

## **NZCER background paper on national standards for literacy and numeracy**

We strongly believe all children need a firm basis in reading, writing, and maths. Research, including NZCER's own longitudinal Competent Children/Competent Learners study, shows that it is important to have a solid platform of knowledge and skills in literacy and numeracy by the age of eight. It is difficult and expensive to create this platform after that age.

The question is how we go about improving literacy and numeracy levels for all children. The incoming National Government has said it will establish national standards in reading, writing, and maths in primary schools. Standards would describe the particular things children should be able to do at a certain year or age, and would be defined by benchmarks in a range of tests. It has said that schools will be required to compare the progress of their students with students across the country, but there won't be national testing.

At the moment, schools are required to gather evidence about student achievement, identify areas for improvement, set goals for improvement, plan programmes to achieve this, and report on progress. In the absence of nationally-prescribed tests, individual schools decide on their targets, and on the instruments by which they will be measured. They use a range of assessment tools—NZCER's research in 2006 showed two-thirds of primary schools use either the two main nationally-normed tests, AsTTLe or Progressive Achievement Tests (PATs), or both, and the figure will be higher now. These and other nationally-normed assessment tools enable teachers to identify what students can do, and also to pinpoint specific areas of need. The information from this kind of assessment is used both for school targets and reporting, and in a formative way, which means teachers use the data to help inform the next steps in their teaching.

We know that more schools are using this kind of assessment, and they are getting better at analysing and acting on the data. Many schools are reporting useful information from the tests back to parents, and we think much more could be done to work with families.

The PATs were developed by NZCER in the 1970s. In the past four years we have invested in a complete revision of the PAT maths and reading tests. We have done this because we think well-designed tests that provide national benchmarks have a useful role to play in helping teachers identify student learning needs, set learning goals (at individual, class, and school level), and point to the "next steps". We are encouraged by the uses that teachers tell us they are already making of our tests to improve student learning.

Research tells us that important aspects of student learning and performance throughout their schooling are motivation and engagement. These attributes need to be nurtured. Motivation and engagement are sustained when students make learning gains, and through teaching that makes connections to things that are relevant to students, and encourages the development of the key competencies emphasised in *The New Zealand Curriculum*, such as thinking skills, learning to work with others, and self-managing skills.

If national standards in particular subjects were to be introduced in a way that gave children an early sense of failure, then the risk is they lose motivation and give up. Or they achieve the benchmarks but learning ceases to be fun anymore, and eventually motivation ebbs away. So the impact of tests on motivation and engagement is an important factor to consider.

The research on improving student learning shows that test-use or setting nationally-prescribed standards or targets is not enough to bring about continued change in student performance levels and teaching practice. We know from overseas experience that schools need to build their capability, at the leadership and the teacher level, to understand the assessment results and to make good judgements about what will work best for the students. They need good subject knowledge, so if there is a problem with a particular aspect of numeracy, for example, they can pinpoint it and address it. And they need the ability to think of different ways of presenting material so that it holds the attention of students and connects with the world they know.

We have made great progress with this kind of capability building in New Zealand schools. There is a real momentum and a lot of excitement, as principals and teachers get a buzz out of seeing gains in literacy and numeracy. It is hard work but it is urgent the work continues and that schools not be diverted. We think there is a real risk of the momentum stalling if a system of national standards is imposed that schools perceive to be unhelpful, invalid, or unfair.

We have developed a set of principles we think are key to any discussion about national standards. They are set out below. We then look at how a system of national standards could be developed, how it has worked overseas, and whether it could align with these principles.

Our principles.

- The way in which national standards in literacy and numeracy are developed and used must make a substantial contribution to:
  1. equity—ensure that one group of students or schools does not lose out, e.g., through over-focus on students close to achieving the standards at the cost of very low or high achievers, or labelling schools as “failures” and making it hard for them to recover or improve
  2. engagement of parents in learning
  3. support for life-long learning, and 21st-century attitudes and skills
  4. retention and recruitment of good educators

5. support the maintenance and further development of good teaching practice and “learning organisation” school cultures (best business practice).

National standards need to be:

- valid, reliable, and evidence-based
- cost-effective, so the gains of using them are gains commensurate with their cost following a thorough cost-benefit analysis
- aligned with the New Zealand school self-management model.

## Setting the standards

How could national standards be established in reading, writing, and maths? The answer is fairly easily. New Zealand already has well-developed, norm-referenced tests in literacy and numeracy that teachers are familiar with and that could be used to set benchmarks of achievement at different year levels. This would avoid the expense of developing a new test and the complexity of overlaying yet another test on top of what already exists.

However, beyond that there are a myriad of difficult policy decisions that would have to be made. It would be a difficult task to establish where to set the benchmark, particularly if you are trying to get consistency between different tests. Then there is the question of whether the national standard is set at a minimum level all students would need to reach each year, or describes an expected range of performance.

