NZ Schools:

The decile system

NZPPTA background paper

2013

The Decile System

1 Purposes of the decile system

The decile system is used to identify the distribution of the children from the lowest socio-economic families and to target resourcing to schools which have high proportions of these students. These families tend to have parents with more limited educational qualifications and years of schooling, low levels of family income, more crowded homes and are more likely to arrive at school with health and learning deficits.

This does not mean that the students from those homes cannot achieve as well as other students but it does mean that they start from a point of disadvantage and often have significant pastoral and guidance needs as well as particular educational needs.

The higher level of funding for these students reflects the higher per student costs of addressing the lower levels of social capital and the higher levels of disadvantage that tend to be found amongst social-economically disadvantaged groups and the significantly more limited capacity the schools which serve those students have to access funding from their communities.

PPTA believes that differential funding to address socio-economic disadvantage must be a component of school resourcing.

The decile system was developed to target resources to students from the poorest families, in order to provide schools with additional resources to combat the educational disadvantage associated with poverty. (Originally it was intended to allocate 'Targeted Funding for Educational achievement – TFEA)

In essence the system is designed to:

1. identify the children from the bottom 20% of families socio-economically, then
2. Provide additional resourcing to schools according to the concentration of those children in them.

The first step is to get a random selection of students on each school roll. Those students are mapped onto a mesh block.

A mesh block is a group of about 100 houses/homes in a common geographic area. It might be a street or part of a street or a larger area of land in a rural area.

Census data is used to identify the characteristics of the population in the mesh block.

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The students are then assigned values from their mesh block for rated on five factors, summarised below:

1 **Household income** - the percentage of households with equivalent income ***in the lowest 20% nationally***. So they are only looking at the lowest quintile in terms of income. The do not consider the range or average income in the meshblocks. .A meshblock with families all earning in the 21st percentile of income will score zero on this , as will a mesh block with all families in the top 1% of incomes.

2 **Occupation** - the percentage of employed parents in occupations at skill levels 4 and 5 (i.e ***labourers, all machine operators and assemblers, and others who work in occupations at these lower skill levels***). So this measure would be zero for a mesh block composed of families of Clerical and Administrative Workers and also zero for families of chief executives, legislators and general managers.

3 **Household crowding** – the percentage of households with an equivalised ***crowding index greater than one***. If a meshblock has an average of 3 people per bedroom it will receive the same weighting as having 8 per bedroom. And meshblocks with an average of 1 person per bedroom will not score, nor do they differentiate between houses with just enough bedrooms and those where there are more bedrooms than people.

4 **Educational qualifications** - the percentage of parents with ***no tertiary or school qualifications***. So a mesh block with people with only secondary school qualifications and a mesh block of people with post graduate degrees would both score zero.

5 **Income support** - the percentage of parents who directly ***received a Benefit*** in the previous year., excluding Family Support. A meshblock of families not reliant on a benefit scores zero on this, regardless of whether the parents are in low paying jobs or earning $1m per year.

Census information is used to calculate these factors for each meshblock and the five factors are weighted by the number of students from each meshblock.

All 2500 primary, secondary and composite Schools are then compared with each other against each of the five factors and ranked on each. The five ranked scores for each school are added together (without any weightings) to give a total. This total gives the overall standing of a school in relation to all other schools in the country, enabling the ministry to then place schools into ten groups called deciles, each having the same number of schools.

So, schools actually ranked on:

- How many students come from the bottom 20% of income families (no information on the others 80%)

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- How many students come from families with parents in low skill occupation (no information on the others).
- How many students are from homes which are overcrowded (no information on those that aren't)
- How many students come from families with parents with no academic qualifications (no information on the others)
- How many students come from families receiving benefit support. (Which is a proxy for unemployed and low income)

The school decile tells you only how it rates on the number of students on the roll in these categories RELATIVE TO OTHER SCHOOLS, not about the nature of the families of students you have which do not fall into these categories. Since the decile is effectively a ranking on the distribution of the students from the poorest communities the decile of any school can change after a 'renorming' even though its intake is essentially unchanged because other schools move up or down relative to it and change its ranking.

2 Problems with the decile system

Common misconceptions:

- The school decile represents an average of the socio-economic deciles of the families attending the school.
- The school decile reflects the wealth of the school community.
- Schools of the same decile have similar student intakes.

What the decile actually shows is somewhat different:

From MoE website, with our emphasis.

