Chapter 6

Education system evaluation

New Zealand has clear strategic objectives for education system performance, coupled with comprehensive frameworks for reporting on progress and performance. The principle of evidence-based policy making is well established in the education sector. Information about education system performance is collected through a range of tools including school roll returns and thematic reviews on particular schooling issues and priorities. The Education Review Office (ERO) publishes Education Evaluation Reports on national education issues that inform both policy and practice. Information on student learning outcomes in all curriculum areas is collected from the National Education Monitoring Project in primary education and from assessment for qualifications in secondary education. Training for assessors and a range of moderation mechanisms are in place to ensure the results are nationally consistent. The richness of data available in New Zealand is commendable even though some gaps remain in key measurement areas such as students' and teachers' linguistic backgrounds and national monitoring in Māori-medium education. The use of school reporting information could be further enhanced, and the introduction of National Standards raises additional questions about how this new reporting information will feed into system-level evaluation.

This chapter looks at system evaluation within the New Zealand evaluation and assessment framework. System evaluation refers to approaches to monitor and evaluate the performance of the education system as a whole. The main aims of system evaluation are to provide accountability information to the public and to improve educational processes and outcomes.

Context and features

Responsibility for national monitoring and reporting

The Ministry of Education (MoE) and the Education Review Office (ERO) share responsibility for monitoring the performance of the New Zealand education system.

The Ministry is responsible for overall monitoring of the education system. This involves the collection of annual statistical data from schools, statistical analysis, data management and the development of education indicators and monitoring. The Ministry also evaluates and monitors the impact of education policy, either through its Regional Offices or contracts for services. The Ministry's role further includes building capacity for system evaluation, *i.e.* developing the capacity of different actors within the system to improve evaluation. As part of this role, it monitors the performance of the education Crown entities including the New Zealand Qualifications Authority (NZQA), the New Zealand Teachers Council and Career Services.

The Ministry of Education is accountable to the Parliament. In addition, the Ministry's performance improvement actions are also monitored by the Treasury. The Treasury provides advice to the Ministry in ensuring value for money and providing better public services at lower cost. The State Services Commission (SSC) also plays an ongoing role in terms of advising policy for, and direction of, the state sector. SSC is responsible for the appointment and performance management of the Chief Executives of Government Departments and it has an evaluative role through ongoing contact with managers and chief executives in state agencies.

ERO is an independent evaluation agency. It holds responsibility for evaluating and reporting on the quality of education provided in early childhood services, *kura* and schools. ERO also reviews the implementation of national education policy and provides independent advice to the government on national education issues. The Education Act gives ERO's Chief Review Officer the right to initiate reviews, investigate, report and publish findings on the provision of education in New Zealand.

Major tools to measure performance of the education system

Participation in international student assessments

New Zealand has a well-established tradition of participating in international assessment studies that measure student achievement. Information on student reading literacy is collected for students in Year 4 (through the International Association for Educational Achievement [IEA]'s Progress in International Reading Literacy Study [PIRLS]) and for 15-year-olds (via the OECD's Programme for International Student Assessment [PISA]). Information on students' mathematics and science literacy is collected for students in Years 4 and 8 (via the IEA's Trends in International Mathematics and

Science Study [TIMSS]) and for 15-year-olds (via the OECD's PISA). New Zealand also participates in the IEA's International Civic and Citizenship Study (ICCS) which assesses students in Year 8. Participation in such assessments provides benchmark information on the education system's performance and also allows monitoring of progress over time, for example via the trend data available for TIMSS from 1995 and PISA from 2000.

National assessments

The National Education Monitoring Project (NEMP)

In primary schools, progress towards the achievement of national curriculum goals has been measured via the National Education Monitoring Project (NEMP) since 1995[1]. NEMP is funded by the Ministry of Education and organised by the University of Otago. One of the strengths of this monitoring survey is its clarity of purpose: NEMP intends to provide a national picture of student learning outcomes at key stages (Years 4 and 8) rather than to report on individual students, teachers or schools. NEMP covers all curriculum areas in a four-year cycle (more on this below). About 3 000 students from 260 schools are selected randomly each year to take part in the assessments. The participation of selected schools is voluntary, but 98% do participate. According to the NEMP website, the purpose of the NEMP assessments is to identify and report trends in educational performance, to provide information for policy makers, curriculum specialists and educators for planning purposes and to inform the general public on trends in educational achievement. The approach to national monitoring is currently being redeveloped to take account of changes such as the introduction of the national curriculum and National Standards.

Student achievement information collected from national qualifications

Learning outcomes of the secondary education system are assessed and monitored through national qualifications by NZQA. The main national qualification in secondary education is the National Certificate of Educational Achievement (NCEA). Student achievement information from the NCEA is collected nationally to analyse patterns of performance and inform policy development. Students generally enter for NCEA in Years 11, 12 and 13, which typically correspond to NCEA Levels 1, 2 and 3. For each of these NCEA levels, student achievement is monitored nationally in 96 recorded subject areas. National statistics from NCEAs are provided in an annual publication called *NCEA Statistics Annual Report on NCEA & New Zealand Scholarship Data & Statistics*. These reports include statistics on trends in the number of students achieving qualifications; results distributions for various student groupings; results relating to school curriculum learning areas and scholarship subjects.