If it is a minimum set quite low, most students will reach it and it becomes meaningless. Set too high and many fail. If the national standard results are used to rank schools or used as the only source to classify schools in terms of effectiveness, failure carries a high cost for schools. What would the consequence be of setting the standard at a level where large numbers of students and therefore schools were seen as failures?

No test is a precise measure. Depending on the test, there may not be much difference between a 65 percent and a 75 percent grade, yet if your cut-off point is 70 percent, the consequences can be out of proportion. We know from our longitudinal Competent Children/Competent Learners study that students who would have been below a cut-off point have gone on to make as much progress as others who scored above it. You cannot draw an arbitrary line—say 60 percent—and say the group above have reached the level they need to for further learning, and the ones below have not.

All tests have a margin of error and are only a snapshot of how students perform on a limited slice of curriculum on any one day. They are a useful guide for teachers but that is a different thing from saying they can be used to absolutely pinpoint whether a child is failing. If that becomes its purpose, we are likely to see the same tendency here as experienced overseas: a tendency for schools to focus more on the students close to the cut-off—known as the bubble students—at the expense of others who are either way below the standard or well above it.

If national standards take the form of an expected range rather than an arbitrary figure, schools have to report on what is happening for *all* students. Principals would be looking to improve their whole achievement distribution over a two- to three-year period, rather than putting all the effort into students hovering around the cut-off point.

### Making the standard meaningful

It is a principle of the American Educational Research Association (AERA) that no high-stakes decisions should be made on the basis of one test. One test doesn't provide enough evidence to make a sound judgement. In allowing schools to make use of different tests, the potential is there to support the kind of rich data gathering and interpretation that many schools are already doing. No test can measure everything but each can highlight a slightly different aspect of achievement. The model we would recommend, based on an idea advanced by Professor Terry Crooks, would see teachers using their practice-based experience and their knowledge of the individual child, as well as the results of whatever tests they choose to use, to say where the child sits in relation to the benchmark. Schools would then use a school-wide moderation process to test the validity of those judgements, as many schools are already doing. The Education Review Office (ERO) would have a role, too, in ensuring that schools were making robust decisions based on the test results and on their moderation.

### What parents want

Parents want to know how their children are progressing—and for some that may include a desire to know how they compare with others of their age at their school, or nationally. But getting real engagement from parents in their child's learning requires more than just giving them a mark. They need to know strengths and weaknesses, areas to work on, and how to work on them. Having a national standard—and knowing if your child has passed or failed—does not guarantee parents get better, more useful information. What may make a difference are longer parent-teacher and child sessions, at which progress and goals are discussed, as well as the respective contributions of home and school to achieving that. The assessment tools that most schools already use can provide useful data to share with parents but they do need explaining—a grade is not enough.

Under the model proposed above, one approach might be to include in the feedback to parents a described progression scale with their child located on it. The location would be based on test results and other relevant assessment, for example a portfolio of work.

### Fairness across the system

Schools need to be accountable. However, research shows there are difficulties and potential for unfairness if school effectiveness is judged from student achievement levels alone.

The main predictor of student achievement in tests is prior performance, so a school with an intake of mainly high-ability students is bound to achieve better results than one with an intake skewed towards the lower end of the ability scale. Other factors, such as socioeconomic context, are also influential in determining outcomes. Sophisticated “value-added” analysis is required to take account of these factors, but even that remains problematic.

Because they depend to a large extent on what a particular intake brings to the school, raw test results can vary from year to year. This is particularly true of small schools, of which we have a high number in New Zealand. With a small number of students in each year level, the presence of a few exceptionally high-ability students could have a significant impact on outcomes. It could have the effect of creating a high degree of volatility in a school’s test results, but it does not tell us much about the effectiveness or otherwise of the school.

It is also important to remember that New Zealand has a system of school self-management. Any introduction of national standards needs to be done in a way that respects and supports the way New Zealand schools operate. Schools and teachers want to make a difference to student achievement levels. But telling them they have to do things a certain way could have a deadening effect on the innovation and energy that exist in our schools. It has been suggested schools would have the choice over which tests they used but that is little comfort if all other aspects are removed from their control. Schools will want to be assured that any testing and reporting regime is being put in place for sound educational purposes, and that schools where students perform at a lower than expected level will receive support rather than be “shamed and blamed”.

### What about the curriculum?

New Zealand is admired by other countries for the way we approach curriculum and assessment. We have developed a curriculum that looks at teaching and learning through a 21st-century lens, with its emphasis not just on subject knowledge but also on things like engagement and motivation. We need to make sure we don’t go backwards if national standards are introduced.

Why might that happen? Paper and pencil tests are simply not suitable for covering some aspects of curriculum. That, and necessary time constraints, means while they are useful, tests can only ever measure a slice of the curriculum. In fact the standardised tests we have can only measure a slice of what is going on for a learner in literacy and numeracy, let alone reflect the richness of the curriculum: the knowledge, skills, and attributes that we want for our learners.

