how funding is translated into educational processes and outcomes. Funding systems based on outcomes intend to "reward schools for both achievement and improvement" to "promote classroom innovation, competition, and student performance."[7] In line with the NSW Government's commitment to outcome budgeting, the Treasurer announced at the 2019-20 Budget that Education would be the first department to "shift to a focus on outcomes."

[6] OECD (2017), The Funding of School Education: Connecting Resources and Learning, OECD Reviews of School Resources, OECD Publishing, Paris, https://doi.org/10.1787/9789264276147-en.

[7] Miller, C. and Mesecar, D. (2015). Performance-based funding: A new approach to funding elementary and secondary education, *American Action Forum: Research*, June 11 2015.

School funding in New South Wales

Both the Commonwealth and NSW funding models are based on the inputs of schools — namely, the enrolment data of students. To this end, there is little incentive to do things better or more affordably. Indeed, achieving cost savings simply increases how much funding a school is entitled to. This is because funding is determined in a self-referential way. A cost saving makes it appear that a school is 'under-funded'.

The motivation for needs-based funding is well-intentioned — redressing inequities from, *inter alia*, socioeconomic disadvantage. However, with an input-based arrangement, there is little reason to expect that this will translate to better educational outcomes, and thus there is little prospect that such an approach will ultimately redress disadvantage in any case.

The Resource Allocation Model (RAM) used in New South Wales is comprised of three components: a base amount (for core operational and staffing costs), equity loadings (based on socioeconomic background, Aboriginality, English language proficiency, and low level adjustments for disability), and targeted funding (to support students from a refugee background, other new arrivals, and moderate-high levels of adjustments for disability).

Government schools in NSW were funded at $15,734 per student in 2017; close to the national average of $15,738 per student. In total, public funding for NSW government schools amounted to around $10.6 billion in 2017 — around $2.2b from the Commonwealth and $8.3b from NSW — in addition to around $539m collected from parents in fees and other contributions.

Total per student funding for government schools in NSW has increased 35.1 per cent from 2009 to 2017 — higher than the national average (34.1 per cent) — however funding increases have been contributed unevenly by different sources. This is expected to increase dramatically in coming years, especially through sustained increases from the Commonwealth.

Source of funding	State	Cumulative increase (2009-2017)	Average yearly increase (2009-2017)
Commonwealth	**NSW**	70.2%	6.9%
	AUS	61.8%	6.2%
State	**NSW**	18.3%	2.1%
	AUS	20.3%	2.4%
Private	**NSW**	42.1%	4.5%
	AUS	39.0%	4.2%
Total	***NSW***	***35.1%***	***3.8%***
	AUS	***34.1%***	***3.7%***

Source: ACARA financial data

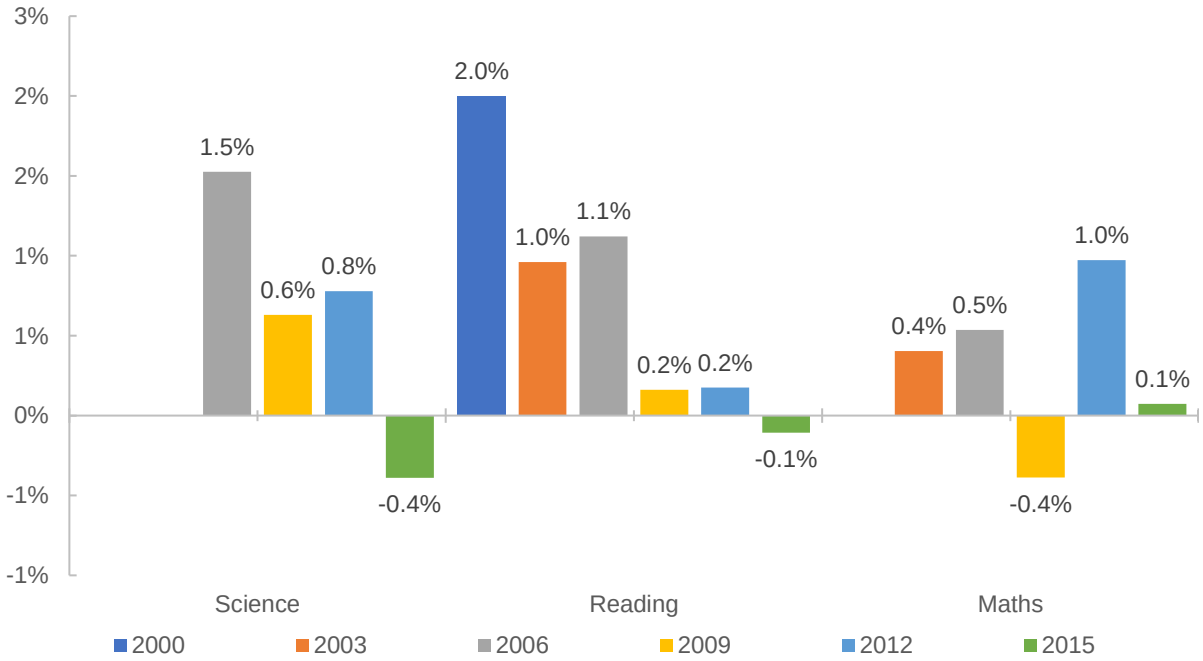
Performance of schools in New South Wales

