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# **Review of Funding Systems**

# **Background paper for Advisory Group**

**Funding to support children and young people most at risk of educational under-achievement**

10 June 2016

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Introduction

The Review of Education Funding Systems for early childhood education (ECE) services and schooling is seeking, as part of the broader Education Work Programme, to ensure funding is directed to the size of the education challenge ECE services, schools and Communities of Learning face, and towards growing the learning and achievement of all children and young people

An important part of this aim is support for children and young people most at risk of educational under-achievement.

This relates to a longstanding feature of our funding system: the provision of additional funding to ECE services and schools to enable them to overcome the barriers that can be faced by children from lower socioeconomic backgrounds.

This feature has been driven by a recognition that there is a correlation between socioeconomic background and educational outcomes. Or, in other words, as a group children and young people from lower socioeconomic backgrounds have a greater risk of educational under-achievement.

The focus of this paper is on ensuring that funding arrangements to support children and young people most at risk of educational under-achievement are fit-for-purpose. This includes making effective use of the insights and perspectives from the Government’s Social Investment approach.

To this end, the paper proposes replacing the current decile system with additional funding paid to ECE services and schools in respect of the children and young people who meet criteria associated with being most at risk of educational under-achievement.

*Interface with Special Education*

This proposal is not intended to address risks to educational under-achievement on account of special educational needs. The separate funding mechanisms in place to help services, schools and Communities of Learning respond to special educational needs are outside the scope of this particular paper.

The proposals in this paper would, however, have flow-on implications for the mechanisms to support children and young people with low or moderate special education needs (Special Education Grant and ECE Equity Funding Component B). These implications will need to be considered if the proposals are developed further.

Key concepts

This section briefly introduces a number of the key concepts covered in the paper:

* the Social Investment approach
* risk of educational under-achievement
* socioeconomic status.

*The Social Investment approach*

Social Investment is about improving the lives of New Zealanders by applying rigorous and evidence-based investment practices to social services. It means using information and technology to better understand the people who need public services and what works, and then adjusting services accordingly. The Social Investment approach involves answering two key questions:

* who do we need to get better long-term results for?
* what is the best way to get those results?

To identify who we need to get better long-term results for, we need to get better at collecting and analysing data. If we understand more about people's experiences we will be able to be more responsive to their needs. This may include a particular focus on vulnerable or high-risk groups; and investing up-front to support people most at risk of poor outcomes later on in life.

*Risk of educational under-achievement*

The term ‘risk of educational under-achievement’, as used in this paper, could mean that available information suggests that the child or young person has a strong likelihood of not meeting a particular achievement target (e.g. NCEA Level 2).

It might also mean that the child or young person has been identified as having certain contextual factors (e.g. some measure of lower socioeconomic status) that are associated with a lower distribution of achievement than the population as a whole.

*Socioeconomic status*

Only some of the variance in children and young people’s achievement can be explained by the various contextual factors in their life. Out of these factors, however, socioeconomic status is one of the most important in terms of influencing educational achievement.

Socioeconomic status is a broad concept with a number of different facets. It is not simply about how much income a household is receiving at a particular point in time.

Traditionally, socioeconomic status has most often been identified through one or a combination of the following (although other measures or proxies are sometimes used):

* parental income
* parental occupation
* parental education.

The *home learning environment* also has an important influence on educational achievement. This concept overlaps with socioeconomic status. For example, low socioeconomic status households may have fewer educational resources.

The current state

Schools currently receive additional funding through *decile-linked funding* to enable them to overcome the barriers to learning faced by children and young people from low socioeconomic communities.

An almost identical basis is used to support ECE services, although in the ECE sector the deciles are referred as an Equity Index (EQI).

A decile or EQI rating reflects the incidence in a service or school of children and young people from low socioeconomic communities, compared to other services and schools.[[1]](#footnote-1) The rating is calculated based on demographic information about the meshblocks in which an ECE service or school’s children live. Use of Census meshblocks tells us about the characteristics of the communities that children and young people live in, rather than their own actual circumstance.