*"A school's decile indicates **the extent to which the school draws its students from low socio-economic communities**. Decile 1 schools are the 10% of schools with the highest proportion of students from low socio-economic communities, whereas decile 10 schools are the 10% of schools with the lowest proportion of these students."*

A school's decile indicates only its ranking in terms of the distribution of those students from the lowest socio-economic group of families

It does not represent:

- The nature of the whole school intake (i.e. the degree to which it may or may not draw from middle and high socio-economic families)
- The educational potential of the students in the school, or
- The quality of the school, or
- A mechanism on which to make fair comparisons between schools.

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BUT: The decile rating of a school has become, in the minds of those who do not understand what it is, a proxy for all of the above.

The decile may also not be an accurate representation of the community in the immediate vicinity of the school when the school is zoned or where it draws students from outside its immediate geographic area. It is prone to what the Australians refer to as the '*geographic fallacy*' – that all of the families in an area are similar.

Any school selection bias could well mean that the distribution of students from a mesh block is not even between local schools. It is possible, for example, to imagine a school surrounded by meshblocks of socio-economically mixed families in an area served by several schools (e.g. two single sex, a co-ed and an integrated co-ed) in which there is selection bias, with the children of the more well-off families in the meshblock travelling to the coed or integrated school while the poorer families in the block send their children to the local coed. Each child from that block will contribute the same values towards the calculation of their respective school decile, but their family circumstances, and educational capital and needs will be potentially quite different.

Since decile does not tell you about the mix of students in the school, only about where the school sits in relation to the distribution of the students from the poorest and least educated households, schools with the same decile (especially in the middle deciles) can vary greatly.

In theory, you could have a school which has all of its students from lower middle families who get no benefits but are all in relatively low paying jobs (but higher than the poorest 20% of families) in homes which are on the edge of overcrowding, but not quite there, and it would be decile 10.

A single decile number tells you nothing about the proportion of students from high socio-economic backgrounds and schools with the same decile may have markedly different proportions of students from middle and higher socio-economic decile families, as illustrated in the graph on the next page.

Actually, only in schools where almost all of the students are from the lowest socio-economic communities (decile 1a) would the school profile be homogenous enough to be represented by a single figure.

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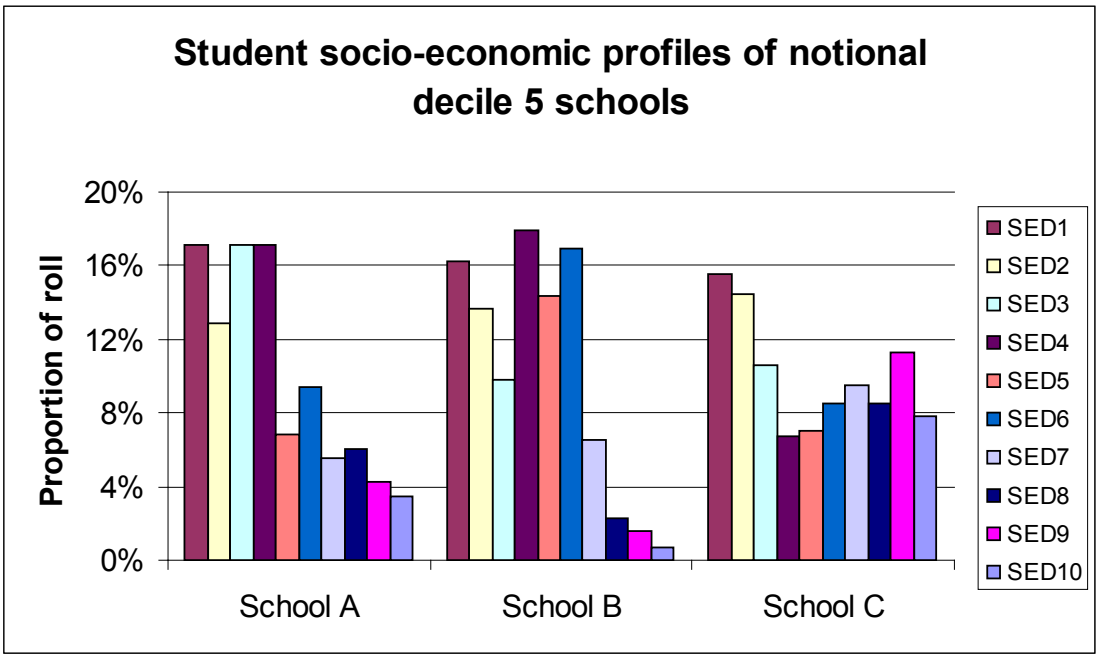

The school decile has become such a factor in the (mis)interpretation by parents of the quality or status of a school that some schools have resorted to deliberately seeking to influence their intake so that their decile is raised and the school is seen as more 'successful'.