Information collected from schools

For the purpose of system-level monitoring, student performance data is complemented by a wide range of demographic, administrative and contextual data. The Ministry of Education collects statistical snapshot data from schools twice a year. These data collections are called Roll Returns and bring together administrative information such as student age, year enrolment, ethnicity and language education. The information is compiled in *School Roll Summary* reports and is further analysed to develop *School Roll Forecasts*. Demographic and contextual information such as indicators on family and

communities are compiled from a range of sources including the New Zealand Census and the different education agency databases. There is also a strong focus on compiling information on aspects of student participation and engagement. Data on pass rates, truancy, suspensions and retention rates are collected from a combination of sources including the School Roll Return, ERO school reviews and NCEA data. The Ministry of Education publishes an annual statistical report on the education sector called *Education Statistics of New Zealand*, which brings together basic education statistics on the number and types of schools, student participation and performance.

In addition, national surveys of both the primary and the secondary sector are run at three-year intervals to provide a national picture of school processes and the impact of policy changes on schools. The national surveys are implemented by the New Zealand Council for Educational Research (NZCER) and funded through its purchase agreement with the Ministry of Education. The surveys are sent to a random sample of schools and the responses are weighted so as to be representative of state and state-integrated schools across New Zealand. The questionnaires are completed by principals, teachers, trustees and parents. The surveys include a range of questions on issues such as school finance, strategic management, professional development and collaboration with communities. Each round of surveys also picks up particularly timely and relevant topics. For example, the 2010 survey in primary schools focused on the introduction of National Standards and the 2009 survey in secondary schools had a focus on the National Certificate of Educational Achievement (NCEA).

Thematic evaluations of different aspects of schooling

The Education Review Office (ERO) publishes between 12 and 20 National Education Evaluation Reports about New Zealand schooling each year. These reports gather evaluative evidence on specific education issues and serve to inform policy and practice. Past reports have covered a range of aspects of schooling such as the education of Māori and Pasifika students, special education, school curricula, pedagogy and assessment, school management and the education of diverse learners. The areas investigated in the National Education Evaluation Reports reflect the government's educational priorities as well as issues identified by those in the sector. ERO makes its final selection of which topics will be investigated in consultation with the Minister, the Ministry and, in some cases, other government agencies.

The Ministry and other government agencies use the National Education Evaluation Reports to establish priorities for the education sector and to develop New Zealand's educational policies. Schools use the reports to review and improve their management, organisation, teaching, and the achievement of students. The reports contain a variety of tools for educators and parents, depending on the nature of the evaluation. For example, they may provide the indicators ERO's review officers used to make their judgements about quality; focus questions for school self-review; examples of high and low quality practice; and questions for parents to use when discussing related issues with their school.

ERO consults with the Ministry regarding its evaluation questions and approach used in its National Evaluations. ERO also draws on local and international research to identify suitable evaluation indicators. These indicators are closely examined by internal reference groups and, in some cases, external reference groups. The reference groups also ensure that the final evaluation reports provide relevant information for the primary audiences and accurately reflect the evaluative evidence that has been gathered. ERO uses a range

of approaches in preparing different types of National Education Evaluation Reports (Box 6.1).

Box 6.1 The Education Review Office's approaches to preparing National Education Evaluation Reports

Reports on National Evaluation Topics: National Evaluation Topics (NETs) reflect current issues of interest to the government. To report on NETs, ERO gathers evaluative findings as part of individual school reviews. National Evaluation Topics provide lenses through which ERO investigates key aspects of individual school performance, while also gathering information that is synthesised into a National Education Evaluation Report. The collection of evidence for NETS usually takes place over one or two school terms. ERO has some ongoing NETS that are always a part of ERO reviews in schools; these include *Success for Māori students* and *Success for Pacific students*. ERO reviews approximately 600 primary and secondary schools each year, so the education evaluation reports reflect the findings from a substantial number of schools.

Good Practice Reports: Some of the schools identified in the NETS evaluations may be used to produce National Education Reports that focus on Good Practice. Typically these reports use a case study approach to identify, in more detail, the nature of effective practice in schools. These reports help provide a quality benchmark for school leaders and those in policy.

Reports prepared by specialist evaluation teams: Other National Education Evaluation Reports may be prepared by specialist evaluation teams. These involve small groups of ERO staff who have expert knowledge in the area being evaluated. Recent examples of this include ERO's evaluations of primary school science education and *Te Reo Māori* teaching. These specialist teams develop the evaluation methodologies, questions, indicators and information collection tools. Some of these investigations may also use a good practice approach, such as ERO's recent reports on Boys' Education and Good Practice in Alternative Education.

Source: Information provided to the OECD review team by the Education Review Office (ERO).

Further, New Zealand participates in international reviews of educational policy, such as the OECD projects on Improving School Leadership, Encouraging Quality in Early Childhood Education and Care, and Evaluation and Assessment Frameworks for Improving School Outcomes.

Strengths

A common accountability framework for the state sector

New Zealand has a well established public sector management and accountability framework that provides strategic direction and a range of monitoring tools for all state sector agencies. In the mid-1980s, the public management system underwent significant reforms to make the state sector more responsive to Ministerial demands. The New Zealand Treasury set up the following key principles for public management in all state agencies: clarity of objectives, freedom to manage, accountability, effective assessment of performance, and adequate information flows (New Zealand Treasury, 1987; Cook, 2004).

In 2004, the government introduced an overarching framework of high level goals for system performance called Managing for Outcomes. The Managing for Outcomes

framework seeks continuous improvement of the public sector's ability to identify, deliver and evaluate interventions that contribute to government goals. For the education sector this means that different education agencies need to co-ordinate their strategic direction so as to ensure that monitoring of education quality is related to high level goals of system performance. The Management for Outcomes framework provides a common model of a quality management cycle for all state departments. This improvement cycle involves four steps: setting direction; planning; implementation; and review, which then feeds forward to inform future planning.

More recently, the state sector Performance Improvement Framework was introduced to provide a more comprehensive model for performance improvement and cycles of performance assessments. It establishes a common language that defines what good performance means for the state sector and provides guidance on how agencies can focus on continuous improvement of their work. It also includes agency and sector models that can be used for either formal review or self-review.

