Literacy Acquisition, Assessment and Achievement of Year Two Students in Total Immersion in Māori Programmes

Cath Rau
Kia Aha Mai Educational Trust and School of Education, University of Waikato, Hamilton, New Zealand

One of the aims of Māori-medium education is to address Māori language loss. One of the challenges facing Māori-medium educators is to identify configurations that acknowledge the substantive importance of English language instruction without detracting from the priority that must be given to the regeneration of the Māori language. Issues relating to Māori/English bilingualism and assessment development in the New Zealand context are introduced and discussed in the light of local and international literature on language acquisition and other related fields. This paper also presents and compares the results of testing from 1995 and 2002–2003 using a reconstructed standardised assessment in literacy for Year 2 students in 80–100% immersion in Māori as a measure of literacy and Māori language acquisition.

Keywords: Māori-medium education, bilingualism, biliteracy, language acquisition, assessment

Introduction

Historical background

The current provision of bilingual education in New Zealand can be traced back to educational policies of the 1970s. Such policies reflected efforts by the government of the time to address and cater for the ethnic and cultural diversity of its ever expanding indigenous (Māori) population, as well as its settled and immigrant population. A multicultural approach was favoured to begin with, but was later replaced with a bicultural one in the 1980s when it became apparent to Māori, the indigenous people, that multiculturalism was merely a more subtle form of the assimilationist agenda characteristic of preceding governments (Bishop & Glynn, 1999; Jenkins, 1994; May, 2001). The multicultural approach placed all minority cultures, including Māori, into a large subordinate ethnic pool while preserving the dominance and superiority of the eurocentric (Pākehā) majority culture. Being merged into a wider ethnic mosaic made it more difficult for Māori to argue their entitlement to the protection, rights and privileges promised in the nation’s founding document, the Treaty of Waitangi, signed with the British Crown in 1840 (see May, this issue).

Initiatives such as taha Māori, where aspects of Māori language and culture were co-opted and injected into mainstream (English-medium) programmes,
were introduced into schools, beginning in the mid-1970s, to appease and quieten Māori demands for schools to provide such instruction (Jenkins, 1994). Delivered within a Westernised curriculum framework, and taught mainly in the English language, this initiative further cemented the majority culture as the reference point for defining minority cultures (Bishop et al., 1999; Jenkins, 1994; McMurchy-Pilkington, 2001), while the limited teaching of Māori language meant that any notions of Māori/English bilingualism remained a long way off. Taha Māori did, however, act as a mechanism for validating Māori language and culture, raising the consciousness of mainstream New Zealand to be more accepting of variations on standard (English language dominant) practices, while also providing traction for Māori to pursue a more visible language and cultural identity.

Adoption of a more bicultural perspective in the 1980s signalled an intention by the state to redirect its attention to, and focus its energies on, strengthening the relationship with Māori, as a treaty partner. Schools and bilingual units (classes within schools) became established during this period with the expectation that they would deliver the curriculum in Māori and English. Initiatives promoting and providing for Māori language instruction were becoming a matter of urgency as statistics revealed a language (and culture) in poor health and rapid decline. While an advancement on taha Māori programmes, this early bilingual movement has also been criticised as merely being a concession to Māori aspirations for self-determination (Jenkins, 1994). Catering predominantly for students long estranged from their own language and culture, as a result of over a 150 years of colonising processes, such programmes faced a difficult task, given that they were often ill-resourced and ill-prepared to cope with the demands of dual language instruction. This situation was magnified for total immersion units and schools attempting singular (Māori) language instruction, where resources and expertise were in even shorter supply. The fact that they were all still largely operating within existing structures and frameworks designed to support the majority Pākehā (European) and English language dominant culture was seen as a source of further impediment.

Coinciding with this period favouring a bicultural perspective was the emergence and proliferation of kōhanga reo (Māori language and culture preschools). This movement heralded an unprecedented surge in attempts by Māori to achieve some semblance of autonomy in education. Māori initiated and driven, kōhanga reo set about trying to provide optimum conditions for the regeneration of Māori language and culture. This included the restructuring of an educational institution along cultural lines (Bishop et al., 1999), maintaining control over operations and function by shunning state interference and targeting the exclusive use of Māori language as the means of communication, a difficult task given that they were staffed by predominantly second learners of the language with widely varying degrees of proficiency (Benton & Benton, 2000).

Parental demand that programmes cater for graduates from kōhanga reo left the primary school sector and subsequently the secondary school level ‘scrambling’ to cope, hence the subsequent growth of bilingual and Māori immersion units in these sectors. Early kōhanga reo and kura kaupapa Māori
were privately funded, demonstrating the commitment of those Māori involved in their own development. This was particularly significant given that, collectively, Māori are over-represented in lower socioeconomic indices. Kura kaupapa Māori were officially recognised as a legitimate schooling alternative in 1989 when they were incorporated into the state education system under the Education Amendment Act. They then became eligible for state funding.

Kura kaupapa Māori align closely with the philosophy and practices of kōhanga reo and, likewise, seek to develop a distinctly Māori educational environment (Smith, 1992). Te Aho Matua, the document that embodies and articulates the philosophy of kura kaupapa Māori (Smith, 1999), acknowledged the substantive importance of the English language, identifying Māori/English bilingualism as a desirable outcome for its participants.

The 1990s saw increasing numbers of students enrolled in Māori language programmes, with those numbers peaking in 1999. By 2001, approximately 25,000 primary school-aged students, including a small percentage of non-Māori, were participating in 430 schools (Ministry of Education, 2003). The vast majority of Māori, however, are still engaged in mainstream English language instruction, despite high levels of underachievement continuing to be recorded for this group.

Māori-medium education has become an umbrella term to describe the various schooling options operating in New Zealand where Māori language is used to deliver the curriculum (Hohepa, 1998). These options are, however, not necessarily available in all communities, or in all forms. Schools are funded at four levels, according to the extent to which Māori is the language of instruction; the higher the levels of immersion, the higher the level of funding. This range therefore includes programmes largely reminiscent of the taha Māori approach of the 1970s, with, at Level 4, less than 30% instruction in the Māori language, through to Level 1 total immersion units and schools, kura kaupapa Māori and hybrids of kura kaupapa Māori that choose not to be defined by the philosophical document Te Aho Matua. One of the desirable conditions for bilingualism is extended discourse in both of the languages of instruction (Baker, 2001; Cloud et al., 2000). The low levels of Māori language discourse in Level 4 Māori language programmes (less than 30%) makes bilingualism, where students are proficient enough in the Māori language to be able to function both communicatively and academically, an unlikely outcome. Such reasoning is consistent with Cummins’ threshold theory discussed in Baker (2001) and Garcia (2000), where critical levels of proficiency in the two target languages are required for learners to derive cognitive benefit.

Māori-medium education seeks to cater for students from the following language groups as identified by Rau et al. (2001) in a study that tracked the literacy achievement of Year 0 to Year 2 students in Māori immersion. The five groups are:

1. children for whom Māori is their first and only language;
2. children who have mixed competencies in more than two languages;
3. children who have dual proficiency in both English and Māori;
(4) children for whom English is their first language but who also have some competency in the Māori language; and
(5) children for whom English is their first and only language and who will begin their Māori language learning at school.

The constitution of these groups is the result of a combination of historical and more recent processes. Māori language loss was accelerated particularly after the Second World War when rapid urbanisation undermined Māori language communities (May, 2004; see also this issue). Despite this, small pockets throughout the country were able to preserve the language and many of the first language speakers of Māori that we have today are either from these communities or are descended from them. Other speakers of the language are the product of the language renaissance of more recent years, centred particularly on schools.

