

**Kohia ngā taikākā – Seek the heartwood:**

**Issues of validity in translating NEMP assessment tasks**

Liz Eley and Joe Hunter  
Researchers  
Educational Assessment Research Unit  
University of Otago  
P O Box 56  
DUNEDIN.

**PHONE:** (03) 479 8407

**FAX:** (03) 479 7550

**E-MAIL:** [liz.eley@otago.ac.nz](mailto:liz.eley@otago.ac.nz)  
[joe.hunter@otago.ac.nz](mailto:joe.hunter@otago.ac.nz)

The purpose of the National Education Monitoring Project (NEMP) is to provide a national picture of what New Zealand children know and can do. The project team consults widely and works with curriculum advisory panels to develop and select assessment tasks that focus on important dimensions or the 'heartwood' of curriculum areas. Since 1999, NEMP has also been assessing students in te reo Māori mainly using tasks originally developed to be administered in English. The transfer of assessment tasks to Māori has raised a number of issues.

It has not been possible to bring a blanket solution to some of these problems. Within each curriculum area different issues and concerns have arisen. This paper examines the process of NEMP task development in four different learning areas and analyses some of the issues considered in their development for mainstream students and the subsequent transferral to Māori Immersion settings.

Key words: Educational Assessment, Translation, Test Validity

“Assessment is an inexact matter” (Harlen, 1994) and much of the work of those involved in developing assessment tasks centres around refining the inexact tools. The inexactness of the assessment process is exacerbated when tasks that have been developed in English and within a mainstream educational climate are translated and transferred to Māori Immersion settings. In the four years that assessments in te reo Māori have been undertaken by NEMP, there have been many lessons learnt by task developers and reviewers. This paper examines the process used by the National Education Monitoring Project (NEMP) in the development, translation and use of assessment tasks in Māori Immersion settings. The “learning journeys” that have occurred as four different tasks have been developed are described, and some of the issues considered are discussed.

### **The National Education Monitoring Project:**

New Zealand’s National Education Monitoring Project (NEMP) commenced in 1993 with the task of assessing and reporting on the achievement of primary school children in all areas of the curriculum. Since 1999, parallel assessments of samples of Year 8 students have been conducted in te reo Māori. NEMP provides a national ‘snapshot’ on “how well overall national standards are being maintained, and where improvements might be needed” (Ministry of Education, 1993a). The assessing and reporting procedures used by NEMP are designed to provide a rich picture of what children can do, resulting in a detailed national picture of student achievement. A number of the procedures used by NEMP to gather this rich data are unique for a national assessment project.

NEMP aims to address coverage of the National Curriculum Framework over a four-year cycle, rather than restrict itself to pre-selected priority areas such as mathematics or literacy. The first cycle of assessments began in 1995 and was completed in 1998, the second cycle running from 1999 to 2002. A third cycle will begin in 2003. The assessment tasks are designed to emphasise aspects of the curriculum that are particularly important to life in the community. They endeavour to “achieve a balanced coverage of important

skills, knowledge and understandings within the various curriculum strands, but without attempting to slavishly follow the finer details of current curriculum statements” (Crooks & Flockton, 2002)

Care is taken to use tasks and approaches that interest and motivate students and a variety of assessment task formats are used in order to get the broadest possible coverage of learning outcomes. The assessment task formats used include:

- One-to-one interviews: students work individually with a teacher, the session being recorded on videotape.
- Stations: Four students, working independently, move around a series of stations where tasks have been set up. This session is not videorecorded.
- Team: four students work collaboratively, supervised by a teacher, on group activities; the session being recorded on videotape.
- Paper and pencil activities: students work independently on paper and pencil activities, that is; short answer, extended written responses or multiple choice questions.
- Practical activities: students work independently on practical activities such as making art works or physical performances for physical education.