The socioeconomic status of the meshblocks is estimated using five Census variables. These are the proportion of households with either preschool or school-aged children with:

* caregivers who received an income support benefit in the previous year
* caregivers in the lowest skill level occupations (e.g. labourers, machine operators, assemblers)
* households with the lowest quintile of (equivalised) household income (excluding benefit income)
* households where people aged 10+ (other than couples) share a room (defined as ‘crowded’)
* caregivers with no tertiary or school qualifications.

ECE services and schools are first ranked on each variable. Then rankings are combined, and schools or ECE services are ranked into ten equally-sized groups, from highest risk (decile 1) to least risk (decile 10). For schools there is a further division of the bottom four deciles into three funding steps labelled with letters (1A, 1B, 1C, 2D, 2E . . .).

While decile classifications are used for a variety of other purposes, the focus in this paper is on the main decile-linked funding streams for each sector: *ECE Equity Funding Component A* for ECE services ($28m in 2014/15); and the *Targeted Funding for Educational Achievement (TFEA)* and *Careers Information Grant (CIG)* for schools ($119m in 2014/15).[[2]](#footnote-2)

Equity Funding Component A only goes to decile 1 to 4 ECE services, while in the school sector decile 10 schools receive no TFEA funding (though they do receive CIG funding).

These funding streams account for a similar proportion of overall funding for ECE and schools, at about 2-3%, as shown in overleaf.

Figure 1 Distribution of ECE and school funding



The decile mechanism has some strengths. The decile calculation is objective and involves minimal discretion. It reflects the significance of the concentration of children from low socioeconomic communities in an individual service or school (cf. page 11). It also has a minimal burden in terms of data collection: the only private information required is a child’s address, which is supplied to the Ministry of Education by services and schools.

On the other hand, it involves assigning risk characteristics to the service or school rather than individual children and young people, and then paying on the basis of all enrolments. This can lead to a misconception that all children and young people in a particular service or school are subject to the same risk of educational under-achievement.

The decile mechanism also creates a single ‘number’ for ECE services and schools. This is misused as a proxy for quality, which has had a stigmatising effect on lower decile schools. It is also used incorrectly as a branding exercise for higher decile schools.[[3]](#footnote-3)

The decile mechanism can also lead to disruptive changes in funding for individual schools and services when there is a recalibration after a Census. Services and schools can find it difficult to understand why their decile has changed, because deciles are a relative measure affected by the situation of other services and schools.

A further concern relates to the use of census meshblock level information to calculate deciles. This tells us about the characteristics of the communities that children and young people live in, rather than their own actual circumstance. Analysis, both in New Zealand and overseas, indicates that a significant proportion of people get misclassified by such an approach.

*Early childhood education affordability*

Unlike schools, early childhood education services often charge compulsory fees, so affordability could be a barrier to participation, particularly for children from low-income households. These children may also be at risk of educational under-achievement.

Nevertheless, addressing barriers to affordability is a distinct objective from addressing higher needs for educational support. The latter is the focus of this paper, whereas the former primarily relies upon the Ministry of Social Development’s targeted Childcare Subsidy.

Different household characteristics are used to target assistance to address these different objectives, and appropriately so. Affordability measures tend to use household income at a particular point in time, whereas for achievement support it is better to look for factors that have a longer-term influence on achievement. There can however be some overlap between these two objectives. Some ECE services currently use part of their Equity Funding to reduce fees or other costs to parents.

International context

New Zealand’s decile system has some features in common with approaches in other countries, but also some differences. outlines key characteristics of approaches used in other countries.

Table 1: Funding approaches to address risk of educational under-achievement in other countries