Across just about any measure of performance in NSW schools, the system appears to be experiencing decline over recent years.

Compared to the national average, NSW students perform comparatively better across all NAPLAN domains and consistently record a higher proportion of students achieving above the national minimum standard. This is true for all domains, although in writing the proportion of students in NSW meeting the minimum standards was well below the national average until 2017. However, the *improvement* in average NAPLAN scores has been lower in NSW than the national average (except for in writing, where NSW has experienced less heavy declines than the national average).

Historically, NSW students, on average, have achieved more highly across PISA domains than the national average. However, in 2015 PISA, NSW students achieved lower than the national average in science and reading, and only slightly above the average in mathematics. Across each domain, NSW scores decreased in the latest PISA wave. In addition, decreased results for NSW students was greater than the Australian average decrease. Across all three domains in the latest wave of PISA, a greater proportion of students in NSW are below the national proficient standard than the national average.

Relative performance (%) of NSW compared to Australian average, Mean score per PISA domain (2000 to 2015).



Source: OECD PISA 2015

Transparency and measurement of outcomes

NAPLAN results displayed on the MySchool website are currently the only way parents in NSW can easily compare the academic performance of different schools. It is important that the transparency of NAPLAN test scores and growth continue to be publicly available. The more data points available for parents, and for decision makers, the better the assessment of performance that can be made.

HSC results should be displayed in a similar way to NAPLAN. Transparency of school HSC results would allow parents to make a more-informed school choice. HSC results are already partly publicly available — such as on The Sydney Morning Herald's ranking of the top 150 high-schools — but not in a consistent or easy-to-access way. NSW could lead the way in introducing such initiatives, and encourage others at the Education Council to follow suit in their equivalent systems.

Given the dependence on NAPLAN for student achievement information, there is a need for teaching in NSW to reflect the national curriculum (which, in turn, needs to better reflected in the NAPLAN examinations). It is also important that NAPLAN be continually improved over time. Given the NSW government policy focus on improving NAPLAN results, it is vital that NAPLAN be further refined to more accurately reflect literacy and numeracy achievement.

Any review of NAPLAN — whether conducted by ACARA, the NSW government, or any external reviewers — should consider raising the National Minimum Standards. It appears that the NAPLAN National Minimum Standards are currently set too low, compared to the international benchmarks. For example, one in five Australian Year 4 students are below the literacy standard in reading, according to the latest international Progress in Reading Literacy Study. But only 4 per cent of Australian Year 3 students are below the NAPLAN minimum standard for reading. This indicates that the current academic benchmarks set in Australia are not of sufficient rigour.

Teacher impact

Given that teachers make up the bulk of school expenditures (around 70 per cent), as well as being the single most important — albeit not the only — influence on students' educational experiences, any performance-based funding approach must have teachers at the centre.

