ACHIEVEMENT IN PĀNUI
HE KETE RARAUnga
Achievement in pānui

This In Focus report analyses student achievement data in pānui (reading). The data was gathered between 2001 and 2004 from Māori-medium schooling in Aotearoa. A sample of 5,359 Year 4, 5, 6, 7 and 8 students took part in the assessment. These students were representative of students studying in Māori-medium schooling in those years.

Between 2001 and 2004 assessment tasks and materials were being developed for the Assessment Tools for Teaching and Learning (asTTle) resource bank. Overall, 624 different tasks were developed. The tasks cover the four major content areas in the pānui curriculum statement used in Te Reo Rangatira contexts (Murphy & Gray, 2003; Murphy & Keegan, 2002) and were designed to assess Te Reo Māori curriculum Levels 2 to 6:

- māramatanga (understanding)
- mātauranga (knowledge)
- rapu mōhiohio (finding information)
- whakamārama (interpretation/evaluation).

These skills require students to find information in written passages, know the meanings of language used in written passages, understand the main meanings and details in written passages, and interpret and evaluate both the artistic use of language and the message in written passages.

The schools that took part in the development of the assessment tasks were largely Level 1 immersion Māori-medium institutions, that means at least 81% or more of each day was taught in Te Reo Māori. Because of the small overall population of students in Level 1 Māori-medium instruction and because the data was gathered between 2001 and 2004, some students completed more than one test in more than one year. Nevertheless, this has not impacted on the overall sample. The total number represents approximately a sixth of the total population of students in Level 1 Māori-medium instruction.

The Māori word ‘kura’ is generally translated as ‘school’. However, in this In Focus report kura refers only to schools that teach regular school subjects through the medium of Te Reo Māori. It includes Kura Kaupapa Māori as well as full-immersion units/schools, bilingual units in mainstream schools, and bilingual schools.

---

1 Level 1 refers to the amount of instruction given in Te Reo Māori (language); this should not be confused with curriculum achievement ‘levels’.
Summary of main findings

The main findings for student performance on asTTle tasks related to the pānui curriculum were:

• students made noticeable progress in pānui from Years 5 to 8 and student performance improved from curriculum Level 2 to Level 3
• student performance in whakamārama (interpretation/evaluation) was noticeably better than the other pānui content areas in Years 4, 5, 6 and 7
• overall, girls consistently outperformed boys
• early enrolment in immersion education was linked to better student performance in pānui
• scores for students who spoke Māori at home some or all of the time were higher, on average, than the scores for those students who did not speak Māori at home
• speaking Māori at home some or all of the time is linked to higher achievement for students in immersion and bilingual units or schools
• length of immersion is linked to better student performance for students in immersion units or schools
• the majority of students had positive attitudes towards pānui.
Overall pānui achievement

The achievement of Year 4 to 8 primary students for pānui ranged across curriculum Levels 1 to 6. The most frequent score was at curriculum Level 3. In asTtle the score represents the number of points achieved by the student on that test. For example, in pānui the scores for students ranged from under 200 points to over 700 points.

Pānui achievement across student years

Figure 2 shows both the average performance of students at each year level and the spread of scores. It shows that between Years 5 and 8 achievement in pānui increased steadily with an average increase of 20 points per year. At Year 6 more than 50% of students were at or above curriculum Level 3. At Year 8 around 30% of students were reading in Te Reo Māori at or above curriculum Level 4.

2 The range of scores for each curriculum level is divided into basic, proficient, and advanced.

5 Box and whisker graphs show the spread of achievement for a group. The box part of the graph shows the spread of the middle 50% of scores and the whiskers show the spread to the extremes. The bottom of the box is the 25th percentile, 25% of all the scores are below this point. The top of the box is the 75th percentile, 25% of all scores are above this. The line across the box is the median (or 50th percentile) where half of the scores are above this and half below.
4 Year 4 was left out of this and subsequent analyses because of the small sample sizes.

5 If we want to look at the size of the difference between two groups of students (such as boys and girls) on different assessments then we can calculate an effect size. The larger the effect size, the greater the difference between the performance of the two groups that we are comparing. In education an effect size of 0.4 or greater is considered to be indicating an important difference.

Technically speaking, we can make comparisons between assessments that have a different average and a different spread by talking about that difference in terms of the proportion of the standard deviation for each assessment. Thus an effect size of 0.4 means that the average performance of one group is 0.4 standard deviations better than the average performance of another group.

Pänui content areas

In this section we look at the different content areas of pänui. Student achievement in each of the four main content areas is described in Figure 3.

The first thing to note is that the overall pattern of change in three of the four content areas is very similar. Students show a consistent increase in performance in mărmatanga (understanding), mātauranga (knowledge) and rapu mōhiohio (finding information) from Years 5 to 8. However, performance in rapu mōhiohio (finding information) increases more rapidly than performance in the other two content areas between Years 7 and 8.

Performance in whakamārama (interpretation/evaluation) shows a different pattern of increase over time. Student performance in this content area was noticeably better across Years 4 to 7 than the other three content areas, although by Year 8 it was matched by rapu mōhiohio (finding information).

Students’ overall achievement in mātauranga and mărmatanga, although showing steady increases through the primary years, was about 30 to 40 score points behind their overall achievement in rapu mōhiohio and whakamārama by Year 8.