New entrants into Māori-medium programmes at five years of age thus tend to comprise mainly children from Groups 4 and 5 (as discussed above), with Group 5 children eventually moving into Group 4, usually as a result of time in a Māori language programme. In contrast, there are very few children for whom membership of the first two groups can be claimed, with even fewer to be found in Group 2. Māori-medium classrooms, therefore, can be every bit as diverse as English-medium classrooms. Not all enrolments come from kōhanga reo, where the Māori language is most likely to be acquired in preparation for school. Berryman (2001) reports that children with little Māori language proficiency can thus have a huge and immediate (negative) impact on Māori language development within those classes. State-funded schools are legislatively unable to regulate admissions, leaving Māori-medium contexts very sensitive to the language demographics of their student intake. This is just one of many factors, however, that contribute to the fragility of these programmes. Other challenges facing Māori-medium education are discussed in the following section.

Current Issues

The role of English

Māori immersion programmes are classified as heritage programmes, a hybrid of enrichment and maintenance language programmes which are identified as strong or additive forms of bilingual education (May et al., 2004; see also May & Hill, this issue). Such programmes aim for bilingualism and biliteracy as the language outcome (Baker, 2001; Garcia, 1997; Lindholm-Leary, 2001). Students in total immersion in Māori programmes are immersed from the outset in their second language, unlike most other minority language programmes where the first and stronger language is used to scaffold learning in the second. This is based on the circumstance that Māori is a threatened language and therefore the language in most need of support in the New Zealand context. Underpinned by an agenda that includes language rescue, Level 1 (81–100%) Māori immersion programmes, by their very nature, thus emphasise and prioritise Māori language acquisition over the provision of
instruction in the English language. Hornberger (1989: 287) provides additional linguistic rationale for the adoption of this approach when she states:

The findings that a stronger first language leads to a stronger second language do not necessarily imply that the first language must be fully developed before the second language is introduced simultaneously or successively, early or late in that process.

Māori-medium educators are currently grappling, however, with the challenge of providing effective English-medium instruction, without detracting from the fact that the regeneration of the Māori language is the first priority (see also Glynn et al., this issue). In the early period of Māori-medium education, immersion primary school programmes largely excluded English language instruction from the curriculum. This was based on the premise that the students were already first language (L1) speakers of English and that ongoing exposure to English only diminished time spent on immersing students in Māori. What was not being adequately catered for in this approach, however, was the development of academic language proficiency in English to enable graduates of these programmes to engage successfully with the demands of the curriculum, particularly beyond the primary school level. Many English-medium general stream intermediate and secondary schools responded by inappropriately placing these students into English language remedial classes, usually reserved for immigrant students with underdeveloped English language skills, upon their entry to English-medium secondary schools. This was most unfortunate as one of the key objectives of Māori-medium education is to address Māori underachievement, not contribute to it. This phenomena reflected poorly on the provision of education being offered in Māori-medium programmes in the eyes of parents and other educators and inevitably the general public at large, even though the deficit conceptions adopted by English-medium secondary schools are also partly responsible for these perceptions.

Some parents have responded by arranging and paying for private English language instruction. Others organise for the early and often premature withdrawal of their children from Māori immersion programmes and entry into English language programmes, particularly from about year four onwards. Wharekura (Māori-medium secondary schools attached to 80–100% Māori-medium primary schools) have also now been established, providing a smoother linguistic transition for students. This includes English language instruction, but leaves the bulk of the curriculum to be delivered still in Māori. The number of bilingual and immersion units at the intermediate and secondary school levels has also increased in recent years. Nonetheless, students’ language needs are still inadequately catered for in some instances.

While most primary school total immersion programmes now include English language instruction, they are still exploring ways to ensure that students achieve adequate thresholds of linguistic competence in both languages so that bilingualism and biliteracy are achieved. English language provision has budgetary implications for Māori-medium schools, as it usually requires that extra staff be employed to teach these classes if the key principle of separating the languages for effective teaching, as advocated in the wider
literature, is to be supported. However, there is very little preservice or in-service training or external support that prepares educators to teach English in total immersion environments. Geographical separation from colleagues makes it difficult to establish and maintain a network of support for the development of robust and effective pedagogy. McCaffrey et al. (1998) recommend the introduction of English instruction for students in Māori-medium somewhere after three to five years at the primary school level. This is consistent with the observation made by Baker (2001) that instruction in two languages on the international scene is taking place by Year 4. Many schools have not yet settled upon the optimum time to introduce students to English instruction nor what that instruction should comprise.

Berryman (2001; see also Glynn et al., this issue) presented a pathway of innovation for addressing pedagogical and resourcing issues faced by total immersion Māori-medium educators in managing the development of English literacy for their students. This was via a home–school intervention programme established to ‘transition’ Māori-medium students in Years 6–8 into academic English, by using parents as tutors. The study provided an indication that existing Māori immersion configurations can lead to high levels of achievement in English language. On a measure of reading using normative data generated from students in English-medium contexts, students who participated in the intervention were mostly scoring at age-appropriate levels and better by the end of the programme (see Glynn et al., this issue). This is indeed heartening given that literacy achievement levels for Māori students in English-medium programmes (where there is a direct alignment between home language and school language), using measures designed specifically for the medium of English, remain relatively low.

Māori Literacy and Links with Language Acquisition

Common to both L1 and L2 acquisition is the centrality of literacy acquisition (Baker, 2001; Bernhardt, 2000; Hamers & Blanc, 2000; Tabors & Snow, 2001). Māori, in the early days of European contact in the early 18th century, quickly adopted the print literacies of the West, where formerly an oral language tradition persisted (Irwin, 1994). Literature in Māori has phased in and out of focus since, with periods of high productivity interspersed with longer periods of relative low productivity. The use of reading and writing in Māori in classroom programmes for the regeneration of the Māori language has sometimes been contentious, as acknowledged by Benton & Benton (2000: 433), who state:

While some Maori nationalists and RLS (Reversing Language Shift) advocates have rejected literacy in Maori as an unwanted intrusion of pakeha [European] technology into the sacred core of Maori culture, in general, Maori educators have vigorously promoted the acquisition of literacy though Maori.

Te Aika (1997) warns, however, that care must be taken when modifying English language methodologies for an indigenous L2. This is based on the rationale that such methodologies are derived from and anchored in a Western
world view, the pedagogies and values of which can subsequently undermine and transform those of the indigenous language and culture. Conklin and Lourie (1983) state that one of the factors that encourages language maintenance is the standardisation of the target language in print to enable efficient production of literature. Increased production and distribution of printed matter in the Māori language, particularly in schools, has seen dialects replaced with literature that tends to be more pan-Māori in nature. Some tribal groups have responded by producing printed materials to preserve and regenerate those dialects. This has often proved to be a costly, time-consuming exercise, resulting often in only small numbers of titles being made available for use in schools. Māori are therefore faced with the sometimes unpalatable realisation that the survival of the language means that some of the elements associated with identity, such as dialect, may be compromised.

