

State of education in New Zealand

Since the Tomorrow's Schools Taskforce, chaired by Bali Haque, published its report in December 2018, there has been a feverish debate in New Zealand. The report has polarised everyone in education, from teachers and parents, to principals and boards of trustees. All parties agree that problems exist in schooling but are completely divided on what the problems are, their size, and the correct solutions.

The Taskforce made substantial claims about the state of compulsory schooling in New Zealand, particularly the negative effects of the self-governing school model on student equity.

In response, critics labelled the report an "an attack on the autonomy of schools,"¹ "an attack on those entering the profession,"² and "an attack on state education."³

Despite the growing number of negative reactions to the report, all the responses, debates and the report itself have rightly focused on how to achieve equity and excellence for every child in New Zealand.

This was in fact a response to the latest international education figures, which show New Zealand as one of the most unequal education systems in the world⁴ with declining international performance in reading, mathematics and science.

In the most recent 2015 PISA data, New Zealand students received their lowest scores since testing began in 2000.⁵ Additionally, 2015 TIMSS data showed New Zealand students continued to perform below the international average in mathematics.⁶

The Initiative's data driven research

Around the same time the Tomorrow's Schools Taskforce was putting together its report, the New Zealand Initiative had coincidentally started working on its own research into secondary school effectiveness in New Zealand. Like the Taskforce, the Initiative was concerned about the declining performance of New Zealand students in international assessments such as PISA and TIMSS.

However, in contrast to the Taskforce, the Initiative took a more data driven approach to its research and recommendations. Using the vast amounts of data in Statistics New Zealand's Integrated Data Infrastructure (IDI) – New Zealand's largest research database – the Initiative has constructed a school performance tool⁷ with the primary purpose of evaluating the relative effectiveness of every secondary school in New Zealand.

What separates this tool from other current methods of school evaluation is its ability to separate the contribution of family background from the contribution of

the school. This allows the tool to objectively compare every secondary school in New Zealand fairly and robustly, something that has been impossible in New Zealand until now.

After analysing NCEA data on nearly 400,000 students, the Initiative has put together some of the results in the following four figures.

Figure 1: Unadjusted and adjusted average performance of secondary schools within each decile based on each student's NCEA Level 1 WRPI score

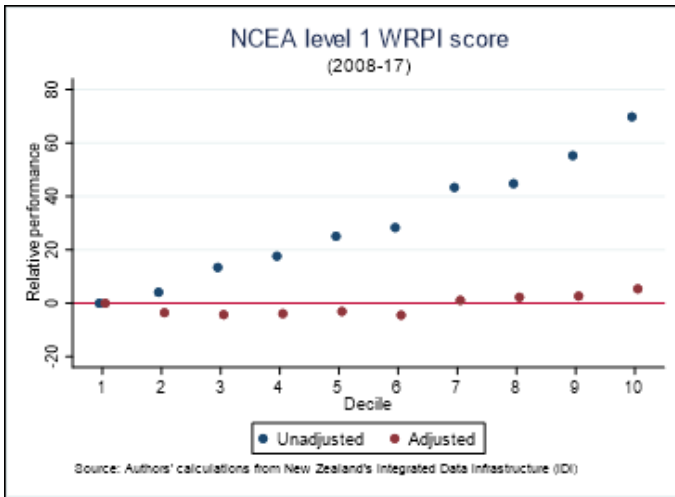


Figure 2: Unadjusted and adjusted average performance of schools within each decile based on each student's NCEA Level 1 expected percentile score

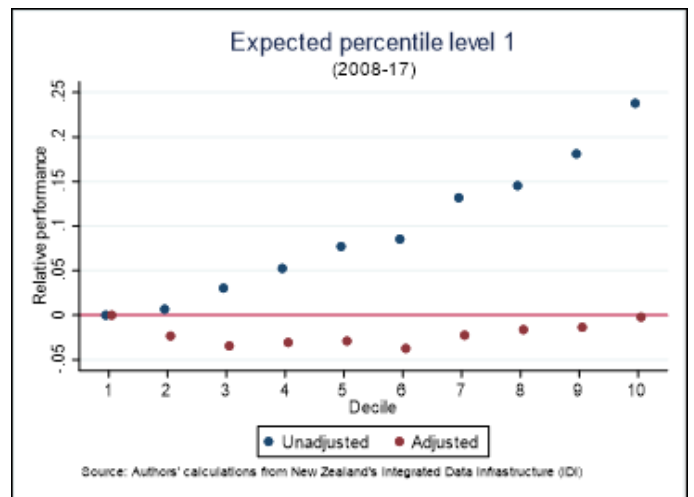


Figure 3: Unadjusted and adjusted average performance of secondary schools within each decile based on each student's NCEA Level 1 weighted score