The impact of teachers on students' achievement — and indeed, their long-term outcomes — cannot be understated. Research has found that having a high-performing teacher, rather than an average one, increases the lifetime earnings of a typical student by around US$14,000[8] (~$20,650) each year. Based on the average class size in Australia[9], this would equate to around $474,000 per classroom. A low-performing teacher can have a negative impact on students' lifetime earnings of around US$20,000[10] (~$29,521), compared to an average one — or around $677,507 per classroom.

International evidence indicates that attracting teachers of higher cognitive ability — in line with the higher academic standards applied in top countries (Singapore, Finland, and Korea) — could eliminate around one quarter of the student achievement gap.[11] This can include introducing more discerning teacher preparation programmes. However, it is one thing to attract high-potential teachers to the profession — sustaining success is another matter. This requires a more flexible system that rewards the best, and motivates the rest, to strive to lift their performance.

For this reason, both reducing the drag resulting from under-performing teachers and increasing the high-performing teachers within a cohort, is both an educational, and an economic, imperative. In terms of accountability approaches, this means that both rewards and sanctions must be on the table. Evidence suggests that the performance-based funding models that work are those that are not restricted to positive accountability (rewards) but also negative accountability (penalties).

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[8] Hanushek, E. (2011). The Economic Value of Higher Teacher Quality, *Economics of Education Review*, 30(3), pp. 466-479.
[9] OECD (2018). Education at a Glance 2018: OECD Indicators, OECD Publishing, Paris.
[10] Hanushek, E. (2011). Valuing Teachers: How Much is a Good Teacher Worth? *Education Next*,11(3), pp. 40-45.
[11] Hanushek, E.; Piopiunik, M.; and Weiderhold, S. (2019). Do Smarter Teachers Make Smarter Students? *Education Next*, 19(2).

Teacher pay and advancement

Under the current arrangements for teachers' remuneration, pay is mostly determined by tenure and the degree(s) held. However, international evidence shows that these are poor predictors of their effectiveness in the classroom.[12] Given the centralised wage bargaining processes that determine remuneration, this also means there is limited pay differentiation for teachers. Across-the-board pay increases reward ineffective teachers and under-reward effective teachers.

One avenue where teachers' remuneration varies is based on their participation in, and completion of, professional development. However, evidence has tended to be sceptical of an educational return for students from such activities. This is largely because when rewards are applied simply from participation, teachers tend to engage in professional development superficially and for an insufficient length of time.[13] They also attend programmes lacking in rigorous assessment of their teaching strengths and weaknesses.[14] However, this is not to say that professional development cannot improve performance. Some studies show that when activities are sustained and not superficial —for more than 14 hours of activities — this can be associated with improvements in student achievement. [15]

High-performing teachers are also often encouraged to take leadership positions in the school. However, this can mean that they have less classroom time with students — thus removing potential high-performers from direct interaction with students. Evidence suggests that Australian teachers progress relatively rapidly in advancement in schools.[16] This could see them 'peaking' early in their careers, with limited prospect for future advancement. Offering more incentives — including financial rewards — could benefit these teachers and retain them in the profession. Simply establishing professional standards at state and national levels is insufficient to lift teachers to excel; at best it marginally improves those at the bottom of the performance distribution.

A lack of flexibility in employment arrangements makes it difficult for schools to effectively select and deselect under-performing teachers. The NSW Commission of Audit (2012) has previously recommended loosening the constraints on dismissal of underperforming or 'over-establishment' (temporarily or permanently not required) teachers. School leaders need to be afforded the autonomy to make staffing adjustments as they see fit. More flexible arrangements for both pay and employment are thus potential avenues for improving performance of teachers and schools.