The relationship between literacy and language is further highlighted by Bernhardt (2000), who asserts that (generous and prolonged) exposure to literature in a language facilitates the production of more complex language structures and more sophisticated vocabulary in adult speakers. Tabors and Snow (2001) emphasise the importance of early language acquisition and the critical role that preschool experience plays in the development of precursor skills for literacy. Bernhardt (2000), Clay (1992), Cummins (1993), Wong-Filmore (1991) and Skutnabb-Kangas and Cummins (1988) all advocate that the easiest transition into literacy is achieved by becoming literate in the language of greatest strength. For most children entering Māori immersion programmes, however, this is English, which means that their initial formal literacy instruction is being undertaken in their weaker language. Extended periods of quality instruction in the target language of ideally eight years, as advocated by May et al. (2004), are therefore required if the benefits of learning in Māori are to accelerate the learning of academic registers in English.

Māori Language Assessment Development

Being able to demonstrate student achievement is a basic expectation in any education system. For Māori immersion programmes, this becomes a critical factor in providing evidence of the efficacy of these programmes.

Testing, as one measure of achievement, is acknowledged as an important means of articulating and developing descriptions of that achievement, and performs different functions for different stakeholders. In Māori-medium education, stakeholders include the New Zealand Ministry of Education, Māori-medium educators, the students and the students’ families (whānau). Cohen (1994) states that language testing assesses the results of language acquisition, while Bachman (1989) asserts that the field of language testing strives to describe language proficiency at any given stage of development. Further to this, Tabors and Snow (2000) state that children must demonstrate age-appropriate control over all aspects of the language system to be considered native speakers of that language. While achieving native-like proficiency in a second language is rare anyway (Garcia, 2000), the situation becomes more complicated for Māori-medium because what constitutes age appropriateness is being defined by L2 learners of Māori language who form
the large majority in Māori-medium education. Furthermore, models of Māori language are being provided by teachers who are often L2 speakers themselves.

All primary schools in New Zealand, including those offering Māori-medium programmes, are currently operating in an environment where demands to provide evidence of student achievement are ever increasing. The National Administration Guidelines, revised in 1993, ensure that priority is given to literacy and numeracy. Many of the initiatives funded by the New Zealand Ministry of Education are designed specifically to have these priorities realised.

This presents a special challenge for Māori-medium education, which compared to English-medium education is still in its infancy and remains relatively under resourced (Bishop et al., 2001; ERO, 2001; Rau & Berryman, 1999). According to Berryman et al. (2001), Hollings (1992) and the Ministry of Education (1999), little research has been conducted that is centred on the systematic collection and analysis of data charting students’ progress and achievement in the medium of Māori (see also May & Hill, this issue). This is symptomatic of a paucity of standardised assessment procedures developed specifically for use in Māori-medium programmes, as well as the limited access that schools and teachers have to any assessments that have already been developed (Rau et al. 2001). This makes the monitoring and evaluation of student performance and learning programmes difficult.

Māori-medium programmes, however, are still subject to and regulated by the same student performance compliances that apply to general (English-medium) education programmes, despite the fact that they have far fewer resources at their disposal, both human and material, to assist them to fulfil these obligations. The increased emphasis on accountability forces many schools to seek solutions that are compensatory at best, and often less than satisfactory. This includes translating into Māori standardised assessments developed by expert test constructors in English (see Bishop et al., 2001; Hollings, 1992). This is despite early cautioning about such practices by commentators such as Spolsky (1987: 25), who states: ‘One clear danger would be any attempt to translate existing instruments into Māori and assume any equivalence between the translated and the original.’

For Māori-medium education, this task is often carried out by teachers in individual schools, or within small clusters of schools, who are less expert and less experienced at (standardised) test construction. Wide variations in teacher fluency levels in the Māori language, and similarly varied knowledge of second language acquisition theory further complicates the situation. Completed translated assessments, and even copies of the work in progress, tend to circulate quickly around other schools, where often further changes and adaptations are made. Critical factors such as reliability and validity are often compromised or sacrificed in the process, rendering such measures less effective in capturing student achievement for comparison.

Schools with Māori-medium programmes, therefore, are currently limited to only three standardised assessment procedures that can be used to assist them in setting benchmarks for student achievement in literacy, unlike English-medium schools which have access to considerably more. This
includes a Māori language equivalent in the recently developed Assessment Tools For Teaching and Learning (asTTle) for Years 5–7 in New Zealand schools. A computer-based programme, asTTle enables teachers to devise pencil and paper tests in reading, writing and mathematics and regulate items for curricular content coverage and difficulty. Reports can be generated that comprise externally referenced information for making diagnostic, curriculum relevant, comparative and ipsative interpretations (Clarke et al., 2003).

Aromatawai-Urunga-ā-Kura (AKA), designed for Year 0 students, is the Māori language equivalent to School Entry Assessment (SEA) in English. This allows separate assessments to be made of a student’s concepts about print and oral language competency within the context of a story re-telling experience. The information can form the basis for planning appropriate programmes to meet the diverse language and learning needs of students in core literacy areas at entry to school (which occurs at age 5 in New Zealand). The National Education Monitoring project (NEMP) also samples students in English and Māori-medium using ‘parallel’ tests with Year 4 and Year 8 students (see also May & Hill, this issue). Probes into performance trends in each of the eight curriculum areas occur cyclically over a four-year period. Some of the assessment tasks are released at each phase and therefore are available for teachers to use.

The development of these assessments in Māori is characterised by the fact that they have shadowed and mimicked the development of the English language versions. While there is little argument that Māori-medium educators welcome access to assessment procedures, solutions for meeting these demands should not be confined exclusively to parallel, simultaneous development with English language initiatives. Indeed, extending the repertoire to include independent Māori-medium specific developments in assessment is highly desired by Māori-medium educators (Rau, 2004; Rau & Berryman, 1999; Rau et al., 2001). State funding, however, has prioritised parallel over independent development, for Māori-medium education. It would appear that English-medium education in New Zealand is the self-appointed exemplar for alternative educational provision such as Māori-medium education. This is highly ironic given that the lack of achievement of Māori students in the general or mainstream system is the source of much concern.

**Toward Some Independence in Māori Language Assessment Development**

Ngā Kete Kōrero research (1995), which organised student reading instructional material in Māori into increasing levels of difficulty, marked an important point in the development of literacy initiatives to support Māori-medium programmes. Under this project, a framework for organising material has been developed that incorporates Māori symbolism and reflects culturally and language context referenced understandings of learning and assessment (see also Glynn et al., this issue). It is conceptually different from how student achievement in reading in New Zealand English language programmes is expressed. Identifying a student’s reading age and comparing this with
chronological age has been standard practice in English-medium classrooms in New Zealand since the 1960s. In Ngā Kete Kōrero, a student is assigned a level. This level is identified from calculations and judgements made on a student’s performance against reading material.

Prior to this research, reading material in Māori was unlevelled. Teachers, in their desire to make better matches between reading material and learner needs, developed their own levelling systems which invariably differed from one school to the next. This meant it was very difficult to establish shared understandings about student achievement across Māori-medium literacy programmes because the markers against which achievement could be measured were so inconsistent. Devising a common system of levelling and applying this to material has also meant that one of the ways that teachers can now describe student progress is in terms of the gains made in reading level.

For at least 10 years prior to this, various Māori versions of Marie Clay’s comprehensive assessment procedure, the six-year net (now known as an Observation Survey of Early Literacy Achievement), had emerged. Two groups of teachers combined forces and, with Clay’s guidance, set about producing an official Māori version, supported by funding from an external (nongovernment) agency. The project had, however, reached an impasse in 1994 as the successful completion of one of the major tasks (text reading) was contingent upon reading material in Māori being levelled. This required organising reading material into increasing levels of difficulty for instruction. At the same time, Ngā Kete Kōrero research required a robust assessment procedure in Māori to assist with decisions about the difficulty level of reading material. Consequently, the two project teams were able to synchronise their activities and work cooperatively to achieve their respective goals.