|  |  |  |  |
| --- | --- | --- | --- |
| Country | Risk assigned to | Main indicators | Concentration? |
| Australia | Individual,  except for Australian Capital Territory (ACT), Queensland and South Australia where primarily school. | Parental occupation – Commonwealth, 6 states/ territories;  Parental education – Commonwealth and 5 states/ territories;  Indigeneity – all except Tasmania;  Community characteristics – Queensland, ACT;  Prior achievement – Victoria;  Refugee status – Queensland | Yes – Commonwealth, 5 states/territories;  Implicit – ACT, Queensland and South Australia;  No – Northern Territory |
| United Kingdom | Individual | Free school meals (proxy for income/ benefit status) – Pupil Premium;  Community characteristics (poverty); prior attainment; children in care; student mobility | No |
| United States | Individual – 31 states;  District – federal, 10 states;  No funding – 9 states | School meal entitlement (proxy for income/benefit status) – 30 states;  Income/poverty – federal, 9 states;  Other govt programmes – 6 states;  Prior achievement – 4 states;  Transience – 4 states | Yes – federal, 18 states;  No – 23 states |
| Netherlands | Individual – primary schools, learning support (secondary);  School – learning-plus (secondary) | Parental occupation – primary;  Community characteristics (low incomes high unemployment,) – learning-plus;  Prior achievement, IQ test – learning support | Yes – primary;  Implicit – learning-plus;  No – learning support |
| France | School | Parental occupation, prior achievement | Implicit |
| Ireland | School | Unemployment, family characteristics, travellers, free book grants Income/benefit dependence, social housing – primary;  Prior achievement; medical card (proxy for low income) – secondary | Implicit via high thresholds for eligibility |
| Israel | School (primary only) | Parental education; parental income; immigrants; remoteness | Implicit |

*Notes:*

This table does not include funding allocated for special needs or speakers of other languages.

Many countries do not provide formula funding in relation to risk of educational under-achievement – this includes Denmark, Finland, Greece, Italy, Norway, Portugal, Sweden and Turkey.

Overview of proposal for change

The proposed direction for change is a funding model that includes *additional funding in respect of children and young people who meet the criteria associated with being most at risk of educational under-achievement*.

This is intended to sharpen the focus of services, schools and Communities of Learning on children and young people most at risk of educational under-achievement and strengthen the link between funding and the size of the education challenge. It would replace TFEA, CIG and ECE Equity Funding Component A.

The proposed change involves a fundamental shift to treat the children and young people within an ECE service or school as diverse, rather than uniform. Rather than children and young people’s risk characteristics being aggregated to classify the service or school, their characteristics would generate the additional funding directly.

This does not mean that the additional funding would become a voucher for the benefit of a particular child or young person. It is still a way of generating additional resources for a school or ECE service for them to meet the educational achievement challenges that they face in general.

Nevertheless, there would no longer be an aggregate classification for each service or school, and the additional funding amount would be paid only in respect of children or young people who meet the criteria for being most at risk of educational under-achievement. This distinction is illustrated in the simplified scenario in .

Table 2: Simplified scenario showing the difference between ‘aggregated’ and more 'individual-based' approaches

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Example of an 'aggregated' approach** | | | | |
| Number of children | Number of children at risk 🡺 | Incidence of risk 🡺 | Rate of payment  (a, b, c, d etc . . . ) | Assistance provided |
| 10 | 6 | 6 / 10 | *c* | 10 x *c* |
| **Example of a pure 'individual-based' approach** | | | | |
| Number of children | Number of children at risk 🡺 |  | Standard rate of payment (y) | Assistance provided |
| 10 | 6 |  | *y* | 6 x *y* |

The change recognises that there are both higher-risk and lower-risk children and young people in just about every service and school. In fact, we know from the Programme for International Student Assessment (PISA) that there is actually more of a spread in achievement levels within our schools than there is between them; indeed, this is more the case for New Zealand than it is for other countries.

In addition, by no longer classifying services and schools into deciles and by highlighting the spread of children and young people with higher and lower risk throughout the system, we could start to move away from the undesirable stigmatising effect that the current system has for some schools.

*Question for discussion*

*In principle, should funding be based on the number of at-risk children and young people enrolled, rather than on a service or school’s aggregated risk rating?*

Reporting and accountability

The effectiveness of this policy is likely to depend less upon exactly how much of the funding each ECE service or school receives, and more on how effectively the funding is used and how it contributes to a focus on supporting the achievement of these children and young people.

This suggests a need for there to be clear accountabilities associated with the proposed additional funding. There are differing ways to accomplish this.

We propose to focus on how ECE services, schools and Communities of Learning are using *all* of their resources and adapting practice to meet the needs of all children and young people, and in particular thosemostat risk of educational under-achievement, and what difference this is making to outcomes for this group.

This is likely to be more important than precisely how ECE services and schools spend the portion of additional funding that they receive. It is also proposed that there would be no additional restrictions on how this funding could be used.

It is not proposed that a service or school would have its additional funding amount reduced if outcomes for at risk children and young people do not meet expectations. That could create a vicious circle where the service or school has reduced funding and finds it even harder to succeed.