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[12] OECD (2012). PISA in focus: Does performance-based pay improve teaching? *PISA in Focus*, 2012/05 (May).
[13] Yoon, K.S.; Duncan, T.; Lee, S.; Scarloss, B.; and Shapley, K. (2007). Reviewing the evidence on how teacher professional development affects student achievement, Issues & Answers Report, REL 2007–No. 033). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved from http://ies.ed.gov/ncee/edlabs.
[14] Weisberg, D.; Sexton, S.; Mulhern, J.; and Keeling, D. (2009). The Widget effect: Our National Failure to Acknowledge and Act on Differences in Teacher Effectiveness, The New Teacher Project, 2E.
[15] Yoon, K.S.; Duncan, T.; Lee, S.; Scarloss, B.; and Shapley, K. (2007). Reviewing the evidence on how teacher professional development affects student achievement, Issues & Answers Report, REL 2007–No. 033). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest. Retrieved from http://ies.ed.gov/ncee/edlabs.
[16] Ingvarson, L.; Kleinhenz, E.; and Wilkinson, J. (2007). Research on performance pay for teachers, Australian Council for Educational Research, 2007-03.

Teacher performance pay

Merit pay arrangements for teachers are a performance-based funding mechanism that aligns incentives for teachers with outcomes of students. This can be through upfront bonuses (penalties), permanent increases (decreases) to salary, or using alternative non-direct financial incentives. Rewards do not need to be cash windfalls, but could instead be student debt forgiveness (particularly for recent graduates), which could lessen the fiscal burden on government. Any rewards should be subject to review in the event that performance is not sustained. While not all efforts at merit pay have been effective,[17] some recent reforms have delivered promising results.

A successful merit pay intervention introduced in Washington, DC, employed both rewards and sanctions, and multiple measures of performance.

Under that model, teachers rated as highly effective earn a substantial bonus as well as a equally large permanent salary increase after two years. Teachers deemed to be 'minimally' effective are provided support of coaches and offered one year to demonstrate improvement. Teachers found to be ineffective are at risk of dismissal.

Researchers[18] studying this model found that simply introducing the threat of possible dismissal increased the voluntary attrition of low-performing teachers by 50 per cent. Another study in Chicago found that initially awarding a financial incentive, with the threat of withdrawal if results were not met, produced significant improvement in student test achievement.[19]

There is also evidence to suggest that even the best system that is oriented only on positive accountability (rewards, bonuses, and the like) is limited in its ability to deliver educational improvements. In a system that employed bonuses only, modest improvement in student achievement were recorded — equivalent to a gain of around three to four weeks of learning.[20]

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[17] Education Endowment Foundation (n.d.). Evidence for Learning Teaching and learning toolkit: Performance pay, https://evidenceforlearning.org.au/teaching-and-learning-toolkit/performance-pay/

[18] Dee, T. S.; and Wyckoff, J. (2015). Incentives, Selection, and Teacher Performance: Evidence from IMPACT, *Policy Analysis and Management*, 34(2), pp. 267-297.

[19] Fryer, R.; Levitt, S.; List, J.; and Sadoff, S. (2012). Enhancing the efficacy of teacher incentives through loss aversion: a field experiment, *NBER Working Paper Series*, Working Paper 18237, NBER , Cambridge, MA.

[20] Chiang, Hanley, Cecilia Speroni, Mariesa Herrmann, Kristin Hallgren, Paul Burkander, Alison Wellington. (2017). Evaluation of the Teacher Incentive Fund: Final Report on Implementation and Impacts of Payfor-Performance Across Four Years (NCEE 2017-4004). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Measuring student achievement for performance pay

With respect to appropriate benchmarking for performance, objectives should be based on both *achievement* and *improvement*.

Value-added measures are commonly employed by researchers in order to estimate an individual teacher's contribution to student achievement. With appropriate techniques, the confounding factors of student and school characteristics can be accounted for with reasonable precision. Student gain scores can be meaningfully compared at each stage of schooling, and scaled appropriately, in order to produce reliable estimates of teachers' performance.

Value-added measures are already employed by the NSW Centre of Education Statistics and Evaluation (CESE)[21], and were endorsed as effective in the NAPLAN reporting review. Successful use of value-added measures includes in Tennessee's School Report Card (composed of indicators for academic achievement and value-added school impact).

Any performance measurement system should provide equal opportunity to engage teachers at each year group and in each discipline — it should not exclude anybody. This means that those performing well in their given field or cohort are not washed out and low performers are not allowed to coast.