Completion of He Mātai Āta Titiro ki te Tūtukitanga Mātātupu, Pānui Tuhi (He Mātai Mātātupu), the official reconstruction of Marie Clay’s Observation Survey of Early Literacy Achievement, culminated in the publication of the assessment manuals and test booklets in 1998. Of those already listed for Māori-medium education, it is the only assessment that was initiated by Māori and developed independently of any Ministry of Education agenda or policy. Access to the assessment, however, has been limited, largely because the developers believe that comprehensive professional development for teachers is critical for effective implementation. This has not been possible until recently.

In 2002–03, a Ministry of Education-funded pilot initiative, called Ngā Taumatua, provided intensive professional development to resource teachers of Māori in the administration and use of this procedure as part of a larger training programme focussing on Māori-medium specific literacy initiatives. Part of their course requirements involved submitting assessment results from He Mātai Mātātupu testing of students in 81–100% immersion programmes to a central data base. This has provided a unique opportunity to analyse and reflect upon the performance of a group of students upon which normative information was collected in 1995, with a different but comparable group of students in 2002–03.

The remainder of this paper focuses on describing the assessment tasks from He Mātai Mātātupu, and presenting, comparing and theorising about the
results for the group of students assessed in 1995 and those assessed in 2002–03. These results will then be discussed in light of issues that revolve around language acquisition in Māori immersion settings.

**Methodology**

**Description of the assessment**

He Mātai Mātātupu comprises six tasks that assess reading and writing. It takes approximately 40 minutes per student to administer. The six tasks are presented in Table 1.

He Mātai Mātātupu is a reconstruction (rather than a translation) in Māori of the original work developed in English by Marie Clay (Rau, 1998). Like its English language counterpart, each of the six tasks provides singular information about student performance after a minimum one year of instruction in Māori. Analysing performance across tasks, however, provides a more comprehensive picture of student achievement.

**Participants**

**Students**

Student participants from both the 1995 and the 2002–03 research were drawn from Level 1 (81–100%) Māori immersion programmes. The 1995 sample comprised 111 students, whose ages ranged from 6.0 to 7.0 years (refer to Table 2 for the number and location of the participant schools). The results for only 97 of the original 111 were retrievable due to data storage problems and so this analysis is based on a sample size of 97 for 1995. Testing took place over a period of five months from June to November 1995.

The 2002/2003 sample comprised 100 students aged 6.0–7.0. With the inclusion of four new areas, this testing point provided a more representative sample of the country than that of the first (refer to Table 3). Testing covered a period of about seven months from September 2002 to April 2003.

Students who had been receiving literacy instruction in Māori at school for at least one year were included in the sample on both occasions. This was established as a necessary condition for the 1995 testing, as some students entering 81–100% Māori immersion programmes over the course of the year had previously only participated in English-medium programmes. It was thus deemed inappropriate and unfair to test students who had had less opportunity for literacy learning in the targeted language (Māori) and to compare their performance with that of their newly acquired cohort group (Rau, 1998).

**Assessors**

In 1995, He Mātai Mātātupu assessments were administered by a mixture of the teachers of the Year 2 students in each of the six participating schools as well as other professionals attached to those schools, either as a resource teacher of Māori or as a researcher. Data for 2002–03 were collected by 11 participants in the Ministry of Education’s Ngā Taumatua pilot programme, who were trained in the procedures. Training was provided by expert
<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>Maximum score</th>
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<tbody>
<tr>
<td>Te tātu reta (letter identification)</td>
<td>The student is presented with the upper and lower case letters of the Māori alphabet and asked to identify them by name, or by sound, or by providing a word beginning with that letter.</td>
<td>33</td>
</tr>
<tr>
<td>Te whakamātautau kupu (word recognition)</td>
<td>The student is presented with one of three lists of high frequency Māori words and is asked to read them in turn. A response is marked correct if the student reads each word immediately (i.e. without hesitation and without attempting to decode the word).</td>
<td>15</td>
</tr>
<tr>
<td>Te tuhi kupu (writing vocabulary)</td>
<td>The student is given a maximum of 10 minutes (timed) to record all the Māori words s/he knows how to write. Prompts are provided by the assessor to keep the student generating words. Credit is given for every word spelt correctly. Approximations for words are not scored.</td>
<td>no limit</td>
</tr>
<tr>
<td>Whakarongo, tuhia ngā tangi o roto i ngā kupu (hearing and recording the sounds in words)</td>
<td>One of five short passages of continuous Māori text is dictated and the student is required to record in writing what s/he hears. Credit is given for each sound recorded correctly.</td>
<td>41</td>
</tr>
<tr>
<td>Ngā tikanga o te tuhi kōrero (concepts about print)</td>
<td>The assessor reads one of two stories to the student who is asked to identify or demonstrate knowledge of conventions and concepts about print for Māori texts.</td>
<td>24</td>
</tr>
<tr>
<td>Te pānui tuhinga (text reading)</td>
<td>The student reads three texts, one each at an easy, instructional and a difficult level. The error rate, accuracy percentage and self correction rate are calculated from the student's oral reading of each text. Errors and self corrections are analysed to determine what cues (meaning, knowledge of language structure, visual information) the student may have used or neglected.</td>
<td>12 levels (from emergent to fluency)</td>
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administrators, who observed the learner administrators practising with students. Further tuition and practice followed by more observations by expert administrators continued until a high level of competency was reached, as determined by those expert administrators.

**Research questions**

This study set out to answer the following questions:

1. Are there differences between the two age groups (6.0–6.5 and 6.6–7.0) in regard to the average scores on the six tasks of He Māta Mātātupu?
2. Are there differences between the two groups (1995 and 2002/03) in regard to the average scores on the six tasks of He Māta Mātātupu?
3. Are there differences between the two gender groups (male and female) in regard to the average scores on the six tasks of He Māta Mātātupu?

**Results**

**Comparing student scores across tasks**

Student data have been organised into two age bands – 6.0–6.5 years of age and 6.6–7.0 years of age. This allows for comparison in student performance according to length of time in a Māori-medium literacy programme; that is, zero to five months and six months to one year respectively. Results for boys and girls have also been presented separately to allow some comparison on performance based on gender.

In the 1995 research, raw student data for each of the assessment tasks were transformed into quartile scores. Conversion to quartiles scores provides a means of comparing performance across different tasks, even though the total

<table>
<thead>
<tr>
<th>No. of schools</th>
<th>Location of schools</th>
<th>No. of students</th>
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<tbody>
<tr>
<td>1</td>
<td>Auckland</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Waikato</td>
<td>53</td>
</tr>
<tr>
<td>2</td>
<td>East Coast</td>
<td>34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of schools</th>
<th>Location of schools</th>
<th>No. of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Auckland</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>Waikato/Bay of Plenty</td>
<td>28</td>
</tr>
<tr>
<td>3</td>
<td>East Coast/Hawkes Bay</td>
<td>32</td>
</tr>
<tr>
<td>4</td>
<td>Wellington/Southland</td>
<td>24</td>
</tr>
</tbody>
</table>
Results of Total Immersion in Māori Programmes

raw score possible for each respective task differs. For example, te tāutu reta (letter identification) is out of a total 33, while te tuhi kupu (correct recording of words) is out of at least 65. Conversion to quartile scores means that a quartile score of four in te tāutu reta can be directly compared with a quartile score of four in te tuhi kupu.