Clear education objectives and strategies at the national level which are monitored over time

An important strength of New Zealand approach to education system evaluation is the clarity of strategic objectives, coupled with clear frameworks for reporting on progress and performance.

Education system reporting

The focus for education system evaluation is determined through the priorities set by the Ministry of Education's annual Statement of Intent (SOI). The Ministry of Education reports against its annual SOI to the Parliament. In the 2010-2011 SOI, three priority areas were established for schooling: all children achieving literacy and numeracy levels that enable their success; all youngsters having the skills and qualifications to contribute to their and New Zealand's future; and Māori achieving education success as Māori. All education agencies are working towards these objectives for school improvement.

An Education Indicators Framework has been developed to help decision makers analyse the state of the education system and monitor trends over time. The indicators described in this framework relate to six priority domains: education and learning; effective teaching, student participation; family and community; quality education providers; and resourcing. For each of these six indicator domains, there are specific measures to determine the extent to which certain aspects of a result have been achieved. The Indicator Framework also includes contextual information to help the interpretation of results. The performance of the education system is assessed against these indicators and reported annually in the annual publications *The State of Education in New Zealand* and *New Zealand Schools / Ngā Kura o Aotearoa*.

More comprehensive and regularly updated information on performance in each of the six indicator domains is also available online at the Education Counts website (*www.educationcounts.govt.nz*). The Education Counts website has been developed as a "one-stop-shop" for information on education statistics and research. The website is open to all audiences and brings together a wide range of information including demographic and contextual information; statistical information on educational participation and performance; analyses of education information; and research publications.

Reporting on national strategies

In addition to the overall objectives stated in the Ministry of Education's SOI, there are a number of strategies at national level to define more concrete system-level goals for particular student groups. Three key documents in this respect are the Māori Education Strategy *Ka Hikitia – Managing for Success* 2008-2012, the *Pasifika Education Plan* 2009-2012, and the *Disability Strategy*. The Ministry regularly reports on progress towards the implementation of these strategies.

- *Ka Hikitia – Managing for Success* sets out specific outcomes, targets and actions to realise the full potential of Māori learners. As an integral part of *Ka Hikitia*, the Ministry is developing a Measurable Gains Framework, which aims to provide accurate and ongoing information on the extent to which initiatives funded by the Ministry of Education are making a difference for Māori learners achieving education success as Māori. Progress towards the achievement of government goals for the educational success of Māori learners is also reported in a series of annual reports called *Ngā Haeata Mātauranga*.
- The *Pasifika Education Plan* establishes goals and targets for the achievement of Pasifika learners by 2012. An annual *Pasifika Education Plan Monitoring Report* has been developed to benchmark the level of Pasifika engagement and achievement before the implementation of the plan and to sketch the level of progress needed to achieve the plan's goals and targets.
- The *Disability Strategy* was developed by the New Zealand Office for Disability Issues to provide a guiding framework for all government agencies involved in developing policies that impact on disabled people. The Ministry of Education, like all other government departments, develops an annual Disability Strategy implementation work plan with concrete goals and actions. Since 2007-08, the work plans include a progress report for the previous year.

Monitoring of policy implementation

The Ministry of Education also commissions independent evaluations to monitor the implementation of national policies. Most prominent among these are ongoing evaluations of the implementation of *The New Zealand Curriculum* and the National Standards.

The implementation of *The New Zealand Curriculum* in English-medium schools is being monitored by ERO in a series of reports. The curriculum took full effect in 2010, but schools have been preparing to implement the curriculum since 2008, using a range of support tools. In its latest report, ERO found that by the end of 2009, 76% of schools were managing the curriculum change well, with 13% already giving full effect to the curriculum and 63% making good progress (ERO, 2010b).

The Ministry, in collaboration with ERO, has also developed a framework to monitor and evaluate the implementation of National Standards in English-medium schools. The National Standards: School Sample Monitoring and Evaluation Project, run by a contracted evaluation team, will collect information from a sample of state schools over the period of 2009-2013. This information will be complemented by survey data, information from ERO reports and results from national and international assessments. A framework for evaluating the implementation of National Standards in Māori-medium education (*Ngā Whanaketanga Rumaki Māori*) is currently being developed.

Nationally consistent information on student learning outcomes in primary and secondary education

New Zealand collects a wide range of data on education system performance in relation to national curriculum goals. Information on student learning outcomes is collected from a sample survey (NEMP) in primary education and from assessment for qualifications (NCEA) in secondary education. New Zealand has a tradition of focussing on holistic student development, and student assessment is well aligned to this approach. Student assessments that are used for national monitoring cover a wide range of curriculum goals and have a strong emphasis on authentic and performance-based items, including group work, hands-on tasks and project work. While it can be challenging to score such open-ended tasks reliably, New Zealand has put in place strong tools and training for assessors and a range of moderation mechanisms that ensure the consistency of national assessment results.

Sample-based monitoring of student outcomes in primary education (NEMP)

The results from NEMP give a comprehensive national picture of student performance in primary education in a broad range of subjects. One of the benefits of NEMP is its broad coverage which ensures that all curriculum areas are assessed. NEMP follows a set four-year cycle, in which each curriculum area is assessed every fourth year. For example, the assessments focused on language and health / physical education in 2010, and on mathematics, social science and information skills in 2009 (Table 6.1). NEMP is conducted every year, but assesses a different set of disciplines each year. To cover a broad range of items without overburdening individual students, three different groups of students are created for each subject, with each group being tested on one-third of the tasks. The tasks are not necessarily related to particular year levels – many tasks are the same for Year 4 and Year 8 students. Each student participates in about four hours of assessment spread over one week. A number of trend tasks are kept constant over the assessment cycles in order to obtain longitudinal data.