No marking or scoring of student work is undertaken while the tasks are being administered, but all work is returned to the NEMP office for marking by senior tertiary education students and teachers. In this manner, a considerable amount of information can be gathered without placing too many demands on individual students, different students attempt different tasks. The students selected in the main sample are divided into three groups. The immersion students are divided into two groups. These two groups work in Māori, with two of the sets of tasks used in the main sample.

Each year, random samples of students are selected nationally at two class levels: Year 4 (8 - 9 years old) and Year 8 (12 -13 years old). The main national samples (approximately 1440 children at each Year level) represent approximately 2.5% of the children at those levels in New Zealand schools.

Additional samples of 120 children at each level allow the achievement of Pacific students to be assessed and reported. Since 1999, at the Year 8 level only, a special sample of 120 children learning in Māori immersion settings is selected to take part in assessments conducted in te reo Māori. About 60% of this sample is drawn from immersion schools (mainly Kura Kaupapa Māori), while the other 40% are learning in immersion classes (located in mainstream schools, but having upwards of 80% of instruction conducted in Māori). Their achievement is then compared with the achievement of Māori students in general education and the results given in a separate report each year. The inclusion of assessment tasks in te reo Māori in NEMP has not been unproblematic. The procedures and practices used have been, and continue to be, scrutinised and refined. The 1999 NEMP assessments are believed to be the first assessments conducted at a national level using tasks originally developed to be administered nationally in English. Some significant difficulties were experienced in that first year and substantial improvements to the sampling, translation and assessment procedures were implemented in 2000. The process has continued to be evaluated and refined.

The assessment tasks used in NEMP come from a variety of sources. They can be developed from ideas proposed by teachers participating in regional task development workshops, by the curriculum advisory panels that are convened for each curriculum area, from a review of national and international assessment materials, or developed by NEMP staff. A small proportion of the assessment tasks used each year (for both assessments conducted in English and those conducted in Māori) are developed from ideas proposed by educators working in Māori Immersion education as being particularly appropriate for these children.

The initial task ideas are developed and trialled by NEMP staff then subjected to careful scrutiny by the advisory panel for that particular area each of which includes at least one Māori Immersion educator. All the tasks are then further scrutinised by those attending a combined meeting of the NEMP Māori Immersion Education Advisory Committee and the NEMP Māori Reference

Group (the latter focussing on the interests of Māori students who will be assessed in English).

### **The Translation Process:**

In 1999, tasks were translated by a group of translators working independently of each other and NEMP staff. A task was translated from English to Māori by one translator, then back-translated (from Māori to English) by another translator. Congruence between the two English versions was then checked. At the end of this process, the English and Māori versions were sent to Te Taura Whiri (The Māori Language Commission) for checking and guidance on improving. After the assessment took place, concern was raised that the Māori version of the tasks used language more appropriate for adults than children; using more words and being linguistically more complex. The translation process was therefore altered, and for subsequent translations, six translators (working in two teams of three) have worked in the NEMP office, able to consult with NEMP staff. A process of back-translation between the two groups, with overview from senior translators within the team has incorporated the need for ensuring that the language is more natural and child-focused. After the initial translation, the tasks are trialled in a Kura Kaupapa Māori, and further adjustments made if required.

It also became apparent as the assessments were being conducted in 1999 that a limited understanding of te reo Māori affected the performance of at least 30 percent of the students. From 2000 on, only students reported by their schools to have completed five or more years in Māori Immersion education are included in the sample. International research (for example, Cummins, 1984; Lacelle-Peterson, 2000) has suggested that at least five years of immersion in a language is required before performance on assessments in that language is not significantly undermined by language difficulties.

NEMP is committed to providing all students every opportunity to perform to their best ability (Flockton, 1999). Tasks are rigorously scrutinised during the process of development and trialling to ensure they relate strongly to student

experience, have a high level of interest for the student, are based in authentic contexts, and that they allow engagement of all students, regardless of ability. Considerable effort is spent in shaping the language of the task in order that it be readily understood. Particular attention is given to the specific wording of questions. Clearly, these issues are become even more important when the assessment of students in Māori Immersion settings are considered.