For the purposes of this paper, however, the comparative results are reported as average scores (rather than quartile scores) for each of the six assessment tasks. This was deemed more appropriate in this instance as major gains in test score are required in order to effect change to quartile score (Rau, 1998). It is possible, therefore, that differences in performance between the two time periods, 1995 and 2002–03, might not register if the grosser measurement (quartile score) has been applied to measure difference.

For example, in the 1995 sample, the average score for students aged 6.0–6.5 years on the letter identification (te tautu reta) task was 22.8, which equates to a quartile score of two. There was an increase in the average score of students of the same age band from 22.8 in 2002–03 to 29.2 in 1995, a difference of six items. The average score for the latter sample, however, still equates to a quartile score of two.

Similarly, the use of quartile scores might not capture differences in scores between younger and older age bands in the same time period.

For example, in the 2002–03 sample, girls aged 6.0–6.5 years on average scored 27.9 out of a total 41, which equates to a quartile score of two for the hearing and recording the sounds in words task (whakarongo, tuhia ngā tangi o roto i ngā kupu). Girls aged 6.6–7.0 years on average scored 33.7, which also equates to a quartile score of two on the same task. No change in quartile score occurs even though (on average) girls in the older age band are recording approximately six more letters for sounds in that task than their younger counterparts.

Comparing student scores across time

Results for students aged 6.0–7.0 years in the 1995 sample are compared with results of students aged 6.0–7.0 years in the 2002–03 sample.

Each of the six tasks will be treated in turn. The results for each task described previously in Table 1 are presented and analysed. The tables for the 1995 sample report on a total of 97 students and include 36 students aged 6.0–6.5 years (17 boys and 19 girls) and 61 students aged 6.6–7.0 years (20 boys and 41 girls). The tables for the 2002–03 sample report on a total of 100 students, with 45 aged 6.0–6.5 years (27 boys and 18 girls) and 55 students aged 6.6–7.0 years (23 boys and 32 girls).

Te tāutu reta (letter identification)

Data in Table 4 show that there are small increases in te tāutu reta scores from the 1995 sample to the 2002–03 sample for both age bands. Within each sample, the older age band scored higher than the lower age band except for the 2002–03 sample of girls, where the average score remained virtually the same. Increases might be expected as a result of longer time spent in Māori immersion programmes. The scores for the 2002–03 sample of girls might be a
result of scores approaching ceiling levels. Differences based upon gender are minimal (boys and girls scores differ by no more than two items). Average scores for students aged 6.6–7.0 years in 1995 and students in both age bands in 2002–03 are approaching ceiling levels. This is a possible explanation for the smaller increases in score recorded in 2002–03 and also means that this task would yield less useful information if administered to students older than 7.0 years.

**Te whakamātautau kupu (word recognition)**

Data in Table 5 show that there are increases in te whakamātautau kupu scores from the 1995 sample to the 2002–03 sample for both age bands. Within each sample, the older age band scored higher than the lower age band, as might be expected as a result of longer time spent in Māori immersion programmes. Differences based upon gender are minimal (boys and girls scores differ by no more than two items). On the basis of progress in the two samples (1995 and 2002–03), most of the students will have reached ceiling in the next six months. This means that this task would be less useful for measuring progress with students older than 7.6 years of age.

**Te tuhi kupu (writing vocabulary)**

Data in Table 6 show increases in te tuhi kupu scores from the 1995 sample to the 2002–03 sample for both age bands. Within each sample, the older age band scored higher than the lower age band, as might be expected as a result of longer time spent in Māori immersion programmes. Girls in the older age bands for both the 1995 and 2002–03...
samples scored higher than boys of the same age in this task. Differences between boys and girls in the younger age band for both samples were minimal.

Results range from 1.7 words to 2.5 words written correctly per minute, which might appear to be a low rate of recording. For this task, however, only correct spelling of the word counts. Students more often than not recorded more words than were reflected in the scores. As the task has no maximum score, it can be used with students older than 7.0 years of age.

**Whakarongo, tuhia nga tangi o roto i ngā kupu (hearing and recording the sounds in words)**

Data in Table 7 show that there are increases in the scores for whakarongo, tuhia nga tangi o roto i ngā kupu from the 1995 sample to the 2002–03 sample for both age bands. In the 1995 sample, boys aged 6.0–6.5 years scored slightly higher than boys aged 6.6–7.0 years. Within the remaining samples, the older age band scored higher than the lower age band. While there is no obvious explanation for the 1995 data for boys, the remaining data are as might be expected from longer time spent in Māori immersion programmes.

Differences based upon gender are minimal for boys and girls in the 2002–03 sample. The results for boys and girls in 1995 show a crossover effect (where boys aged 6.0–6.5 years scored higher than girls aged 6.0–6.5 years, and then the reverse occurred where girls aged 6.6–7.0 scored higher than boys aged 6.6–7.0 in 2002–03). There is no obvious explanation for this phenomenon.

There is still scope to use this task with students older than 7.0 years of age.

---

**Table 6** Average scores for te tuhi kupu for Year 2 students in 80–100% Māori immersion literacy programmes in 1995 and 2002–03

<table>
<thead>
<tr>
<th>No maximum</th>
<th>1995 sample</th>
<th>2002–03 sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age band</td>
<td>6.0–6.5</td>
<td>6.6–7.0</td>
</tr>
<tr>
<td>Boy average</td>
<td>18.1</td>
<td>20.3</td>
</tr>
<tr>
<td>Girl average</td>
<td>16.0</td>
<td>27.7</td>
</tr>
<tr>
<td>Boy + girl average</td>
<td>17.1</td>
<td>24.0</td>
</tr>
</tbody>
</table>

---

**Table 7** Average scores for whakarongo, tuhia nga tangi o roto i ngā kupu for Year 2 students in 80–100% Māori immersion literacy programmes in 1995 and 2002–03

<table>
<thead>
<tr>
<th>Maximum score = 41</th>
<th>1995 sample</th>
<th>2002–03 sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age band</td>
<td>6.0–6.5</td>
<td>6.6–7.0</td>
</tr>
<tr>
<td>Boy average</td>
<td>26.6</td>
<td>26.1</td>
</tr>
<tr>
<td>Girl average</td>
<td>19.7</td>
<td>31.9</td>
</tr>
<tr>
<td>Boy + girl average</td>
<td>23.2</td>
<td>29.0</td>
</tr>
</tbody>
</table>
Data in Table 8 indicate that there are increases in te tikanga o te tuhi kōrero scores from the 1995 sample to the 2002–03 sample. Within each sample, the older age band scored higher than the lower age band, as might be expected as a result of longer time spent in Māori immersion programmes.

Differences based upon gender are minimal (boys and girls scores differ by no more than one item). Ngā tikanga o te tuhi kōrero is a more complex task than the previous tasks, as it taps a broader knowledge base. Any increases in score for nga tikanga o te tuhi kōrero are therefore more substantive for this task. There is still scope to use this task with students older than 7.0 years of age to measure achievement, as ceiling levels are not yet being consistently met.

### Te pānui tuhinga (text reading)

**Results**

Reading levels in Māori, as identified in Ngā Kete Kōrero research (1995), are denoted by kete9 (flax baskets). With increasing difficulty levels, the materials used to ‘weave’ the kete change, with each material denoting a different level. Letters are used along with the kete material to identify sublevel. Four levels, and twelve sublevels in total, have been identified in Ngā Kete Kōrero. Change in level is more substantive than change in sublevel. In order to be able to identify average levels achieved by students in each age band, and for the purposes of this analysis, each sublevel has been allocated a numerical value from 1 to 12.