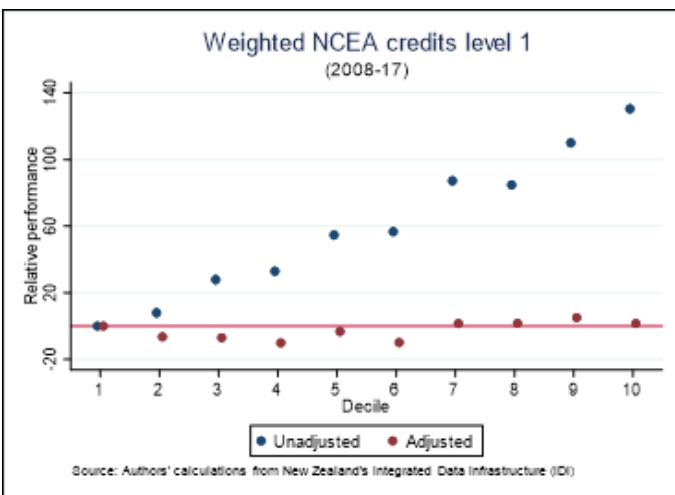
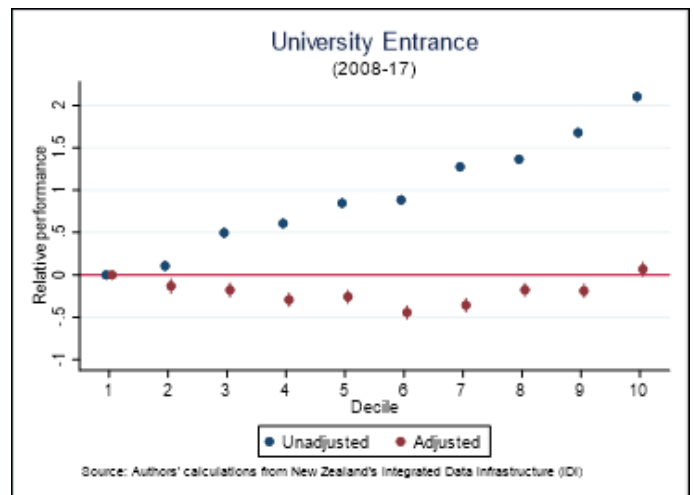


Figure 4: Unadjusted and adjusted average performance of secondary schools within each decile based on whether students achieved university entrance



In all four figures, each decile (approximately 50 schools) is represented by two points, one unadjusted (blue) and one adjusted (red). The unadjusted scores show the average performance of schools within each decile, not adjusting for the family background of each student. In contrast, the adjusted scores show the average

performance of schools within each decile after adjusting for the family background of each student.

In both cases, each school was evaluated on four academic outcomes: i) an NCEA Level 1 Weighted Relative Performance Index (WRPI) score, ii) an NCEA Level 1 expected percentile score, iii) a weighted NCEA Level 1 score, and iv) university entrance. The development of these four academic variables have been discussed in a previous Initiative report, *Score! Transforming NCEA data*.

Breaking down the results, we were not surprised to find that higher decile schools outperform lower decile schools on all four outcomes. This reflects what we currently see in NCEA school league tables and also in the inequality in education outcomes that several international reports and assessments have shown in recent years.

Importantly, however, once we separated the effect of family background, we found that the inequality in education outcomes across deciles disappears. Put another way, the inequality in education outcomes evident in school league tables is not a result of large differences in school quality, but rather large differences in family background characteristics, particularly differences in parental education.

Implications for education in New Zealand

Our results have several implications for education in New Zealand and, indeed, they change the conversation around the Taskforce's key findings and recommendations.