This paper examines some of the issues that are considered in each stage of the development of a task. Four tasks are reported here: a speaking task, a technology task, a science task and a social studies task. In this reporting, some of the issues that have been raised, and NEMP's attempts to address them, are discussed.

### **Task 1: The Sandwich/Te Hanawiti**

“The Sandwich” is a speaking task that was attempted by Year 4, Year 8 and Māori Immersion students. The task was conducted in the one-to-one interview format. The students were presented with a picture book showing a story of a pig making a sandwich (the story was told without words, the only words were the title) and asked to make up their own story to go with the pictures. They were instructed to pretend they were telling the story to a young child, and to make the story as interesting as possible. They were then asked to take a few minutes to familiarise themselves with the story and then to tell the story in a “way that makes it fun to listen to” (English version of the task).

The results for this task are presented in Table 1. More than half the students in each of the subgroups reported in the table covered the main thread of the story well. Considerably fewer made the story detailed or interesting. When the results for Year 4 and Year 8 are compared, it can be seen that, for all five attributes examined, and overall, about 10 percent more Year 8 than Year 4 students scored highly. Students taught in the Māori Immersion setting performed slightly better than Māori students taught in general education, although these differences were not statistically significant ( $p \leq 0.5\%$ ).

Table 1: Results for “The Sandwich”;

		Marks Awarded	Assessment in English		Year 8 Māori Students in General Education	Year 8 Māori Students in Immersion Education
			Year 4	Year 8		
<b>Attribute:</b>			% responses			
Covering the main thread of the story	strong	2	60	73	62	83
	moderate	1	34	24	34	15
	weak	0	6	3	4	2
Embellishing story	strong	2	27	39	35	53
	moderate	1	53	50	47	21
	weak	0	20	11	18	26
Clear oral expression of ideas	strong	2	54	65	43	57
	moderate	1	34	30	57	30
	weak	0	8	5	10	13
Making presentation interesting	strong	2	26	35	24	23
	moderate	1	54	52	57	41
	weak	0	20	13	19	36
Overall effectiveness in presenting story	very high	3	8	15	9	34
	quite high	2	33	39	34	28
	moderate	1	47	40	50	23
	low	0	12	6	7	15
% scoring 8 or above (out of a possible 11)			40	51	39	60

The task was selected for use as it was felt that it gave a good opportunity for students to tell a story. The book was chosen as the text for retelling as it appeared to contain elements of a story that most students could relate to. The illustrations are bright, cheerful and detailed, giving plenty of opportunity



for description and elaboration. Students with a low level of confidence could attain some success by relying on a description of each page, rather than developing a narrative line.

This task is a link task, that is, it was designed and developed for use in 1996 and repeated in 2000 so trends over time could be observed. As students in Māori Immersion education were not assessed in 1996, this was not a link task in that setting in 2000. At that time, the interests of, and suitability for, students being taught in the Maori Immersion settings were not necessarily being considered. A different text could have been more suitable if that were the case.

This task would appear to be valid in terms of assessing an aspect of Māori students' skills and knowledge. It requires the construction of an oral monologue, responding to and interpreting visual cues in a self-structured account. Notwithstanding the particular text, there are issues in translation into a Māori Immersion setting if the task is to be treated as equivalent in terms of interpretation of data.

For a second-language learner, the most accessible way to deal with this task is to simply 'speak to the pictures', recounting what is seen. Greater fluency is required to have internalised the structures concerned with shaping a narrative such as phrases dealing with time, or colloquial expressions which might be used in a humorous manner. Students may also be used to learning situations that provide scaffolding in terms of language extension and elaboration which is not provided here due to the open-ended nature of this task.