<table>
<thead>
<tr>
<th>Assigned numerical value</th>
<th>Equivalent Ngā Kete Kōrero level</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Whenu Harakeke</td>
<td>WH</td>
</tr>
<tr>
<td>2</td>
<td>Kete Harakeke A</td>
<td>KHa</td>
</tr>
<tr>
<td>3</td>
<td>Kete Harakeke E</td>
<td>KHe</td>
</tr>
<tr>
<td>4</td>
<td>Kete Harakeke I</td>
<td>KHi</td>
</tr>
<tr>
<td>5</td>
<td>Kete Kiekie A</td>
<td>KKa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 8</th>
<th>Average scores for nga tikanga o te tuhi kōrero for Year 2 students in 80–100% Māori immersion literacy programmes in 1995 and 2002–03</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age band</td>
<td>1995 sample</td>
</tr>
<tr>
<td>Boy average</td>
<td>11.4 12.2</td>
</tr>
<tr>
<td>Girl average</td>
<td>12.3 13.4</td>
</tr>
<tr>
<td>Boy + girl average</td>
<td>11.8 12.8</td>
</tr>
</tbody>
</table>

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9. Kete is a Māori word for a basket used in weaving. It is also used in the context of literacy programs to denote levels of reading proficiency.
Results of Total Immersion in Māori Programmes

<table>
<thead>
<tr>
<th>Assigned numerical value</th>
<th>Equivalent Ngā Kete Kōrero level</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Kete Kiekie E</td>
<td>KKe</td>
</tr>
<tr>
<td>7</td>
<td>Kete Kiekie I</td>
<td>KKi</td>
</tr>
<tr>
<td>8</td>
<td>Kete Pāngao A</td>
<td>KPa</td>
</tr>
<tr>
<td>9</td>
<td>Kete Pāngao E</td>
<td>KPe</td>
</tr>
<tr>
<td>10</td>
<td>Kete Pāngao I</td>
<td>KPi</td>
</tr>
<tr>
<td>11</td>
<td>Kete Pāngao O</td>
<td>KPo</td>
</tr>
<tr>
<td>12</td>
<td>Miro</td>
<td>Miro</td>
</tr>
</tbody>
</table>

Analysis

Data in Table 9 indicate little change in Ngā Kete Kōrero reading instructional sublevel or level from the 1995 sample to the 2002–03 sample for both age bands, except for boys in 2002–03, whose reading instructional level differed from boys in 1995 by one sublevel.

Within each sample, the older age band achieved a higher reading instructional sublevel or level than the lower age band, although differences for boys in 1995 and girls in 2002–03 was minimal (half a sublevel). Gains in reading instructional level might be expected as a result of longer time spent in Māori immersion programmes.

Differences based upon gender are minimal (boys and girls differ in reading instructional level by no more than one sublevel).

Analysing student scores

Data were analysed using the Statistical Package for the Social Sciences (SPSS). An Analysis of Variance (ANOVA) was conducted because the hypotheses compare two groups. There are two categorical independent variables. There was one continuous dependent variable with normal distribution for each ANOVA conducted. There were no covariates. Therefore, Creswell (2002) argues that the ANOVA analysis is appropriate.

Table 9 Average ngā kete kōrero reading instructional levels Year 2 students in 80–100% Māori immersion literacy programmes in 1995 and 2002–03

<table>
<thead>
<tr>
<th>Maximum level 12</th>
<th>1995 sample</th>
<th>2002–03 sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age band</td>
<td>6.0–6.5</td>
<td>6.6–7.0</td>
</tr>
<tr>
<td>Boy average</td>
<td>4.4 KHi</td>
<td>4.9 KKa</td>
</tr>
<tr>
<td>Girl average</td>
<td>4.5 KHi/Kka</td>
<td>6.1 KKe</td>
</tr>
<tr>
<td>Boy + girl average</td>
<td>4.5 KHi/KKa</td>
<td>5.5 KKa/KKe</td>
</tr>
</tbody>
</table>
Because of the nature of the scores for the six tasks, it was difficult to
determine if SPSS would treat the scores as continuous or categorical data.
Therefore, in addition to ANOVA, Chi-square analyses of the data were
conducted. Alpha for all calculations was set at $p \leq 0.05$.

The analyses of variance (ANOVA) revealed statistically significant differ-
ences between the two age groups (6.0–6.5 and 6.6–7.0) for the following tasks
of He Māta Mātātupu: (a) te tautu reta $F(1,194) = 10.68, p = 0.001$; (b) te
whakamātautau kupu $F(1,194) = 5.99, p = 0.006$; (c) te tuhi kupu
$F(1,194) = 7.87, p = 0.006$; (d) whakarongo, tuhia ngā tangi o roto i ngā kupu
$F(1,194) = 10.07, p = 0.002$; (e) nga tikanga o te tuhi kōrero $F(1,194) = 10.68,$
$p = 0.001$; and (f) te pānui tuhinga $F(1,193) = 12.94, p = 0.000$. The means and
standard deviations are presented in Table 10.

The analyses of variance (ANOVA) revealed statistically significant differ-
ences between the two year groups (1995 and 2002/2003) for the following
tasks of He Māta Mātātupu: (a) te tāutu reta $F(1,194) = 11.49, p = 0.001$; and

Table 10 One-way analysis of variance of mean scores of he Māta Mātātupu tasks by
age group

<table>
<thead>
<tr>
<th>Tasks</th>
<th>n</th>
<th>M</th>
<th>sd</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Te tāutu reta</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0–6.5</td>
<td>81</td>
<td>12.16</td>
<td>4.07</td>
<td>10.68</td>
<td>0.001</td>
</tr>
<tr>
<td>6.6–7.0</td>
<td>115</td>
<td>14.23</td>
<td>4.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Te whakamatautau kupu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0–6.5</td>
<td>81</td>
<td>7.48</td>
<td>6.57</td>
<td>5.99</td>
<td>0.006</td>
</tr>
<tr>
<td>6.6–7.0</td>
<td>115</td>
<td>9.63</td>
<td>5.64</td>
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<tr>
<td>Te tuhi kupu</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0–6.5</td>
<td>81</td>
<td>19.06</td>
<td>14.41</td>
<td>7.87</td>
<td>0.006</td>
</tr>
<tr>
<td>6.6–7.0</td>
<td>115</td>
<td>25.33</td>
<td>16.06</td>
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</tr>
<tr>
<td>Whakarongo, tuhia ngā tangi o roto i ngā kupu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0–6.5</td>
<td>81</td>
<td>25.70</td>
<td>14.81</td>
<td>10.07</td>
<td>0.002</td>
</tr>
<tr>
<td>6.6–7.0</td>
<td>115</td>
<td>31.83</td>
<td>12.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ngā tikanga o te tuhi kōrero</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0–6.5</td>
<td>81</td>
<td>12.16</td>
<td>4.07</td>
<td>10.68</td>
<td>0.001</td>
</tr>
<tr>
<td>6.6–7.0</td>
<td>115</td>
<td>14.22</td>
<td>4.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Te pānui tuhinga</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0–6.5</td>
<td>80</td>
<td>4.66</td>
<td>2.43</td>
<td>12.94</td>
<td>0.000</td>
</tr>
<tr>
<td>6.6–7.0</td>
<td>115</td>
<td>5.93</td>
<td>2.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(b) te whakamātautau kupu $F(1,194) = 10.11$, $p = 0.002$. The means and standard deviations are presented in Table 11.