However, any instrument for measuring performance by way of student achievement cannot be 'one size fits all'. This is because external assessments are conducted periodically (NAPLAN and the HSC), but not in each year group of students. Ensuring that teachers' performance in non-assessment years (K-2, 4, 6, 8, 10-11) is therefore a possible obstacle for genuinely measuring performance in a fair way. At all stages, alignment with the national curriculum is key.

A number of technical procedures as well as policy changes could be employed in order to resolve this matter, without overburdening schools and students with excessive additional testing.

Absent employing external entrance and exit testing for students in each year, NSW CESE should be tasked with developing instruments that reasonably approximate students' expected achievement in non-NAPLAN student years. There is already statistical capability to perform such estimates, while minimising additional testing burden. Nonetheless, relevant external assessments at various points are necessary in order to 'moderate' measurements and to ensure that there are not incentives in place to reduce rigour in order to game the system.

It is fair to say that while NAPLAN — in its current form — may be not be ideal for measuring teachers' performance, it can be made more so. In particular, making it a more effective diagnostic of student's achievement (particularly through the timeliness of reporting of results) and making it more formative (the current misalignment with everyday delivery of the curriculum in classrooms) are not insurmountable challenges, and should be addressed in cooperation with the Education Council.

Leveraging the public confidence in end-of-secondary external assessment with the HSC, a suite of assessments at the conclusion of Year 6 would assist in serving as a marker of achievement across primary school years. It can also serve as a reference point for secondary school achievement, which

[21] Bradford, D. and Clarke, S. (2015). High value-add schools: Key drivers of school improvement, Centre for Education Statistics and Evaluation, Sydney NSW.

can be used to position entrants to school — meaning that schools have better information of students' prior learning.

An external assessment conducted at conclusion of Year 10 could serve as appraisal of preparedness beyond years 7-10.

CESE has previously indicated that a measure was under consideration for estimating student learning contributions for K-3.[22] This should be pursued, so that there are relevant measures throughout each stage of schooling.

This proposed arrangement would set appropriate anchor set at key transition points for students: K-2; primary to secondary; 7-10; and secondary to potential tertiary education.

[22] NSW CESE (2014). Using value-added measures to identify school contributions to student learning, *Learning Curve*, Issue No. 6.

Measuring performance beyond student achievement

Student achievement scores must be *a* — but not necessarily *the* — component of any performance measurement system. Some critics argue that student achievement measures place undue emphasis on testing, which inevitably narrows the curriculum. Research conducted during the recent review of NAPLAN reporting[23] would appear to reject this claim, however, with 93 per cent of school leaders (and 80 per cent of teachers) disagreeing.

Employing multiple measures of performance were employed was reason for success in D.C., and reduced the 'narrowness' of employing student achievement results only. In particular, performance was measured according to the 'value-added' test scores of students as well as the ratings of teachers' classroom performance by outside evaluators. This evaluation is based from several observations per year, with a numerical score assigned according to multiple criteria, including how well teachers explain concepts and if they check to see if students understand.

Student achievement cannot be everything that is measured. Both a rigorous external assessment of classroom performance, as well as school-level performance is also necessary to complement student achievement scores, and to reflect the broadness of performance of teachers.

Rather than adopting additional expectations for teaching and leadership standards, the Committee is encouraged to pursue —along with colleagues at the Education Council — making AITSL professional standards more objective and measurable. This should allow for external evaluators to employ these in assigning ratings to teachers as part of this assessment. It must be rigorous in making evaluations and offer teachers meaningful feedback that can help them learn and improve in the classroom. In the current form, the professional standards are too vague to be applied meaningfully and objectively.

Some teachers make outstanding contributions to school culture as well as assist in many capacities beyond the classroom, or their immediate students. As a result, school leaders could use their internal staff assessment to inform remuneration. This should be based upon objective indicators, but allowing for some flexibility in order to respond to the local needs and activities of schools.

[2323] Louden, W. (2019). NAPLAN Reporting Review, prepared for COAG Education Council, June 2019.

Learning and improvement of performance

Perceptions and attitudes of those involved when it comes to accountability matter.[24] For this reason, there is a need for engagement with teachers and schools to ensure that measurement and accountability is meaningful and enjoys shared commitments to the outcomes. To this end, any scheme should have learning and improvement in mind rather than being excessively punitive or seen as too much of a 'big stick'.