An examination of the requirements of the task also reveal some cultural cross-talk. Cultural constructs which may be taken as given in English can present some difficulties in translation. The concept of 'fun' or 'funny' is one such example. There is a certain idiom involved in these words which does not translate readily to Māori as a word-for-word equivalent. In English, instructions are couched in an indirect manner which abstracts the task. For example, "Pretend you will tell the story to a young child". The translation into

Māori became more direct. The construct of pretence, of imagining, indeed, of the mind and imagination, creates some tension for translators to present in Māori in an unambiguous manner that is readily understood by students.

**Task 2: Light the Lights/Whakakāngia Ngā Rama**

“Light the Lights” is a technology task that was attempted by Year 8 and Māori Immersion students. The task was conducted in the stations format. The students were given a set of six wires (with alligator clips) and a board with two switches, a battery and a bulb attached. They were told that the board was to be wired up so two people could use it in a competition. They were asked to firstly wire up the board so one switch would make the light bulb glow, then draw the wires on the provided diagram. For part two of the task, they were asked to rewire the board so the light bulb would glow if either switch was pressed. This task was also a link task for the assessment in English.

The results for this task are presented in Table 2. In general, students struggled to complete this task, particularly wiring the circuit for two switches.

Table 2: Results for “Light the Lights”;

	Year 8 students assessed in English	Year 8 Māori Students in General Education	Year 8 Māori Students in Immersion Education
<b>Attribute:</b>	% correct		
Wired correctly for one switch	47	35	18
Correctly wired for two switches	16	9	2

This task is an example of a task set in the technological area called “Electronics and Control” in Technology in the New Zealand Curriculum. While students may not have had direct experience wiring up this exact format, many students could have had opportunities to work with electrical circuits in this technological area, or to meet science objectives. Both Science

in the New Zealand Curriculum (Ministry of Education, 1993b, p.76) and Pūtaiao i roto i Te Matauranga o Aotearoa (Ministry of Education, 1996, p.40) state that “students should have had “learning experiences with . . . simple electrical circuits by the end of year 6”. However, NEMP does not collect data on school teaching programmes, so we cannot be certain that every student has had comparable learning experiences in this area. Proficiency with electrical circuits may also be being developed through students’ leisure activities.

This task, although translated and used in the NEMP assessments, may not reflect the teaching and learning situations that are occurring in Māori Immersion settings. As in general education, Māori Immersion schooling must deal with rationalising the “crowded curriculum”. In a context where all instruction will have at its core the learning of language, decisions are made about what language and contexts are most critical. More emphasis may be placed on aspects of learning which are seen to have a direct connection with specifically Māori cultural experiences, therefore, an area which is not seen as traditionally Māori may be considered to be less of a priority in the teaching setting.

Everyday vocabulary in English may be new curriculum jargon in Māori that is not part of teachers’ language corpus, let alone that of their students. The word “battery” is a good example. It’s scientific equivalent, ‘electric cell’ may not be used by English-speaking students, but the word ‘battery’ could be expected to be part of the every day conversation in their home lives beyond school. In contrast, the Māori word used in this context, ‘pūhiko’, is comparatively recent. It is a composite word, crafted from two older words, pū and hiko. Pū has many different meanings which students could have experienced, but commonly means the base or the source. Hiko equates to ‘energy’, which immersion students could be familiar with as in the ‘flash’ of lightning, which in common usage means ‘electricity’. Students may also encounter the word “battery” rendered as a transliteration such as pateri, or peteri; or as a compound term such as pāka hiko; or an alternative term such

as unikā. These variations will juggle for exposure, comprehension, and recall by the student. Thus, the translated task becomes more complex due to the demands of language.

### **Task 3: Kai Moana**

“Kai Moana” is a science task that was attempted by Year 4, Year 8 and Māori Immersion students. The task was conducted in the stations format. Each student was provided with a set of ten stickers showing different types of seafoods and asked to complete a two part task. In part one, students were asked to stick each picture on the picture provided of a coastal scene, showing where that picture would usually be found, for example, in deep water, on the rocks and so on. In part two, students were asked to match the picture of the seafood to its name, the first one (paua) being done for them as a model. The ten seafoods (with Māori names in brackets) were: paua (pāua); kina; oyster (tio); crayfish (kōura); crab (pāpaka); snapper (tāmure); mussel (kuku); eel (tuna); cockle (tuangi); and flounder (pātiki).