The analyses of variance (ANOVA) revealed statistically significant differences between the two gender groups for the following task of He Mātai Mātātupu: te tuhi kupu $F(1,194) = 5.35$, $p = 0.022$. The means and standard deviations are presented in Table 12.

Chi-square analyses of the data revealed statistically significant differences between the two year groups (1995 and 2002/2003) for the following tasks of He Mātai Mātātupu: (a) nga tikanga o te tuhi kōrero Pearson Chi-Square = 35.595, $df = 22$, $p = 0.034$; Phi = 0.426, $p = 0.034$; and (b) te panui tūhinga Pearson Chi-Square = 30.951, $df = 11$, $p = 0.001$; Phi = 0.398, $p = 0.001$. The means and standard deviations are presented in Table 13.

Chi-square analyses of the data revealed statistically significant differences between the two gender groups for the following task of He Mātai Mātātupu: te whakamātautau kupu Pearson Chi-Square = 26.655, $df = 16$, $p = 0.045$; Phi = 0.369, $p = 0.045$. The means and standard deviations are presented in Table 14.

**Discussion**

(1) Students in the 2002–03 age band consistently achieved higher average scores than students in 1995 across five of the six tasks and significantly better in four out of the six tasks. The only variation on this pattern
occurred in just one instance (out of a possible 24), when data were presented in order to make comparisons based on gender. In the sixth task (text reading), reading levels remained virtually the same for the two points in time. Analyses of the data revealed statistically significant differences between the two year groups on the test scores for four tasks of He Māta Mātātupu: te tāutu reta, te whakamātātautau kupu, nga tikanga o te tuhi korero and te pānui tuhinga. The 2002/2003 group consistently performed at a higher level than the 1995 group.

(2) Students in the older age bands consistently achieved higher average scores than the younger age band on all tasks for both the 1995 sample and the 2002–03 sample. Variations on this pattern occurred in only two instances (out of a possible 24), when data were presented in order to make comparisons based on gender. Analyses of the data revealed statistically significant differences between the two age groups on the test scores for all six tasks of He Māta Mātātupu. The 6.6–7.0 age group consistently performed at higher levels than the 6.0–6.5 age group.

(3) Based on average scores, overall, there was little difference between the performance of boys and the performance of girls for both the 1995 and 2002–03 samples. Analyses of the data revealed statistically significant differences between the two gender groups on the test scores for only two tasks of He Māta Mātātupu: te whakamātātautau kupu and te tuhi kupu. The girls consistently performed at a higher level than the boys in these tasks.

(4) Certain tasks in He Māta Mātātupu appear to carry more weight (that is, nga tikanga o te tuhi korero, te tuhi kupu and te pānui tuhinga) so changes in score for these tasks represent more substantial change.

<table>
<thead>
<tr>
<th>Table 13</th>
<th>Chi-square analysis of mean scores of He Māta Mātātupu by group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasks</td>
<td>n</td>
</tr>
<tr>
<td>Nga tikanga o te tuhi korero</td>
<td>1995</td>
</tr>
<tr>
<td></td>
<td>2002/2003</td>
</tr>
<tr>
<td>Te pānui tuhinga</td>
<td>1995</td>
</tr>
<tr>
<td></td>
<td>2002/2003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 14</th>
<th>Chi-square analysis of mean scores of He Māta Mātātupu by gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasks</td>
<td>n</td>
</tr>
<tr>
<td>Te whakamātātautau kupu</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Female</td>
</tr>
</tbody>
</table>
For the older age band, 6.6–7.0 years, scores were approaching ceiling levels for two of the six tasks (that is, te tāutu reta and te whakamātutau kupu). The four remaining tasks could however be used to measure further progress beyond this age band.

Administering the standardised assessment procedure He Mātāi Āta Titiro ki te Tūtikitanga Mātātupu, Pānui Tuhi (He Mātai Mātātupu) in 2002–03 to students in 80–100% total immersion Māori programmes has provided a unique opportunity to compare student performance with a comparable group of students from 1995.

According to Rau (1998), the main purposes of this assessment are to observe the literacy achievement of students after at least one year of instruction, to identify those experiencing difficulty and to provide information about the classroom programme.

He Mātai Mātātupu assessment and professional development in its administration and use are yet to be made widely available to teachers in Māori-medium education. Some teachers are, however, either using earlier drafts of the assessment or various other versions of the procedure that they have sourced from someone else, or developed themselves. These earlier versions do not provide normative information upon which teachers can evaluate student performance and base decisions about classroom instruction.

Teachers do, however, have only limited access to components of He Mātai Mātātupu, as a result of factors such as a shortage of skilled personnel who can either support teachers with administration or who can extend their use of the assessment beyond this initial stage. Pressure to deliver programmes effectively in all curriculum areas, despite the fact that pedagogies for Māori-medium are still only emerging and evolving, also make it difficult for teachers and schools to make literacy a priority.

The tikanga o te tuhi kōrero (concepts about print) assessment task was reproduced for the entry assessment Aromatawai-Urunga-a-Kura in 1997, to be used with new entrant [reception] students. Pānui haere have also been developed for everyday classroom use from the pūkete pānui haere (text reading) assessment task. While draft copies of the assessment manual have been in circulation since 1999, the delivery and maintenance of professional development to teachers in this procedure has also tended to be piecemeal and sporadic.

Analyses of the data demonstrate that, as to be expected, the older age band of students (6.6–7.0) scored significantly higher than the younger age band of students (6.0–6.5). The 2002–03 group of students scored significantly higher than the 1995 group of students. What is also interesting is that boys are doing as well as girls on most of the tasks in He Mātai Mātātupu. This is in contrast to what has been historically reported about girls and boys across numerous literacy measures within English-medium programmes in New Zealand.

It is quite possible that even higher differences in scores between the 1995 group of students and the 2002–03 group of students may have been achieved had teachers had access to the assessment procedure during the seven-year period from 1995 when the first set of data were collected. Rau (1998: 13) reports that the primary function of the assessment procedure is to assist
teachers to learn about children’s literacy behaviour, identify children experiencing difficulties, and provide appropriate support by targeting identified areas, as well as provide feedback about the effectiveness of the literacy programme.

The results from the two data points serve as an external measure of the impact of literacy initiatives introduced to support Māori-medium education during this seven-year period. They also reflect burgeoning Māori language acquisition and development.

The higher scores of students in 2002–03 compared to a 1995 group of students across nearly all tasks may be attributable to a range of factors, including increased support for Māori-medium programmes, particularly since 1998. These include the:

(1) Development and promulgation of Ngā Kete Kōrero: Framework. This research project organised reading material in Māori according to increasing levels of difficulty. Teachers can therefore make better matches between material and learner needs. This framework also provided a means to quantify student progress in terms of gains made in reading instructional level (Berryman et al., 2001).

(2) Increased quantity and improved quality of reading instructional material available (Bishop et al., 2001; Hohepa & Smith, 1996; Ministry of Maori Development, 2001).

(3) Increased recognition and development of epistemology and pedagogy for Māori-medium contexts (Bishop et al., 2001) as a result of research undertaken by various individuals and organisations.

(4) The increased provision of Māori-medium-specific professional development in literacy for teachers.

(5) Inclusion of some second language acquisition theory and practice into preservice teacher training and teacher professional development in-service. There is now a more widespread recognition that teachers need to be trained to carry out the complex range of tasks involved in language teaching (Johnston & Rolleston, 2001: 22; see also May et al., 2004).