In other countries where national standards are in place, schools have been criticised for focusing too much attention on techniques for passing exams rather than on developing students’ wider skills and knowledge. The practice is known as “teaching to the test”. A report this year by a select committee of the House of Commons in the UK called for a review of their system of national tests, describing teaching to the test as widespread. It commented:

We have no doubt that teachers generally have the very best intentions in terms of providing the best education they can for their pupils. However, the way that many teachers have responded to

the Government's approach to accountability has meant that test results are pursued at the expense of a rounded education for children. We believe that teaching to the test and this inappropriate focus on test results may leave young people unprepared for higher education and employment.

Of course, focusing on a narrow slice of curriculum in a repetitive way means teachers are likely to see a boost in performance in that narrow area. Students can be put on a treadmill of rote learning, backed up by worksheets, and there is likely to be a result. However, the overseas experience suggests improvements quickly plateau, and it is not clear that overall standards are improved or sustained. Nor is it clear what effect such an approach has on student motivation, and the development of a positive attitude toward learning throughout life.

### Is it a good use of the education dollar?

It would be costly in terms of time and money to set, introduce, report on, and analyse national standards, so that cost needs to be outweighed by the benefits to students and society as a whole. A very convincing case needs to be made for the merits of national standards. This is particularly true in education, when there are so many competing demands.

As has been stated, schools are already required to gather assessment data, to set goals, and put in place a strategy for meeting them. They are required to report on this to their boards of trustees. They are building their capability in assessment reporting and analysis, and are being supported in resources and professional development. The approach to date has been one of support, of monitoring progress and encouraging change, rather than the waving of a big stick. Some schools are not far enough down the track, and many more schools need to get better at sharing with parents what they are doing. But there is plenty of evidence of willingness and commitment from schools to make better use of achievement data to inform their teaching.

How would national standards change that picture? It would presumably give some schools a hurry up and that might be a good thing. For those that are already making good use of assessment tools, it may mean little change apart from the way they report their results. Implementing national standards without regard to existing good practice risks losing the goodwill of those who feel they have already made great strides in intelligent use of achievement data.

If the national standards were to be meaningful in terms of boosting learning, they would need to be accompanied by substantial professional development and resources, such as exemplars and stories of how other schools are making use of the data. This kind of infrastructure investment could pay dividends in consolidating the expertise schools are already building up in this area. It may be that schools would need access to a greater degree of data analysis support from outside, in order to free them up to focus on the consequences for teaching and learning. At the moment, some schools struggle to properly analyse the data they already collect, let alone use it to change the way they teach. It may be that the development already underway could be usefully boosted without the introduction of the additional layer of national standards.

Certainly, national standards would not add up in a cost-benefit analysis if the result was that some schools were seen as failures and were allowed to sink. What has happened overseas is that schools in low socioeconomic areas that have been perceived as failing their students are closed by government decree, or it becomes harder and harder for them to attract students, and they eventually close. That is a very costly consequence. So the other side of the equation is that if national standards highlight schools in need of considerable help to raise the achievement levels of the students, that help needs to be forthcoming.

That is why it is so important to have the right systems and incentives in place. It needs to be done in a way that gives schools the tools and support to make changes and check progress—change tack if necessary—over two to three years. Principals would work with their staff on a carefully designed strategic plan based on evidence and thoughtful choices, and which took into account measures other than just the test results, such as school culture.

That is different from a system that publicly declares a school a failure and applies heavy pressure on the principal and teachers for a quick turnaround, regardless of the circumstances of the school. Such pressure results in the loss of too many good educators.

## Conclusion

We think that in our desire to improve student learning achievement, we should not just pin our hopes on nationally-prescribed standards. Their contribution is likely to be modest. Their contribution would indeed be negative if we do not learn from overseas experiences. There is a potential here to build a better, more evidence-based approach. That would include, for example:

- setting evidence-based standards that are a range rather than a single benchmark
- letting schools use the nationally-normed assessment tools they have found most useful already, so that test taking does not usurp the whole curriculum, and undermine student interest
- enabling teachers to make a judgement about a student's performance in relation to agreed standards by using evidence from a range of assessment events, including the results from standardised tests
- not using school performance on nationally-prescribed standards to label schools in unfair and statistically unsound ways that make it difficult for them to recover.

Introducing national standards carries risks, as this paper makes clear. Any system that is put in place needs to be subject to ongoing monitoring and evaluation.

We believe that nationally-prescribed standards should not come at the cost of building on the gains that have been made. All schools should be encouraged to make sound use of the excellent assessment tools that are available, in order to inform their teaching. With support, all schools

should also be able to report in a meaningful way to parents on their child's performance in literacy, numeracy, and all aspects of the curriculum.

As well, principals should be able to analyse assessment data to understand achievement patterns across the whole school and to make strategic decisions about the teaching and learning focus needed at each level. This should be contained in the school's annual report and used as a basis for discussion with the school's board of trustees and the Ministry of Education on progress, and information for parents, not just on literacy and numeracy but on the wider goals of the school.

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