The results for this task are presented in Table 3. In both groups assessed for the assessment in English sample (Year 4 and Year 8), students showed a high level of competence in identifying the seafoods. Few students had difficulty in identifying the eel, crab or crayfish pictures. The oyster and the cockle pictures presented the most challenge. Year 8 students achieved better than the year 4 students when it came to identifying each seafood’s habitat. When the two groups of Māori students are compared, on several occasions, Māori Immersion students showed greater knowledge of where the seafood could be found, but less knowledge of the name of the seafood.

Table 3: Results for “Kai Moana”;

		Assessment in English		Year 8 Māori Students in General Education	Year 8 Māori Students in Immersion Education
		Year 4	Year 8		
<b>Seafood:</b>		% correct			
Paua (Pāua)	location	21	41	55	69
Kina	identification	59	83	96	100
	location	20	40	51	75
Oyster (Tio)	identification	57	94	98	71
	location	19	44	43	65
Crayfish (Kōura)	identification	94	98	98	100
	location	32	53	60	62
Crab (Pāpaka)	identification	97	98	98	82
	location	64	74	65	86
Snapper (Tāmure)	identification	66	87	94	75
	location	48	70	67	76
Mussel (Kuku)	identification	76	89	98	60
	location	21	39	41	63
Eel (Tuna)	identification	96	100	100	94
	location	42	71	70	81
Cockle (Tuangi)	identification	50	71	84	56
	location	54	60	56	73
Flounder (Pātiki)	identification	66	87	93	88
	location	26	37	35	61

This task is an example of a task developed in English and transferred for use in the Māori Immersion setting. One of the Level 3 Achievement Objectives in Science in the New Zealand Curriculum is “explain, using information from personal observation and library research, where and how a range of familiar New Zealand plants and animals live” (Ministry of Education, 1993b, p.58). Seafoods and their habitats were chosen as a context as it felt that this was important knowledge for the wider New Zealand community, and part of most students’ experience. This context also relies on knowledge and experience that goes beyond that of the school-based learning. It is likely that, for a number of students, it reflects ‘hands-on’ practice.

Students taught in the immersion setting generally performed better than their counterparts in the general education setting. However there were some anomalies here. Our feeling is that some students did not recognise the Māori names for the kai moana such as tāmure (snapper), kuku (mussel) and tuangi (cockle). English is the home language for many students who attend Māori Immersion schooling, yet the use of English terms in their classrooms is discouraged. If students are gaining the knowledge acquisition required for this task from outside-of-school sources, this could have a negative effect in this testing situation. Either students are not familiar with the Māori name provided on the tasksheet, or they could be reluctant to ‘code-switch’ by reverting to English words where they are unsure.

This is the only science task from the 1999 general education assessment where Māori students performed statistically significantly better than Non-Māori students, which implies this is an area of learning where Māori students may have more experience. However, this task is at the knowledge end of the higher order thinking skills taxonomy. The challenge for NEMP lies in developing “cognitively demanding and context-embedded” (Cummins, 2000) assessment tasks.

#### **Task 4: Powhiri**

“Powhiri” is a social studies task that was attempted by Year 4, Year 8 and Māori Immersion students. The task was conducted in the interview format.

For this activity, students were given a set of pictures showing people taking part in a welcoming ceremony on a marae. They were asked to put the pictures in an order and explain the ceremony to the interviewer. The marking schedule allowed for more than one correct answer, that is, there was not one particular order that was considered as the only correct ceremony. The results for this task are not presented here as the task will be reused in four years time as a link task. However, the results show that Year 8 students performed statistically significantly better than Year 4 students. Likewise, Māori students in immersion settings performed statistically significantly better than Māori students in the general education setting.