(6) Ongoing commitment and dedication of Māori-medium teachers, who continue to strive toward improving ways of learning and teaching and raising Māori achievement in the face of extreme demands and often overwhelming expectations.

It is also possible to argue, however, that the benefits of these initiatives may have been offset by the following factors.

(1) Māori-medium education is still recovering from the impact of over a decade of educational reform, which, according to MacPherson (1998), is the most profound in New Zealand’s history. Of course, English-medium education was also subjected to this period of ‘upheaval’ but did not have the added pressure of having to establish itself as a legitimate alternative schooling option at the same time.

(2) The introduction of linguistically challenging curriculum documents in Māori within a relatively short space of time (seven in five years) rendered their effective implementation difficult for Māori-medium education.
Literacy is often competing with other curriculum areas for priority within schools (Bishop & Tiakiwai, 2000; Bishop et al., 2001; Rau et al., 2001). Even more concerning, according to Appleby (2001: 112), is the growing disquiet among Māori-medium educators that the national curriculum statements 'offer little opportunity for authentic Māori learning and teaching'.

(3) Literacy priorities identified for English-medium education have tended to determine those for Māori-medium education (Rau et al., 2001). Past and continuing policies that promote parallel development appear to be driven by the assumption that resulting initiatives are automatically addressing the most urgent priorities for Māori-medium education. This approach undermines Māori aspirations for self-determination and threatens the further development of authentic Māori epistemology and pedagogy. The development of programmes and pedagogies that derive from and represent a legitimate Māori worldview is the approach preferred by Māori-medium educators.

(4) There are high levels of teacher mobility reported for Māori-medium. Statistics are yet to be gathered that report on the mobility of Māori-medium teachers with respect to movement out of the teaching service itself, movement within the education service (but not to teaching positions), transfer to other schools or to other year levels within a school. Educationalists working in the field, however, report high levels of mobility. If this is indeed the case, developing and maintaining a skilled and experienced workforce is a major challenge for Māori-medium education. Flow-on effects include lessened opportunity to optimise and consolidate developing professional knowledge and experience within Māori-medium education.

(5) Increased demand for Māori-medium teachers, due to a rapid increase in the number of schools offering Māori-medium programmes, means demand for quality, experienced teachers who are also fluent speakers of Māori continually outstrips supply.

(6) Increasing demands for professional development in Māori-medium specific literacy and second language acquisition theory and practice, both of which are largely absent from the preservice and in-service experience of teachers (see also May & Hill, this issue). Consequently, there are proportionally fewer professionals capable or able to deliver the support required.

(7) Inconsistent provision and variations in the quality of professional development in second language acquisition theory and practice at the preservice training level and for teachers in-service. Johnson and Roll-eston (2001) report that many teacher-training courses are developed on the assumption/presumption that the trainees are first language speakers of Māori or have high levels of competency. Training tends to end up focusing on raising the language proficiency levels of trainees at the expense of improving the methodological and theoretical skills required for teaching or vice versa.

(8) The provision of teacher professional development with respect to Māori-medium education has tended to be short term, sporadic and piecemeal in
nature, where in fact a considered, comprehensive intensive long-term approach to developing a skilled workforce for Māori-medium is required (Bishop et al., 2001; May et al., 2004; Rau et al., 2001).

**Conclusion**

This study has provided a snapshot of student achievement across time and place for immersion in Māori, using an assessment that qualifies as an independent external measure of literacy acquisition and a measure of Māori language acquisition as a by-product of this investigation.

Māori-medium educators are very aware of the pressures to duplicate the practices of English-medium classrooms that characterise educational provision in New Zealand primary schools. The urge to resist such paternalistic overtures, however well intentioned, is strong.

Māori in general English-medium education continue to rack up disturbing rates of underachievement, as demonstrated by decades worth of student performance statistics. It is unrealistic therefore to expect that merely substituting the language of instruction from (L1) English to (L2) Māori, while maintaining a pedagogy and epistemology designed specifically for the majority non-Māori population, will result in significant improvements. As Māori have identified in their pursuit of self-determination, they need to be able to control curriculum content and its delivery as well as define achievement on their own terms.

Likewise, while Māori-medium education can gain valuable insight into plural language acquisition theory and practice from the international literature, Māori-medium educators would resist moves to arbitrarily duplicate effective overseas bilingual models. The preference again is to be able to develop and control processes and approaches that are more responsive to our unique linguistic, cultural, historical, political, social and economic context, in order to preserve, consolidate and further attempts to regenerate the Māori language.

The study is a celebration of Māori achievement and has positive implications for Māori-medium education because it adds robust literacy achievement data for students in Māori-medium to the limited pool of information that currently exists. That the assessment used to generate this data is a reconstruction of a highly valued procedure originally developed for English language programmes will undoubtedly boost confidence in the results. When it can be demonstrated that minority students in an alternative learning environment are experiencing success using a yardstick that is understood and valued by the majority culture, then this presents a strong argument for continuing support for that initiative. The continued survival of Māori-medium education (and therefore the survival of Māori language and culture) may well depend on its ability to prove to Māori and non-Māori alike that it is a successful option.

In the words of Hirini Melbourne (1991: 140), the well respected Māori scholar and strong advocate for the revitalisation of the Māori language who passed away in 2003:
so long as Māori people seek to control their own destiny and assert the unique value of their own culture, the urge will remain strong to know and be nourished by the rich and complex inheritance that is Māoritanga. In the end, if Māori people wish to preserve that cultural difference, they will be obliged to take control of the linguistic tools by which they understand and define themselves as a people. That means turning to the Māori language itself as their preferred mode of written as well as spoken expression.

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Correspondence
Any correspondence should be directed to Cath Rau, Kia Ata Mai Educational Trust, P.O. Box 166, Ngarnawahia, New Zealand (cath@kinatamai.org.nz).

Notes
1. The four levels comprise Level 1, 81–100% immersion in Māori; Level 2, 51–80%; Level 3, 31–50%; and Level 4, 0–30%.
2. Berryman et al. (2001) identify four similar language groups. They chose to classify children according to the language(s) communicated to them in the home, whereas Rau et al., 2001 have chosen to classify children based on the language(s) they can communicate in at school entry.
3. Standardised assessments provide uniform procedures for administration and scoring, contain pretested items of known difficulty and discrimination, are based upon and provide a set of norms that reflect the typical performance or scores of a particular group against which other individuals, or groups that can claim membership to that group, can be compared.
4. General education is a term used to refer to settings where English is the language of instruction.
5. Refer to Rau (1998) for finer detail regarding the reconstruction process. It is worth noting that this assessment has also been developed in other languages such as Spanish, Welsh and Hebrew.
6. Some of the results were produced and stored on facsimile paper. The ink deteriorated over time.
7. Interobserver reliability between assessors is reported in Rau (1998).
8. Ngā Taumatua is a Ministry of Education funded initiative which in 2002/2003 trained resource teachers of Māori in Māori-medium specific literacy initiatives.
9. Refer to Berryman et al. (2001), for a fuller description of the levelling system developed for Māori medium education.
10. The manual is currently in press.
11. The Woolf Fisher Research Centre (University of Auckland), when identifying teachers of Year 0 and 1 students in 80–100% Māori-medium programmes who might participate in a current research project (2002/3) for the Ministry of Education, found that the schools they targeted lost about one third of their teaching staff in one year (McNaughton, personal communication, July 2003). The extent to which this is typical of most Māori-medium programmes across New Zealand, however, is yet to be established.
References


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Results of Total Immersion in Māori Programmes