The national curriculum encourages the development of values and key competencies, in addition to learning areas that students should master. NEMP is designed to be as well aligned as possible with the curriculum by incorporating competency and value elements. Many of the NEMP assessment tasks are performance-based, requiring students to transfer learning to authentic close-to-real life situations. There are different assessment situations including one-to-one interviews, work stations and teamwork. As the assessment does not carry high stakes for students it is particularly important that tasks are meaningful and enjoyable to them. The assessment provides rich information on the processes used by students to solve problems or conduct experiments. Most assessment tasks are carried out orally so as to analyse what students can do without the interference of reading and writing skills. Some of the tasks are videotaped to allow for an in-depth analysis of student responses and interaction with teachers. NEMP also assesses students' cross-curricular skills, and attitudes towards the learning areas being assessed. Students' enjoyment of particular assessment tasks is also surveyed. For instance, 82.5% are reported as enjoying hands-on tasks, versus around 50% for paper and pencil tests.

Table 6.1 The National Education Monitoring Project (NEMP) assessment cycles

Year	Curriculum area	Essential skills	
2007 2003 1999 1995	Science Visual arts Information skills: graphs, tables, maps, charts, diagrams	Communication skills Problem-solving skills Self-management and competitive skills Work and study skills	Attitudes
2008 2004 2000 1996	Language (reading and speaking) Aspects of technology Music		
2009 2005 2001 1997	Mathematics Social studies Information skills: library, research		
2010 2006 2002 1998	Language (writing, listening, viewing) Health and physical education		

Source: New Zealand Ministry of Education (2011).

Another strength of NEMP is the high involvement of practicing teachers in all aspects of the assessment. Teachers participate in the development, trialling and implementation of NEMP. About 100 practicing teachers are freed from their teaching responsibilities each year to conduct the assessments. The teachers receive one week of training and then administer the tasks over a period of five weeks. The intention is to ground the assessment practice in sound teaching practice and to build and strengthen teachers' assessment capacities.

Results from the assessment are reported task by task in NEMP Reports for each curriculum area. The task reports indicate a total score as well as sub-group analyses by variables such as school decile, gender and ethnicity. The NEMP reports also provide some information on the patterns of change in student performance over time. For several years, results on NEMP have been remarkably stable, as have most of the New Zealand results on international tests. This should not be interpreted as meaning that NEMP does not serve its purpose. On the contrary, it shows that the students' results on NEMP tasks have some concurrent validity and provide key information on learning and achievement in New Zealand primary schools (Absolum *et al.*, 2009).

The NEMP assessments appeared to be well accepted by the stakeholder groups interviewed by the OECD review team. Key stakeholder groups interviewed by the OECD review team underlined the high quality system-level information generated through NEMP. They particularly welcomed the ability of the project to work constructively with teachers and to provide a wide range of assessment information that can be used by both policy and practice.

Information collected from assessment for qualification in secondary education (NCEA)

NCEA results are a key source of data to gauge the performance of the education system at the secondary level. As discussed in Chapter 3, performance results from NCEA assessments are highly credible. While approximately two-thirds of standards contributing to NCEA are assessed internally, a range of procedures are in place to ensure

that assessment practices are nationally consistent (Chapter 3). While this ensures that the qualifications have public credibility and can be used by employers and further education institutions for selection purposes, it also makes these results a useful source for system-level analysis. NZQA publishes national statistics from NCEA assessments on its website. This information provides a national picture of student attainment and performance and also allows comparing the outcomes of schools with similar student populations.

Another strength of the NCEA is that its results can be used to analyse trends in student performance over time. In 2010, NZQA launched its first *Annual Report on NCEA and NZ Scholarship Data and Statistics (2009).* The report describes major trends in student achievement and differences between major population sub-groups since the full implementation of the NCEAs in 2004. At present, the report is more focused on providing an accurate description of the last five-year trends and makes few attempts to explain the results or make recommendations. It is probably cautious to do so, as there are only five data points to determine the trends and as adjustments in the process may have occurred during the early implementation years.

A unique national student identifier

The National Student Number (NSN) has been used in the school sector since 2006. The NSN is a unique identification number given to every student. This unique identifier facilitates the management and sharing of information about students across the education sector in a way that protects their privacy. At the level of the Ministry of Education, almost all data collection from schools is set up in a way as to enable longitudinal analysis, using the NSN as a link. The existence of a widely applied unique identifier covering both schooling and the tertiary sector is a key strength of system monitoring in New Zealand.

The NSN can be used by authorised users for the following five purposes: monitoring and ensuring a student's enrolment and attendance; ensuring education providers and students receive appropriate resourcing; statistical purposes; research purposes; and ensuring that students' educational records are accurately maintained. Among other things, the NSN is applied for reporting purposes by education agencies, analysis of student assessment data over time, moving data between software applications, and issuing documentation students need to present to other schools or education providers.

Education policy builds on research and evaluative evidence

A commitment to developing a strong evidence base in education

New Zealand not only has a wealth of data and information on the state of its education system, but is also collecting an increasing amount of evidence on the factors and practices that can contribute to improving teaching and learning.

The purpose of the Ministry's Iterative Best Evidence Synthesis (BES) programme is to strengthen the evidence base so as to inform education policy and practice in New Zealand and act as a catalyst for systemic improvement. The BES programme produces a series of publications synthesising available research evidence on factors that can influence a range of learner outcomes. Recent BES publications have focused on issues such as school leadership; effective pedagogy in particular curriculum areas; and

teacher professional development. The iterative approach to building knowledge requires the BES authors to engage in a collaborative process with colleagues from educational policy, research and practice. The national advisory groups for the BES programme included synthesis writers, quality assurers, research methodologists, teacher union representatives, educational researchers and policy advisers (Alton-Lee, 2004).