The idea for this task was proposed by a team of educators working in Māori Immersion education and believed to be particularly appropriate for students being educated in this setting. It is closely based on a similar task “Marae” that was used in the 1997 assessment of social studies. While the understanding of the welcoming ceremony can be considered particularly appropriate for students educated in a Māori Immersion setting, it is an important part of New Zealand’s cultural heritage, therefore it is appropriate to assess all students’ understandings of the process.

Māori students achieved better results in this task than their non-Māori counterparts. However, these results may not reflect the complexity of underlying factors. Students within mainstream may not have personal experience with this context, but have studied it as an ordered process of ritual with a recognisable start and finish. Māori students are more likely to have been involved in the living concept of “marae” that is an essential part of their culture. Being used to playing at your family marae is a totally different experience to learning about it at school as a social studies topic. Therefore, students answering this question may come from different perspectives: being an observer of an unfamiliar process, or being a participant in an integral part of a culture. The results reported by NEMP do not reveal that two students who may achieve the same score may be operating within quite different schema.

**Discussion:**

The introduction of assessment tasks in te reo Māori has brought new challenges for NEMP. Throughout the task development phase, validity issues are kept to the fore as the question is constantly asked “How well will the results really reflect the skills, knowledge, attitudes or other quality it is intended to assess?” (Flockton, 1999). Translating tasks into te reo Māori means that each task needs to be re-examined to try and ensure that there is equivalence in the complexity of the language used for the each version of a task. However, language equivalence is not the only issue affecting the validity of the tasks. Examination of the four tasks discussed in this paper has revealed a number of other issues.

A major issue of concern is the level of student proficiency in the language through which the assessments are mediated. Most students learning in the Māori Immersion setting are second language learners. Therefore, although a translated task may have be equivalent in terms of the language used, the students that are completing that task will not bring equivalent language skills to the text that they are given. It has been estimated it requires 500 hours of engagement to achieve basic conversational proficiency in a new language, each word requiring 20 exposures in 20 different situations, or over 400 experiences for proficiency (Hinton, 2002). Second-language learners, while they may appear to have conversational fluency, are being required to use academic language in an unfamiliar test setting. Thus, while a student may be perfectly capable of processing information to a complex degree, the limits of their developing second language may prevent their expression. Rather than engage in the risk-taking behaviour required to extend the language use, it appears that students tend to curb responses so that they fall within the range of well-known structures.

In order to lessen the reading and writing requirements of the assessment situations, NEMP uses the interview format for some of its tasks. However, this format may disadvantage the second language learner. Unfamiliar words can be easier to decode from a written format than a spoken one, the



opportunity to take the time needed to understand the word and to reread as often as required is removed when tasks are presented verbally. In the training of NEMP administrators, attention is given to ensure that they take the role of facilitator – an “interested listener” only, who makes no attempt to teach the student. Although the interviewer may assist the student by re-wording a statement or question, he or she is careful to offer none of the usual collaboration of conversation which develops a shared understanding.

NEMP uses a range of task formats in order to bring the assessment setting in line with common classroom practices. However the pedagogical practices mirrored are those of the Pakeha classroom. Students used to a didactic practice in their classroom, where they receive considerable teacher guidance and support, may not be comfortable with the interview setting, answering open-ended questions, sharing information without being sure it is the right answer, discussing with and, maybe, disagreeing the teacher.

While some of the assessment tasks each year require knowledge-based or recall answers, NEMP also tries to examine higher order thinking skills. Questions that reflect these skills require greater complexity in terms of the constructs of both the question and the responses. When the questioner asks for comparing and contrasting, synthesising or judging, the student may need to move from familiar language structures in order to express their answers. The student may be able to work through the skills and ideas required, but not have the fluency required to fully express them.