A school's decile is also a poor measure for the abilities of schools to raise funds. Low decile schools will generally have very limited capacity to obtain additional resourcing from their community because a high proportion of their families are from low socio-economic groups and high decile schools will tend to have greater capacity to do so because most of their families are from middle to high groups, the mid-decile schools have widely varying capacity to access local funding as the proportions of middle and higher income families they serve will vary even between schools of the same decile. Indeed, the capacity to raise local funds will also vary between high decile schools.

The school's decile has immediate impact on the ability of schools to raise funds through their ability to attract international fee paying students as a school's decile is often interpreted overseas as a quality grading. (We hear of a school being asked recently why overseas parents would want to send their students to a 3 star school when they can go a 10 star school.)

While the purpose of the decile system is worthy and needs to continue, the single figure ranking system is now counter-productive to the notion that every student should be able to access high quality education at their local school.

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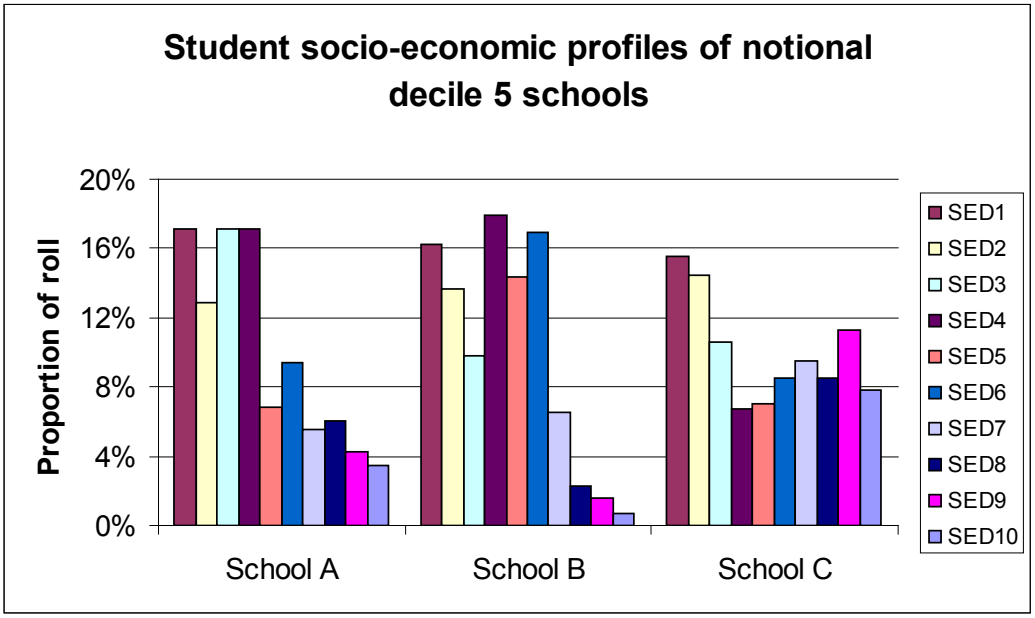
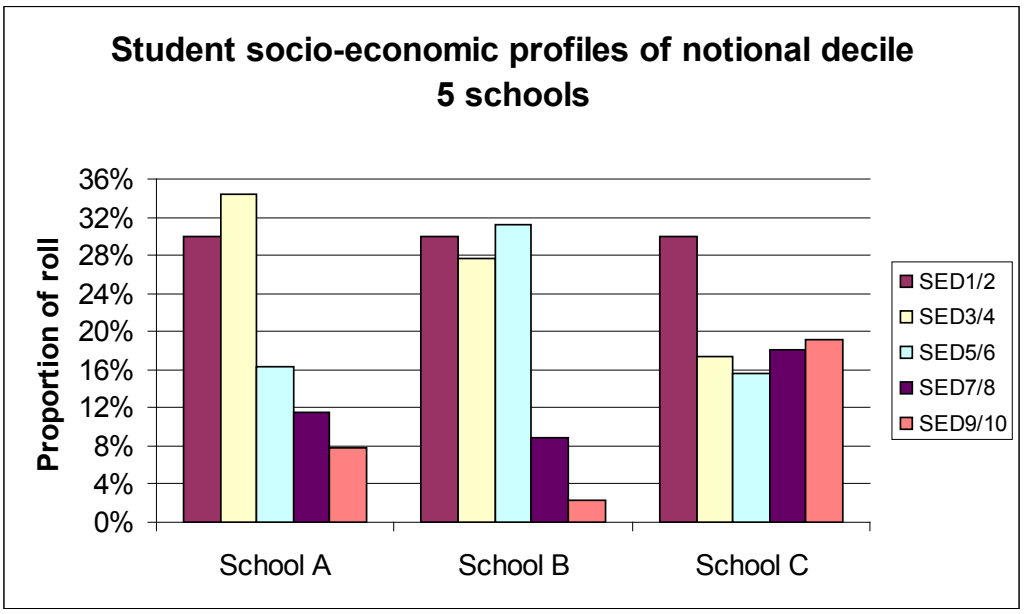
3. Proposal for a decile profile