This does not mean that there should be no consequences. If a service, school or Community of Learning is not delivering for this crucial population, this may suggest a need to intervene. This could be support or guidance, but in more serious and ongoing cases there could be governance or licensing interventions.

*Questions for discussion*

*Should accountability focus on use of the additional funding, or on what is being done to make progress for children and young people who meet the criteria for being most at risk of educational under-achievement?*

*Should restrictions be placed on how the additional funding can be used?*

Indicators of educational risk

The design of the additional funding requires indicators of risk of educational under-achievement that are effective at targeting the population we want to address; are feasible to collect and use; and are suitable for the purpose of a funding system.

Some initial criteria that might considered when designing an indicator set for a funding system are:

* *comprehensiveness* - the set of indicators would lead to appropriate relativities in additional support provided across the 0-18 age range and across different types of services and schools
* *permitted* - the rules governing each data source allow it to be used for funding purposes
* *generates precise numbers* for funding purposes (or can be converted into precise numbers)
* *timely* - able to be replicated on a regular basis without problematic time-lags
* *defensible*, both ethically and in relation to possible concerns from the general public
* *cannot be manipulated -* a school or service cannot influence its funding through its decisions with regard to the child or young person (except where this reflects an intended incentive towards a desired behaviour).

*How the indicators are used to define risk*

There are choices around how the indicators should be combined together to assess risk. For example, a child or young person might generate an additional funding amount if they meet the chosen threshold on at least one indicator or a specified number of indicators (for example, at least two out of four of the indicators).

Another approach would be to combine the indicators using weightings to develop a risk index for each individual. Those children and young people with a risk score above a particular index value would generate the additional funding amount.

A variant on this approach would be to use the index values to differentiate between levels of risk, with the funding amount varying accordingly. For instance, there could be a distinction between ‘moderate’ risk and ‘high’ risk, with the latter group generating a higher funding rate. The gradations in funding could be even more fine-grained based on a child or young person’s risk score.

A related question is how broad a population would be intended to generate the additional funding. This coverage rate will tend to be a function of the indicators chosen, any thresholds determined for those indicators, and the way the indicators are combined together to assess risk.

There may, however, be some value in having a view on preferred breadth of coverage prior to deliberating on these design choices.

For instance, both in New Zealand and internationally, a distinction can be made between around 20-30% of children and young people whose socioeconomic status may mean that their achievement levels tend to be lower, and around 5-10% with multiple risk factors and who experience significant dysfunction in their home environment.

There are trade-offs here. The narrower approach would cover fewer children and young people, with a greater intensity of need, and a higher rate of funding each.

Also, smaller numbers of eligible children and young people would tend to mean the amount received by a service or school would be more volatile from year to year.

*Questions for discussion*

*How should the indicators be combined? Should there be differing rates of additional funding for different levels of risk?*

*For the additional funding to support those most at risk of educational under-achievement, what sort of proportion of the population should be covered?*

*Selecting which indicators to use*

, overleaf, presents a number of possible indicators that could be used to identify risk of educational under-achievement.

The first four indicators listed were used in research to inform the Government’s Social Investment approach. Using information already collected by government, they were found to be associated with children and young people having a range of poor outcomes later in life.[[4]](#footnote-4)

A range of other indicators that could be used as well as (or instead of), this set of four, is also outlined in .

The number of indicators that are used may be influenced by judgments about how the indicators are to be combined together to assess risk (as discussed in the previous subsection.)

*Question for discussion*

*Should we use the four Social Investment indicators – parental benefit dependence; CYF finding of abuse or neglect; parental Corrections history, parental education – or do you prefer other indicators, as well or instead?*