The New Zealand Council for Educational Research (NZCER) also plays an important role in conducting educational research and evaluation, developing research-based tools and resources such as surveys and tests, and providing independent advice and information on education policy and practice. NZCER is an independent research organisation with 53 full-time equivalent staff, conducting research for a number of clients including the Ministry of Education. For example, it co-ordinates the Teaching and Learning Research Initiative (TLRI), a government fund for research about effective teaching and learning. NZCER also conducts longitudinal studies such as the Competent Children, Competent Learners project which started in 1993 and followed 500 students from Early Childhood Education throughout their school career to analyse how their educational experiences impacted on their learning and engagement.

The New Zealand Teachers Council (NZTC), a Crown Entity and professional body for teachers, further contributes to building a sound evidence base on high quality teaching. NZTC commissions research relating to all aspects of the teaching profession, including induction and mentoring, teacher education, teacher standards and the status of the profession. The intention is to build an evidence base that will strengthen policies and standards to support teaching quality (for more information on teacher standards, see Chapter 4).

New Zealand researchers and academics have traditionally contributed to the discussion around evaluation and assessment policies in education, individually and via advisory groups set up by the Ministry. Furthermore, in 2008, a group of leading researchers in this area created the New Zealand Assessment Academy (NZAA) as a permanent inter-institutional and independent expert group on educational assessment issues. The aims of this group are to (1) Advance research and scholarship in assessment; (2) Stimulate discussion and provide information and commentary on assessment issues, policies and practices; and (3) Proactively build assessment expertise in New Zealand. Representatives of NZAA reported that the creation of the group has helped its members establish an independent voice, especially in the debate around National Standards.

Focus on using evaluation results for policy and practice

There is a strong commitment at the national level to feed the results of evaluations back into the development of policy. All education agencies are expected to use information from education system evaluation in their strategic planning and review cycles. Within the Ministry of Education, a Research and Evaluation Team (in the Research Division) is responsible for building the Ministry's evaluative capacity. This involves building the infrastructure and the expertise to ensure that the Ministry plans effectively and uses evaluative information strategically for decision making.

There are examples of using information from international student assessments to feed back into policy and practice development. The New Zealand Ministry of Education (2011) reports that poor results of middle primary schools in the TIMSS assessment in 1994/95 led to the formation of a Mathematics and Science Taskforce in 1997. Following publication of PIRLS results, the New Zealand Education Institute in collaboration with

the Ministry of Education, launched focus group discussions on the findings from PIRLS across New Zealand, allowing schools to reflect on how those findings relate to their own practice.

Similarly, data from national assessments is used at the system level to analyse learning areas in need of particular attention. For example, the 2007 NEMP report on science indicated a dramatic decline in students' enjoyment of science. The percentage of students with a negative perception of science had increased from 15% in 1999 to 37% in 2007 (Crooks *et al*., 2008). In this period there had been a reduction of the time at school dedicated to science and especially to hands-on science experiments. As a follow-up to these results, the Ministry of Education asked ERO to conduct an Education Evaluation Report on science teaching in primary school. Results from NCEA assessments are also scrutinised to monitor developments in particular subject areas. NZQA publishes profiles of expected performances (statistical predictions) and monitors the actual spread of performances. If there are major discrepancies, this might lead to professional development for teachers in this subject, or to the revision of the standard.

The information collected from schools may also be used at the national level to identify issues or challenges that particular schools are experiencing. Data from ERO school reviews are used by the Ministry of Education to identify schools that are facing challenges and where the Ministry might decide to intervene. In addition, the information from school roll data and teacher turnover data can provide indications of problems in school management (Wylie, 2009).

Challenges

Some remaining data gaps in the national monitoring system

It is an important ambition of national goals and indicators to stay relevant in the context of changing social, economic and environmental demands. As stated in the Ministry of Education's Indicator Framework for the education sector, "the development and reporting on indicators will always be a work in progress" (New Zealand Ministry of Education, 2005). By definition, keeping track of emerging priority demands poses a challenge to any monitoring system and the work on ensuring the relevance of goals and indicators must be ongoing. The richness of data available in New Zealand is commendable and few stakeholders expressed concerns about significant gaps in data. However, challenges remain in some key measurement areas.

National data on students' and teachers' linguistic backgrounds is limited

One of the areas that seems insufficiently covered by national education statistics is the first language / language spoken at home by students. Language is a complex and important issue in the New Zealand education system. In 2008, 22.3% of the population in New Zealand were foreign-born (OECD, 2010). While the UK remains the largest source country, the vast majority of immigrants do not speak English as their first language and their children may have learned it to varying degrees before entering the school system. Language remains an important issue for second-generation immigrants. While most of the Pasifika students were born in New Zealand, this does not necessarily mean that English is their first language. Māori students may also face particular challenges related to language. In both English-medium schools and Māori-medium

schools, there are students who do not speak the language of instruction at home or who have not learned it as their first language.

While the importance of language in education is well recognised in New Zealand, information on the languages spoken by students and teachers outside school is not collected nationally. The State Services Commission acknowledged a data gap around the issue of first languages. The teacher census provides a range of high quality data but there is no information on teachers' linguistic background. The Pasifika Group within the Ministry of Education also noted that the basic information on students' first languages and their level of proficiency in their first language was inadequate. They acknowledged the need for enhanced research in the area of bilingual learning. Considering the importance of the language in education, it is unfortunate that such important data are not gathered nationally. It would provide useful information to determine the need for a national strategy and teachers' guidance for ELL students.