PPTA supports the notion of the single decile figure being replaced by a socio-economic profile and each school being resourced differentially on the basis of its particular socio-economic profile. This would lead to a more rational basis for comparisons of schools, more accurately reflect the communities from which each school draws its students and avoid a blunt number proxy being applied to the complexity of schools.

Such a profile would identify the proportion of each schools roll that is drawn from each of the 10 socio-economic deciles (or from quintiles groups) using an extension of the mechanism currently employed to identify just one of them. There would not need to be a ranking of schools as the profile would carry all the information necessary for the targeting of resources for need. Schools which are currently undifferentiated would be more accurately represented.

For example, three decile five schools might be shown to have the following profiles based on decile, quintile or low-middle-high models of profiling:





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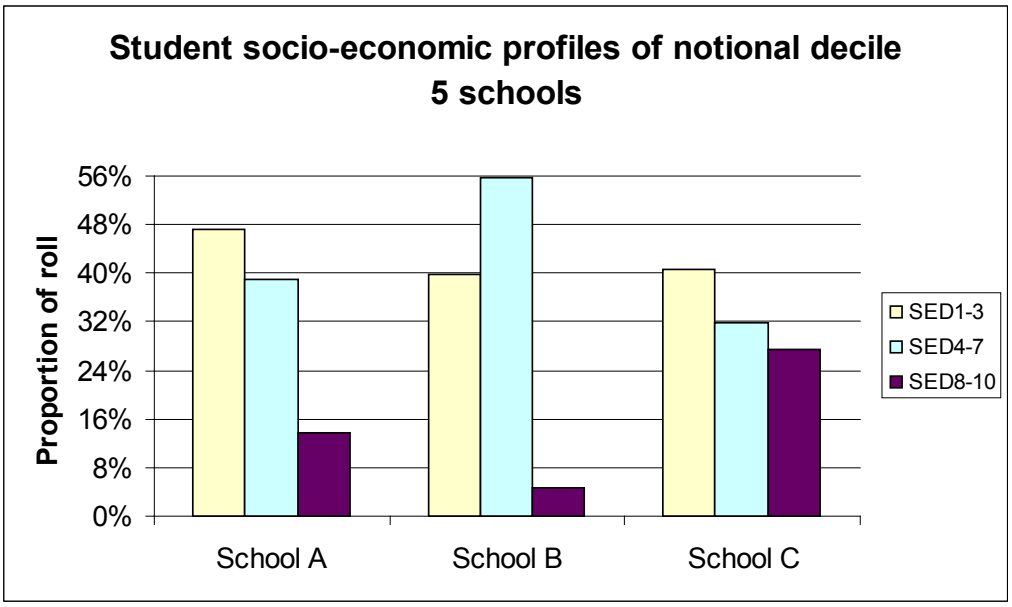

It is currently only rough equivalency in the proportion of the lowest income families that gives them all the same ranking, but quite different profiles across all students would be revealed in a more complex profile measure and resources could be more effectively targeted to student needs in each of these schools. Questions of inter-school comparisons could also be addressed with more sophistication.

Funding would be allocated according to the number of students in each decile on the school roll, with each decile attracting a different rate of funding for the students in them.

A system involving a profile, and therefore more than a single number, would also reduce the opportunity to judge school quality on the basis of a number intended only for funding purposes.

PPTA represents the professional and industrial interests some 18,000 secondary teachers in state secondary, area, manual training and intermediate schools, as well as tutors in community education institutions, alternative education and activity centres, and principals in secondary and area schools. More than 95% of eligible teachers choose to belong to the Association.

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