Taskforce: "Decile ratings, are often incorrectly used as a proxy for quality"

Crucially, the Initiative's findings provide hard evidence that decile is not a proxy for school quality. While this was not the intention of the decile funding model, its use as a proxy for school quality has grown significantly since it was implemented in 1995. In the 21 years since, the number of students in decile 8–10 schools has increased from 201,153 to 280,209; in contrast, the number of students in decile 1–3 schools has decreased from 188,089 to 179,929.⁸

One consequence of decile drift that the Tomorrow's Schools report highlights is the increase in socioeconomic segregation in New Zealand schools. Currently, decile 1–3 schools serve 24% of New Zealand students; at the same time, 45% of Maori students and 60% of Pacific students attend decile 1–3 schools.⁹

In one study from the University of Canterbury, Andrew Devonport calculated that students in Christchurch travelled 355,000km, almost the entire distance from the earth to the moon, in one week as a result of attending schools that were outside their prescribed school zone.¹⁰

While the Taskforce and other stakeholders have correctly identified the problem, their recommendations do not address the source of the issue. The incorrect use of the decile funding system is a result of the absence of any other metric or information on school quality or school effectiveness for parents. If parents have no alternative way of assessing the quality of schools, then parents will use what they think is the next best option – which for them is the decile rating of schools based on parental behaviour over the past 23 years.

The Initiative's recommendation is that the Ministry of Education not restrict school choice for parents, as recommended in the Tomorrow's Schools report, but instead

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increase transparency in our education system. Give parents better information about their local schools so they do not have to resort to proxies to decide school quality. If parents have information that shows their local low decile school is a high performer, maybe they will decide not to travel across town to enrol their child at a mid- or high-decile school that is in reality an average performer.

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Taskforce: “Quality of our schools varies significantly”

In addition to disproving the myth that decile is a proxy for school quality, the Initiative’s results also provide evidence against one of the starting premises of the Tomorrow’s Schools report, that is, the “quality of our schools varies significantly”.¹¹

Results from our school performance tool indicate that while there are a few very strong performing schools, and a few rather weak schools, the quality of most of our schools does not vary significantly, and that much of this variation in school performance is the result of large differences in family background.

For this reason, the Initiative recommends the Ministry of Education and the (potential) regional education hubs adopt the Initiative’s tool as a more precise approach to school collaboration and improvement. As in the Tomorrow’s Schools report, the Initiative’s findings show there are outliers, “there are success stories – examples of schools that have been able to innovate and ‘buck the trend’”.¹² Importantly, they exist in both high and low deciles. What the Tomorrow’s Schools report fails to do is identify which schools “buck the trend”, and outline a method to identify them.

Without the Initiative’s tool, the regional education hubs would be a blunt tool for school collaboration and improvement. Without identifying which schools are the most effective, and which schools need additional support, the hubs will be just as much in the dark as parents are currently when it comes to identifying school effectiveness.

Current school evaluation methods, such as Education Review Office (ERO) reviews, are biased to differences in family background just as parents have been when choosing schools for their children. This is evidenced by the disproportionate number of low-decile schools in the one- to two-year ERO review cycle (underperforming category) and the decile drift observed in the past 23 years.¹³

The use of similar school performance tools in education is not new. Similar tools have been used in the United States, Australia and the United Kingdom.¹⁴ Currently, Australia uses its school performance tool to identify which schools are highly effective.¹⁵ Identical to our recommendations, highly effective schools are used as case studies to find best practice. Again, highly effective schools are present in both high and low socioeconomic schools; lessons can be learnt from both.¹⁶

Conclusion

New Zealand needs a more nuanced and objective way to evaluate schools and our education system. New Zealand can no longer make school choices and education policy decisions in the dark.

In the past 23 years, New Zealand has used a self-governing school model; during the same period, we also faced teacher shortages and dramatically changed our curriculum and national assessment. The Tomorrow’s Schools report is correct: New Zealand

society has changed in the past 23 years and it will change even further in the future. It is also correct that our performance in international education benchmarks has declined and we do have unequal education outcomes. But what it has not done is provide enough evidence to prove that the self-governing schools model has led to New Zealand's declining education performance.