Table 3: Possible indicators of risk of educational under-achievement

|  |  |  |  |
| --- | --- | --- | --- |
| Possible Indictor | Possible source | Advantages | Issues and Risks |
| **Parental benefit dependence** (as a proportion of child or young person’s life) | Approved information sharing agreement (AISA) with Ministry of Social Development | Used in Social Investment analysis; accounts for a relatively large group of non-achievers | If set of indicators exclusively rely on measures that use administrative data, could skew the at-risk population too much towards families receiving government interventions or support |
| **Child Youth and Family (CYF) finding of abuse or neglect** | AISA with Ministry of Social Development | Used in Social Investment analysis; aligns with CYF transformation work | As with benefit dependence above |
| **Parental Corrections history** | AISA with Department of Corrections | Used in Social Investment analysis | As with benefit dependence above |
| **Parental education** | Direct collection via ECE services and schools | Established measure of SES; used in Australia; used in Social Investment analysis | Some indications that impact on under-achievement may not be as strong as other Social Investment indicators above; likely to require direct collection |
| Parental Income | Direct collection? AISA with IRD? | Most obvious and intuitive measure of SES | Sensitivities about collection; accuracy of income data; fluctuation of income |
| Parental occupation | Direct collection | Established measure of SES; used in Australia | May be difficult to categorise responses |
| ‘Vulnerable children’ | AISA with MSD? | Aligns with CYF transformation work | Sensitivities regarding ‘risk of future harm’ at individual level |
| Prior achievement | Individual National Standard results | Prior achievement is known to be the strongest predictor of future achievement | Comparability of National Standards data; individual data not collected centrally.  Could ‘penalise’ schools with better National Standard results, unless only used at primary-secondary transition |
| Neighbourhood characteristics | Child’s address and Census meshblocks | Easy to collect; currently in use (NZDep, deciles) | Would mischaracterise some households who differ from their neighbours |
| Community Services Card | Direct collection or AISA with Health | Leverages existing measure of income | Eligibility thresholds not customised for education; some eligible may not take up |
| Transience | Existing data on number of schools/ services attended | Strong association with under-achievement | Small group (who also have other risk factors). Resolving cause of transience may be more effective than funding. |
| Truancy/ irregular attendance;  also stand-downs/ suspensions/ expulsions | Existing data held by schools and services | May broaden coverage by picking up risks not detected via SES factors | Could ‘penalise’ schools and services with most effective practice, unless only used at transition points. Possibly more useful for identifying high-risk students to be supported in alternative education. |
| Mother is a sole parent | Direct collection? | Covers a third of NZ low-achievers (PISA data) | May be controversial; arguably parental benefit dependence is a good proxy |
| First child born in mother’s teens | Direct collection? Birth records (DIA)? | Likely to be at high-risk of under-achievement | Small group (who also have other risk factors) |
| Abnormal conduct reported at B4 School Checks | AISA with Ministry of Health | May broaden coverage by picking up risks not detected via SES factors | B4 School Checks have not been in place long enough to tell whether these findings are predictive of NCEA outcomes |

*Data Sources*

There are two main mechanisms that could be used to collect data not already held by the education system: existing administrative data and collecting information directly from families.

Accessing administrative data for funding (rather than research purposes) would require approved information sharing agreements (AISAs) with the appropriate government agencies, and processes to manage privacy of information.

Work to date on the extent that information matching processes are able to identify all children who meet the eligibility criteria indicates that this process is imperfect. Nonetheless, it allows for better precision than Census meshblocks.

Direct collection of information by ECE services and schools via enrolment forms would involve some additional work for services and schools, and it would be important to build community acceptance of the need to gather it.

There is a case that without a more traditional measure of socioeconomic status, which would be likely to require direct collection, the at risk population would be too skewed towards families receiving government interventions or support.

Direct collection also involves risks in terms of the accuracy of the information collected, and may need to be supported by some form of auditing of information. Some Australian states directly collect information on parental educational qualifications and occupation for funding purposes. Where direct collection is used, countries generally restrict the number of indicators for which information is collected, as is the case in Australia.

*Question for discussion*

*Do you have a view about which means of collecting data are more or less desirable? In particular, what is your view of directly collecting additional information via enrolment forms?*

Frequency of adjustment

An issue that will need to be addressed in the detailed design is the frequency of changes in funding, particularly as children shift between schools. There are likely to be practical limitations on the speed of adjustment depending on the indicators chosen and how data is collected.

There will also be judgments to be made about balancing stability of funding with incentives to be responsive, and balancing the interests of the service or school from which a child or young person is departing with those of the service or school receiving that child or young person.

It is worth noting that, for both ECE and schooling, the larger non-targeted portion of funding fluctuates with enrolments in any case. ECE services are, however, much more subject to funding fluctuations within a year than schools, and it may also be appropriate to have differing approaches to the frequency of adjustment of the at risk funding.