The translation of abstract concepts has proved particularly problematic for NEMP. In order to set assessment activities within real-life contexts, tasks in English can begin with the phrase “imagine that . . .”, or ask the student to introduce the element of “fun” to a response. These, and other abstract concepts are culturally located and cannot be readily translated at an equivalent level. Even when language equivalence is obtained for a task, there are times when the context-story of a task becomes more complex on translating.

Another issue for consideration when transferring tasks from an English to a Māori context is that of the language spoken in the home. While for the minority of students educated in the Māori Immersion setting the language of home will be Māori, the majority will experience the overwhelming monolingualism of the media, the community, peers and family. The opportunity to engage in te reo Māori beyond the school setting is extremely limited. Therefore, formal learning is based in the Māori language, but much of the informal, incidental learning is occurring in English. This mis-match can mean that the transfer of home experiences into the learning culture is not as straightforward.

There is an underlying assumption when transferring the assessment tasks to Māori that there is equivalent curriculum coverage in Māori Immersion settings and the general education settings. However, much of the focus for instruction in Kura Kaupapa Māori is on the acquisition of language and tikanga. Effort is also made to teach from a traditional perspective and focus on Māori contexts. Different focus in Maori Immersion means that we cannot assume a similar coverage of the curriculum areas.

The converse also needs consideration. Traditionally in the Pakeha system, Māori contexts have been taught in units. This practice and limited teacher knowledge can mean that the richness and diversity of practices is watered down into manageable units. Therefore the study of complex areas of Māori tikanga can be simplistically presented. Marae protocol, for example, can be taught as a one-off topic, divorced from practical experience, by teachers who are not familiar with the reality. This is at odds with the lived experience of those students located within the culture. When questions set in Maori context are developed with Pakeha students in mind, they can be asked as if there is a simple answer which can be confusing for Māori students.

The development of tasks and assessment procedures in NEMP are continually critically examined in order to improve practice. As each task is developed, validity issues are considered. The introduction of assessment in te reo Māori in 1999 has lead to further scrutiny as the linguistic and cultural

contexts of each task are examined to see how they affect student performance. There are a number of variables to be considered that are beyond outside of the control of the NEMP project. The consideration of these external factors needs to inform NEMP practice, and further development and understanding is needed. This paper has outlined some of the ways that NEMP has responded to these issues and acknowledges that the journey to perfecting the practice is far from over. The ongoing challenge remains that of finding the means of best cutting to the heartwood of what our students really know and can do.

## References

- Crooks, T., & Flockton, L. (2002). *Mathematics: Assessment results 2001*.  
Dunedin: Educational Assessment Research Unit.
- Cummins, J. (1984). *Bilingualism and special education: Issues in assessment and pedagogy*. Clevedon: Multilingual Matters.
- Cummins, J. (2000). *English in Europe: the acquisition of a third language*.  
Clevedon, England: Multilingual Matters.
- Flockton, L. (1999). *School-wide assessment: National Education Monitoring Project*. Wellington: New Zealand Council for Educational Research.
- Harlen, W. (1994). Enhancing quality in assessment. In BERA Policy Task Group on Assessment (Ed.). London: Paul Chapman Publishing Ltd.
- Hinton, L. (2002). *How to keep your language alive: A commonsense approach to one-on-one language learning*. Berkley, California: Heyday.
- Lacelle-Peterson, M. (2000). How assessment policies and practices obscure the education of language minority students. In A. Filer (Ed.), *Assessment: Social practice and social product*. London: Routledge and Falmer.
- Ministry of Education. (1993a). *The New Zealand Curriculum Framework*. Wellington: Learning Media.
- Ministry of Education. (1993b). *Science in the New Zealand Curriculum*. Wellington.
- Ministry of Education. (1996). *Pūtaiao i roto i Te Matauranga o Aotearoa*. Wellington.
- Pereira, J. (2002). Maori immersion students in the National Education Monitoring Project Part 2: Assessment of second-language and bilingual students. *Many Voices*(19), 4-11.