Certain areas of our education system clearly need significant improvement. However, the only way New Zealand will improve the outcomes for its current and future students is through good evidence-based education policy. Policy recommendations can be a blunt tool when the problem they were designed to address is not correctly measured. New Zealand cannot begin to solve its problems when we do not know how large they are in the first place. The Initiative's school performance tool is one way to measure them and a step in the right direction.

Note: The graphs in this document only show the results for NCEA level 1 outcomes; the results are almost identical for NCEA Level 2 and 3 outcomes. Additionally, the results only show the average performance across deciles. In an upcoming report slated for release later this year, the Initiative will be presenting and discussing the results of its IDI research on individual school effectiveness.

Disclaimer

Access to the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The results presented in this study are the work of the author, not Statistics New Zealand.

The results in this report are not official statistics; rather, they have been created for research purposes from the Integrated Data Infrastructure (IDI), managed by Statistics New Zealand.

The opinions, findings, recommendations, and conclusions expressed in this report are those of the author, not Statistics New Zealand.

Access to the anonymised data used in this study was provided by Statistics New Zealand in accordance with security and confidentiality provisions of the Statistics Act 1975. Only people authorised by the Statistics Act 1975 are allowed to see data about a particular person, household, business or organisation, and the results in this report have been confidentialised to protect these groups from identification.

Careful consideration has been given to the privacy, security, and confidentiality issues associated with using administrative and survey data in the IDI. Further detail can be found in the privacy impact assessment for the IDI available at www.stats.govt.nz.

- ¹ Peter O'Connor, "End of Tomorrow's Schools neoliberal experiment" (University of Auckland, 17 December 2018).
- ² Simons Collins, "Tomorrow's Schools meeting: Teachers speak out against Bali Haque's plan to make them 'numbers in a spreadsheet'," *The New Zealand Herald* (18 February 2019).
- ³ Radio New Zealand, "Headmaster slams radical proposals for schools" (8 December 2018).
- ⁴ Yekaterina Chzhen, Gwyther Rees, Anna Gromada, Jose Cuesta and Zlata Bruckauf, "An Unfair Start: Inequality in Children's Education in Rich Countries" (Florence: UNICEF, 2018).
- ⁵ Ministry of Education, "PISA 2015 New Zealand Summary Report" (Wellington, New Zealand Government, 2016).
- ⁶ Robyn Caygill, Vafa Hanlar and Sunita Singh, "Trends over 20 years in in TIMSS Findings from TIMSS 2014/15" (Wellington, New Zealand Government, 2016).
- ⁷ The Initiative's school performance tool is formally known as a contextualised value-added model and technically as a fixed-effects model with least squares dummy variables (LSDV) estimators. The development of this tool and the data used in this report will be discussed thoroughly in an upcoming technical report slated for release later this year.
- ⁸ Tomorrow's Schools Independent Taskforce, "Our Schooling Futures: Stronger Together" (Wellington: Ministry of Education, 2018).
- ⁹ Ibid.
- ¹⁰ Andrew Devonport, "The impact of secondary school enrolment schemes on school desirability, academic achievement and transport," A thesis submitted in fulfilment of the requirement for the Degree of Masters of Geographic Information Science (MGIS) (Department of Geography, University of Canterbury, 2017).
- ¹¹ Tomorrow's Schools Independent Taskforce, "Our Schooling Futures: Stronger Together," op. cit.
- ¹² Ibid.
- ¹³ Ibid.
- ¹⁴ Lucy Lu and Karen Rickard, "Value added models for NSW government schools" (New South Wales: Centre for Education Statistics and Evaluation, 2014).
- ¹⁵ Natalie Johnston-Anderson, "Sustaining Success: A case study of effective practices in Fairfield high-value-add schools" (Sydney: Centre for Education Statistics and Evaluation, 2017).
- ¹⁶ Blaise Joseph, "Overcoming the Odds: A study of Australia's top-performing disadvantaged schools" (Sydney: Centre for Independent Studies, 2019).

ABOUT THE INITIATIVE

The New Zealand Initiative is an independent public policy think tank supported by chief executives of major New Zealand businesses. We believe in evidence-based policy and are committed to developing policies that work for all New Zealanders.

Views expressed are those of the author and do not necessarily reflect the views of The New Zealand Initiative, its staff, advisors, members or officers.

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