There is room for more fine-grained analysis of different ethnic groups

New Zealand has a strong focus on collecting and reporting data by ethnicity. In standard reporting, data are disaggregated for the three major ethnic groups – European, Māori and Pasifika. However, the indicator framework states that, as the information system matures, there is room to go into deeper analysis of different ethnic groups. Such analysis could concern both a more fine-grained analysis of different Pasifika groups as well as more focus on other ethnic groups.

National monitoring in primary education does not include Māori-medium schools

Major steps have been taken to ensure that the progress and achievement of Māori and Pasifika students is continuously monitored. Wherever possible, outcomes are monitored by separate ethnic groups as well as the whole student population. However, the key national monitoring tool in primary education (NEMP) was discontinued in Māori-medium schools in 2005. The main reason for this was that the items used for assessment in Māori-medium schools had not been developed within a Māori context. They were in fact direct translations of the English items used in the English-medium sector. The Ministry is now collaborating with Māori assessment experts to develop a national monitoring study for the Māori-medium sector.

The use of school reporting information could be further enhanced

New Zealand has already taken major steps to create consistency in data management systems by auditing commercial student management systems (SMS) and providing a list of "accredited" SMS that are compatible with national reporting requirements. However, it remains voluntary for schools to purchase and implement student management systems. In a 2006 survey, almost a third of the responding primary school principals reported that they had no SMS yet (Hipkins *et al.*, 2007).

Systematic sharing of data between schools is still limited

Further, the diversity of approaches to school data management may create challenges in ensuring follow-up of students across transitions. For example, lack of information on students' socio-economic situation and inaccurate or delayed transmission of assessment information may lead to disruptions in students' learning as they enter a new level of

education (Tolley and Shulruf, 2009). While good connections between secondary schools and their feeder schools may help alleviate the difficulties often encountered in the transition years, such connections may be difficult to establish when a large number of primary feeder schools are involved.

Indeed, a 2006 NZCER survey on school reporting frameworks indicates that the introduction of school planning and reporting frameworks has had little impact in terms of improving the communication of schools about student results. The sharing of information about students between schools was reported by principals and teachers as the area of least impact of the school reporting framework (Hipkins *et al*., 2007). In their analysis of the data, Hipkins *et al*. (2007) suggest that this should be an area of further investigation. Among the reasons for limited data sharing could be the fact that it is not easy to use the school-wide data to extract data about individual students. Also, the lack of a data sharing tradition may take time to overcome.

The Ministry of Education is well aware of these challenges and is currently working on a Student Record Transfer initiative that should allow feeder schools to upload the data of their graduating students to a secure file server from which the receiving school will be able to download it.

The use of school reporting information for system monitoring and feedback is limited

Improvements could also be made to way school reporting data is used by the educational administration. Schools are required to report annually on their progress to the Ministry of Education. Based on the interviews conducted during the OECD review visit to New Zealand, the OECD review team formed the impression that there was room to further clarify the purpose and use of this type of reporting information at the level of the Ministry. Several stakeholders we interviewed questioned whether the data reported by schools to the Ministry was actually used purposefully for accountability or improvement.

In a 2006 survey (Hipkins *et al.*, 2007), the majority of primary school principals saw the purpose of school reporting to be adjustments and improvements in their own school practices. Only 38% of primary principals and 25% of secondary principals saw national policy developments among the purposes of school reporting. Only 17% of primary principals and 9% of secondary principals believed that school reporting aimed at allowing government to gather data about each school and assist schools.

The State Services Commission commented that from a system evaluation perspective, there is certainly scope to create more system-wide consistency in the ways schools measure and report on their performance. In fact, the high variability in the format, content and quality of school reporting to the Ministry of Education severely reduces the usability of this information for system monitoring or to systematically identify schools in need of support.

Uncertainties about schools' reporting on standards

From 2012/13, schools will have to report on their students' results in relation to standards in their annual reports. The introduction of National Standards raises additional questions about how this new reporting information from schools will feed into system-level evaluation.

As discussed in Chapter 3, there is variability between teachers and between schools in their assessment practices. The standards are a new tool that requires teachers to make complex judgements. The existing suite of assessment tools predates the introduction of the standards and there are challenges in relating the existing progressions and assessment tools to the National Standards. It is not clear in what way teachers can use existing assessment tools and progressions to benchmark their students against standards. Some of the teachers we spoke to during the visit reported difficulties in relating standards to existing tools, for example that a student who achieves well on Assessment Tools for Teaching and Learning (asTTle) may not be meeting the standard.

Beyond the questions about the reliability of standards-based assessment, there is also a need to improve communication about the purpose and use of the new reporting information in education system monitoring. During the interviews of the OECD review team with stakeholder groups, many expressed confusion about the intentions behind the introduction of the standards. There is a concern that schools will be judged and compared based on their students' results against the standards. This is considered inappropriate because the standard reporting currently does not give information about the rates of progress of students or about the value added by schools to student learning. The simple information about the number of students above and below the standard, disconnected from other sources of evidence, provides little insight about the quality of teaching and learning in schools.

Policy recommendations

The OECD review team commends the clarity of the current strategic framework and monitoring of the results of the New Zealand education system. Based on clear national objectives and strategic plans, the system evaluation framework produces a wealth of high quality data that are published transparently. Within this context, the review team would recommend considering the following points for future policy development to further strengthen the system evaluation framework:

- Continue to broaden the collection of data on diverse groups of students;
- Optimise the use of school reporting data for system improvement;
- Strengthen the reliability of standards-based reporting information.