*Question for discussion*

*How quickly should the additional funding be adjusted when an at-risk child or young person changes their place of enrolment? And how much should an at-risk status fluctuate over time?*

Weighting for concentration of risk

It is proposed that the additional funding should provide some weighting for the concentration within an individual service or school of children and young people who meet the at risk criteria. International evidence suggests that the socioeconomic status of a child or young person’s peer environment has an influence on their achievement, independent of their own socioeconomic status. This is likely to be a mix of school/service effects and peer effects.

It is also likely that the cost of delivering education rises disproportionately with a rising share of enrolments of children and young people at risk of educational under-achievement. So there is arguably a cost element to concentration that is not fully covered by simple per-enrolment additional funding.

The current decile funding arrangements contain an implicit loading for concentration. As illustrates, for both the ECE and schooling sectors there is a steep curve to the funding steps for lower deciles. The funding rates increase more steeply between deciles than the increase in the average proportion of at risk children and young children in a service or school.

Figure 2: Slope of Funding by Decile Band/ Equity Index, for Targeted Funding for Educational Achievement (schools) and Equity Funding Component A (ECE)

A key issue that needs to be addressed is at what level concentration begins to materially impact on achievement and costs, and how these impacts increase as the level of concentration increases.

*Question for discussion*

*Should the additional funding be based on the number of children and young people who meet the criteria for being most at risk of educational under-achievement on a ‘one-for-one’ basis, or should ECE services and schools with larger proportions of at-risk enrolments receive an additional loading for ‘concentration’?*

A related consideration is whether there should be any cut-off point excluding services and school with small numbers of at risk enrolments. The current decile system has an implicit cut-off as not all deciles receive the additional funding. This is especially the case for ECE where only services with relatively large concentrations of risk (the first four Equity Index deciles) receive any funding.

Scale of additional funding

At present, funding to support ECE services and schools to address the needs of children and young people at risk of educational under-achievement makes up only about 2-3% of overall funding. The replacement additional funding could either be kept at this scale, or expanded by reallocating funding from other elements of the ECE subsidies and school funding.

There has been little substantive improvement in the equity of educational outcomes in New Zealand over recent decades. Although the decile system has some weaknesses (as discussed on page 4), this lack of improvement may also reflect the balance between ‘general’ and ‘targeted’ funding. If so, there may be merit in adjusting this balance to ‘lean’ the focus more towards addressing risks of educational under-achievement.

The extent to which we shift the funding systems to ‘lean’ more towards addressing risks of educational under-achievement would also have implications for the distributional impact of the proposed changes, in the case of both ECE and schooling.

In general terms, if the current level funding were allocated using an individual-based approach this is likely to lead to a shift in funding from low to mid-high decile services and schools, even if there is a concentration loading. This is because the funding would be spread more thinly, especially in ECE, as some services and schools currently receive no additional funding to meet the needs of students from low socioeconomic communities.

If we were to increase the share of total funding allocated through the additional funding in respect of children who meet the criteria for being most at risk of educational under-achievement, the shift in funding from low to mid-high decile services and schools would be substantially mitigated.

*Question for discussion*

*Should we ‘lean’ the focus of the sectors more towards addressing risks of educational under-achievement, by reallocating some of the current ‘general’ funding to ECE services and schools to expand the new additional funding?*

1. The term ‘decile’ is used for convenience in the rest of this paper to refer to EQI for the ECE sector as well as to school deciles. [↑](#footnote-ref-1)
2. Decile is also used as a proxy for the incidence of low-to-moderate special education needs for Equity Funding Component B for ECE services and the Special Education Grant for schools. As noted on page 1, if the proposals in this paper are developed further, the flow-on implications for these mechanisms would need to be considered. [↑](#footnote-ref-2)
3. While there is a statistical association between the decile rating and standardised measures of achievement, it is an average association rather than a rule. Within each decile there is a wide range of achievement. In any case, this association primarily reflects socioeconomic obstacles to achievement rather than teaching quality. [↑](#footnote-ref-3)
4. *Ibid*., and Treasury, *Social Investment Insights*, [www.treasury.govt.nz/sii](http://www.treasury.govt.nz/sii). [↑](#footnote-ref-4)