To do this with NAPLAN, schools and teachers need to feel confident in legitimacy of the instrument and that measuring of performance using this tool is indeed constructive. This will require closer alignment with the curriculum, so that more teachers see it as a useful tool to assist them, rather than being parallel to their current focus in classrooms. This needs to be a priority for the Education Council.

The Louden report[25] suggests that many school leaders and teachers already find NAPLAN to be useful in promoting school improvement — 79 per cent of school leaders (and 81 per cent of teachers) surveyed used NAPLAN reporting to inform school improvement and 62 per cent (and 67 per cent for teachers) for as accountability for student achievement. 82 per cent said NAPLAN reporting was useful in understanding student progress and achievement. Around 70 per cent of parents surveyed found NAPLAN reporting useful in validating their confidence in a school's performance.

NSW should pursue the improvement of, rather than replacing, NAPLAN in order that it may inform performance assessment of schools and teachers in any prospective outcomes-based funding arrangements.

[24] Fahey, G. and Koester, F. (2019). Means, ends, and meaning in accountability for strategic education governance, *OECD Education Working Paper Series*, WP No. 204, Paris.
[25] Louden, W. (2019). NAPLAN Reporting Review, prepared for COAG Education Council, June 2019.

Implementing performance-based funding

In producing recommendations for the performance-funding model for Australian universities, the Wellings review[26] encourages the following principles for the model:

- Fit for purpose — sufficiently motivating improvements to quality without being overly punitive to stymie efforts;
- Fair — appropriately reflecting the broadness of performance given that not all institutions do or should look the same in terms of their missions, priorities, and challenges;
- Robust — transparently provided data that is accurate, reliable, and trusted;
- Feasible — be simple and cost-effective to administer, and be reported in a timely manner.

There is merit in reflecting on these in the context of a prospective model for NSW schools.

A performance-based funding model in NSW could be made fit for purpose through using performance measures principally in order to foster learning and improvement for teachers and schools. This should not preclude that more flexible funding arrangements could mean that material financial incentives can be applied to reward high achievement. At the same time, a recourse for material penalty to be applied for poor performance should be in place. This will require genuinely affording flexibility for employment matters to school leaders, beyond that already within the Local Schools Local Decisions reform.

A performance-based funding model in NSW could be made fair by ensuring that student achievement scores are part of, but not the sole, measure of performance. It should also ensure that any measure that is employed does not preference teachers and schools based on factors out of their control. For this to be possible, school leaders also need to have the autonomy to make local decisions. This means that adjustments may need to be applied so that schools and students in more disadvantaged circumstances are appropriately accounted for. Both achievement and improvement measures must be able to correct against unfairness because schools and teachers are assessed in terms of absolute and relative performance of their students.

A performance-based funding model in NSW could be made robust by employing sophisticated techniques. This is within the existing capability of the NSW CESE already. To be accurate, the model employed must precisely measure individual teacher value-add by correctly isolating the individual and school factors. To be reliable, it should generally reflect changes in teachers' performance rather than idiosyncratic factors — with differences in *measured* performance between teachers accurately reflecting their differences in *actual* performance. To be trusted, teachers, school leaders, and parents should have a sound understanding of how to interpret and understand performance measures. They should also feel that it is credible and well-intended.

A performance-based funding model in NSW could be feasible if measures are generated relatively timely, without additional imposts on schools and teachers, and easy to interpret. In its present form, NAPLAN is not sufficiently timely; however, the transition to NAPLAN Online should address this concern. Schools are already overburdened with paperwork, so additional reporting is not warranted.

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[26] Wellings, P. et al (2019). Performance-based funding for the Commonwealth Grant Scheme: Report for the Minister for Education — June 2019.

School leaders should be provided by the Department the computed performance scores of teachers and given the autonomy to make employment decisions based off this information.

Input-based funding has not worked in improving NSW educational outcomes. It is appropriate to consider alternative approaches to lift the bar in achievement and to build confidence that funding is being used effectively. Introducing performance-based funding could support improvement to the education system, which is needed given the recent declines in performance.