Continue to broaden the collection of data on diverse groups of students

In order to continue to meet information needs to adequately monitor progress towards national education goals, it would be important to strengthen the information system regarding diverse groups of students. Information systems could be strengthened by further disaggregating information on different sub-groups of Pasifika students and other ethnic groups in regions where such information is relevant.

The immediate priority to ensure better monitoring information towards the Ministry's strategic goal of "Māori achieving education success as Māori" is to obtain better data on Māori learning outcomes in primary education. As mentioned above, work towards developing a culturally relevant version of NEMP for Māori-medium education is ongoing. Implementing a revised version of NEMP in Māori-medium settings has the potential to produce highly valuable system-level information. As NEMP tests are mostly performance-based, they are not affected to the same extent by reading and writing

abilities. They could provide useful information on the impact of language and culture in the cognitive processes involved in Māori students learning.

To design adequate strategies for second language learners, the Ministry should consider gathering more information on students' linguistic profiles. In particular, it would be useful to begin collecting data on the languages students speak at home and proficiency in their first and second language. More comprehensive data on the linguistic profiles of students would be helpful in designing a language strategy at the national level and making decisions about specific resources and support allocated to second language learners. It would also be of interest to provide national assessment data broken down by specific language profiles in order to monitor trends and analyse whether specific groups of English language learners face particular challenges with some tasks. This is in line with ERO's recommendation that data on the linguistic profiles of children should be gathered systematically and that achievement results be reported according to such profiles.

Currently, while schools are encouraged to collect data on their students' linguistic competencies, it is not clear to what extent this is done systematically across the country. A national template could be used to assist schools in gathering essential information on students' linguistic profiles locally and in feeding up and aggregating such data at the national level. This national template should include the most important and basic questions and could be complemented by questions of interest at the local level which would not be reported at the national level.

In Ontario, for example, data on students' linguistic profile is gathered from parents, teachers and children at the time of the provincial testing in Year 3. This allows some form of triangulation among sources which makes the data more valid. Data is gathered on language use in a large variety of circumstances, such as languages spoken at home, with parents, with siblings, at parents' work, outside of home (with friends, etc.) as well as the languages that children prefer to write in and how often they do so. Questions are also asked about the availability of books for reading both in the language spoken at home and in the language of instruction and the use of media (TV, music, movies, Internet). The idea is to obtain a picture or profile of how many opportunities the child has to speak and practice the language of instruction outside of the classroom. Ultimately, the data will be used for language planning at the school and system level.

Optimise the use of school reporting data for system improvement

The amount of existing information on school and system performance offers many opportunities to engage stakeholders in supporting improvements in education outcomes. While large amounts of data are collected from schools, there is room to strengthen the analysis and mobilisation of such information to optimise the use of these data for system monitoring and improvement. There is a range of options that could be considered to ensure more effective use of existing information by key actors in the education system. Simple options include ensuring that data is used effectively for transition management between schools and analysing data at the level of the Regional Offices of the Ministry of Education. Such improvements in reporting have the potential to improve the interconnections among schools and between schools and regional and national jurisdictions in education.

Establish a protocol for data sharing

To ensure smooth transitions of students from one level from the next, schools need to identify the types of information that they would like to obtain from their feeder schools as well as the data they could report upwards to the next level of education. Good reporting on students' previous accomplishments can help create coherence in students' educational trajectories. It may contribute to easing transitions while saving a lot of time in assessment of prerequisites when entering a new level of education. Passing information back to feeder schools can also help them analyse how well they are preparing students for future learning.

The Ministry of Education could support schools in the process of identifying the most suitable types and formats of data to ease transitions for students. This could be done through a consultation or survey of stakeholders regarding data needs and could result in developing a protocol for data sharing. Such a consultation could also reveal professional development needs related to the collection and passage of data. As Absolum *et al*. (2009) have put it: "teachers also need to know how to gather the assessment information that other stakeholders require, and how to pass it on in ways that are consistent with, and supportive of, student learning." The development of the Student Record Transfer initiative provides a timely opportunity to conduct such a consultation on data needs and principles of data sharing.

Envisage data collection, analysis and use as a collaborative process

As Tolley and Shulruf (2009) point out, to optimise the use of data across the education system it is essential that schools are not merely seen as data providers but that they become part of a collaborative process of data sharing and analysis. This means that information would not just flow upwards to the Ministry of Education but that feedback would also flow from the educational administration back to schools.

The Regional Offices of the Ministry of Education could possibly take on such a feedback role. As they are closer to the local level than the national Ministry Office, the Regional Offices could use school reporting data as a basis for engaging in meaningful discussions with schools and Boards of Trustees. In 2006, only 19% of secondary principals said that their annual reports were followed by professional discussions with the Ministry, whereas another 35% would like such discussions (Wylie, 2009).

To further strengthen the role of Regional Offices, the Ministry could also consider disaggregating system-level data by region so as to allow a more fine-grained analysis of geographical differences. The Regional Offices could thus provide information to schools as to how they compare to other schools with similar student populations in the same area or region. Such work should be based on consultations with Regional Office staff concerning the type of data that would be most useful for analysing education issues at a regional level.

Clarify the use of standards-referenced reporting in system monitoring

Throughout discussions with stakeholder groups, the OECD review team noted a lack of clarity around the use of standards reporting in system monitoring. While National Standards intend to provide a nationally standardised measure of students' foundation skills, assessment practices vary between schools (ERO, 2007; Wylie and Hodgen, 2010). If the standards information is to be used to monitor academic outcomes at the national

level, further steps need to be taken to ensure that the assessment information is indeed nationally consistent. There are a range of options for the Ministry of Education to support schools in making reliable and consistent assessments against the standards.

First, the introduction of National Standards could be used as an opportunity to focus further attention on building assessment capacity across the primary school system. It will take substantial training and support for teachers to make reliable assessments within the new framework given by the standards. This requires further investment in providing professional development opportunities which support teachers' capacity to assess students specifically in the context of the National Standards. Also, it would be helpful to establish feedback channels for teachers to report on how the National Standards work for them in practice, and where they would suggest improvements. New Zealand's experience with the introduction of NCEA has shown that it takes time, professional support and collaboration to build collective understanding of evidence for standards-based assessment (Wylie and Hodgen, 2010).

Second, consideration should also be given to developing further tools that teachers can draw on for their assessment practice. As mentioned above, the introduction of the National Standards poses new challenges to the existing assessment instruments. It is essential to clarify the role of the existing range of assessment tools in relation to the new National Standards. It would be helpful to ensure that the benchmarks of National Standards are more closely aligned with the progression levels and measurement scales of the existing assessment tools. The range of exemplar materials in particular subject areas and year levels could also be expanded.

Third, the national authorities should encourage and support systematic moderation procedures linked to the reporting on standards. External moderation is key to ensure reliability and validity of teacher judgements against standards and can provide opportunities for rich discussion among teachers. In their first evaluation report on the implementation of National Standards, ERO (2010a) reported that two-thirds of schools had some internal moderation processes in place and that "some" of these schools were also working with others on moderation. However, 18% of schools were just beginning to look at moderation and 15% had not yet considered how to moderate teacher judgements.

Finally, national level reporting of standards should not take away attention from the array of existing national monitoring tools. The standard reporting information should not be seen as stand-alone but be complemented with other available measures of student learning outcomes, including international assessments, NEMP, ERO thematic reviews and broader school reporting information.

Notes

1. In Māori-medium schools, NEMP was used from 1999, but it was discontinued in 2005, essentially because the items had not been adapted to a Māori context. A new national monitoring study for Māori-medium education is currently being developed.

References

Absolum, M., L. Flockton, J. Hattie, R. Hipkins and I. Reid (2009), *Directions for Assessment in New Zealand (DANZ) Report: Developing Students' Assessment Capabilities*, Ministry of Education, Wellington.

Alton-Lee, A. (2004), "A Collaborative Knowledge Building Strategy to Improve Educational Policy and Practice: Work-in-Progress in the Ministry of Education's Iterative Best Evidence Synthesis Programme", paper prepared for a Symposium at the New Zealand Association for Research in Education National Conference 2004, "Turning the Kaleidoscope", 25 November.

Cook, A.L. (2004), "'Managing for Outcomes' in the New Zealand Public Management System*", New Zealand Treasury Working Paper*, 04/15, Wellington.

Crooks, T., J. Smith and L. Flockton (2008), *National Education Monitoring Project: Science Assessment Results 2007*, NEMP Report 44, report prepared and published by the Education Assessment Research Unit, University of Otago, New Zealand, under contract to the Ministry of Education, New Zealand, Dunedin.

ERO (Education Review Office) (2007), *The Collection and Use of Assessment Information in Schools*, Education Review Office, Wellington.

ERO (2010a), *Working with the National Standards within the New Zealand Curriculum,* Education Review Office, Wellington, *www.ero.govt.nz/National-Reports/Working-with-the-National-Standards-within-the-New-Zealand-Curriculum-August-2010*.

ERO (2010b), *Preparing to Give Effect to the New Zealand Curriculum,* Education Review Office, Wellington, *www.ero.govt.nz/National-Reports/Preparing-to-Give-Effect-to-the-New-Zealand-Curriculum-June-2010*.

Hipkins, R., C. Joyce and C. Wylie (2007), *School Planning and Reporting in Action: The Early Years of the New Framework*, New Zealand Council for Educational Research, Wellington.

New Zealand Ministry of Education (2005), *Indicator Framework*, Education Counts on edCentre, *www.educationcounts.govt.nz/__data/assets/pdf_file/0018/9513/Indicator_Framework_v2.0.pdf.*

New Zealand Ministry of Education (2011), *OECD Review on Evaluation and Assessment Frameworks for Improving School Outcomes: Country Background Report for New Zealand*, *www.oecd.org/dataoecd/6/16/47797042.pdf*.

New Zealand Treasury (1987), *Government Management, Brief to the Incoming Government, Volume 1,* Wellington.

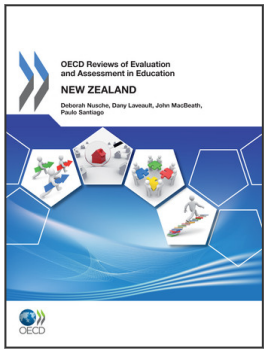
NZQA (New Zealand Qualification Authority) (2010), *Annual Report on NCEA and New Zealand Scholarship Data and Statistics (2009)*, New Zealand Qualification Authority, Wellington, *www.nzqa.govt.nz/about-us/news/launch-of-annual-report-on-ncea/*, accessed 1 November 2010.

OECD (2010), *International Migration Outlook, SOPEMI 2010*, OECD, Paris.

Tolley, H. and B. Shulruf (2009), "From Data to Knowledge: The Interaction between Data Management Systems in Educational Institutions and the Delivery of Quality Education", *Computers and Education*, 53, pp. 1199-1206.

Wylie, C. (2009), "Getting More from School Self-Management", in J. Langley (ed.), *Tomorrow's Schools, 20 Years On…,* Cognition Institute, *www.cognitioninstitute.org/index.php/Publications/Tomorrows-Schools-20-Years-on.html*.

Wylie, C. and E. Hodgen (2010), *NZCER 2010 Primary & Intermediate Schools National Survey: A Snapshot of Overall Patterns and Findings related to National Standards*, New Zealand Council for Educational Research, Wellington.



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