While the growth over the years is similar across all content areas, the lower overall score for mātauranga and mărmatanga may be attributed to the cumulative effect of learning Te Reo Māori as a second language, wherein success at vocabulary is a major predictor of language success (Keegan, 2003).

Gender

This section looks at performance of boys and girls on the combined tasks for pänui. On average, girls consistently out-performed boys across all years from Years 5 to 8 on the pänui tasks.

Figure 4 shows that girls had a distinct advantage across primary school Years 5 to 8. Although boys and girls progressed at roughly the same rate between Years 5 and 8, girls entered curriculum Level 3 in pänui, on average, almost two years before boys. The average difference between boys and girls was 34 points over the four years. This can be expressed as an average effect-size across the years of 0.37, which would be regarded as moderately educationally important.
Length of immersion

Many students have been enrolled in kura for the full length of their schooling; in other words, they have only ever been in kura. In this In Focus report these students are termed full immersion. Those who have not been in kura for their full enrolment, but have had more than half of their schooling in kura, are called early immersion. Those who have been in kura for half or less of their total schooling are classified as late immersion. The length of immersion had a large effect on achievement in pänui (Figure 5).

On average, full immersion and early immersion students had higher scores than late immersion students across Years 5 to 8. Full immersion students and early immersion students entered curriculum Level 3 in Year 6, whereas the late immersion students remained in Level 2 throughout this period. This difference was particularly pronounced at Year 8, with full immersion students scoring an average of 80 points higher than late immersion students - a difference greater than the total gain across primary school years. These data suggest the earlier a student enters an immersion programme, the greater the positive effect on pänui achievement.

Frequency of Te Reo Māori spoken at home

Students who spoke Te Reo Māori at home, no matter what the amount, had higher average scores across Years 5 to 8 than students who did not speak any Te Reo Māori at home (Figure 6). This difference widened throughout primary years, with those who spoke no Te Reo Māori at home scoring 60 points lower than their peers in Year 8. (This can be expressed as an effect-size = .57)

We can also look at this in terms of the curriculum levels students attained. Overall, those students who never spoke Te Reo Māori at home did not enter curriculum Level 3 over the course of the four years from Year 5 through to Year 8. Their peers entered curriculum Level 3 at Year 6.

Speaking Te Reo Māori at home, whatever the frequency, was a strong indicator of continued progress in pänui: there was little difference between those who sometimes spoke Te Reo Māori at home and those who spoke Te Reo Māori all or most of the time. This suggests that whatever the amount of Te Reo Māori spoken at home, it had a beneficial impact on pänui achievement. In other words, families need not be frequent speakers of Māori to assist their children’s education.
Type of immersion school

As noted earlier students were enrolled in three types of immersion kura: Kura Kaupapa Māori, bilingual units or schools, and immersion units or schools. Below we look at student performance on the asTTle test in each of those immersion settings and whether the length of immersion and frequency of Te Reo Māori spoken at home are linked to that performance.

Bilingual units or schools

Figure 7 shows that the scores in pānui for students in bilingual schools ranged from curriculum Level 2 (average score approximately 460 points) at Year 5 through to Level 3 (average score approximately 530 points) at Year 8. Students made progress at each Year level.

Averaged across all years of schooling, we can also look at whether the length of immersion a student had experienced can be linked to their performance on the pānui test. Figure 8 shows that while there was little difference between the average scores of those students who were in full immersion (green line) and early immersion (red line), those students who had entered immersion later (blue line) did not perform as well, on average. Later immersion in bilingual schools or units was linked to reduced achievement overall.

Students in bilingual units and schools were at Level 2 of the curriculum, irrespective of the length of immersion. The difference in the average scores of full immersion and late immersion students was about 20 points.

Figure 9 shows that students who spoke Te Reo Māori all or some of the time at home scored 30 points higher, on average, than students who spoke no Te Reo Māori at home. This indicates that students enrolled in bilingual schools who speak at least some Te Reo Māori at home are more likely, on average, to perform better in pānui.

For definitions of full, early and late immersion please see the section Length of Immersion.
Immersion units or schools

Figure 10 shows that the scores in pānui for students in immersion schools ranged from curriculum Level 2 (average score approximately 470 points) at Year 5 through to Level 3 (average score approximately 510 points) at Year 8. Students, on average, showed good progress between Years 5 and 6, but between Years 6 and 8 their progress was limited.

Averaged across all years of schooling, we can also look at whether the length of immersion a student had experienced could be linked to their performance on the pānui test. Figure 11 shows that while there was some difference between the average scores of those students who were in full (green line) and early immersion (red line), this difference was relatively small. Those students who had entered immersion later on (blue line), however, did not perform as well, on average. Later immersion in immersion schools or units was linked to reduced achievement.

Students in immersion units and schools reached, on average, different levels of the curriculum according to the length of immersion. Full immersion students were more likely to be at Level 3 of the curriculum than early or late immersion students. The difference in the average scores of full immersion and late immersion students was about 55 points.

Figure 12 shows that students in immersion units who spoke Te Reo Māori all or some of the time at home scored 40 points higher, on average, than students who spoke no Te Reo Māori at home.
**Kura Kaupapa Māori**

Figure 13 shows that the scores in pānui for students in Kura Kaupapa Māori ranged from curriculum Level 2 (average score approximately 495 points) at Year 5 through to Level 3 (average score approximately 570 points) at Year 8. Students, on average, showed good progress across all Years.

Averaged across all years we can also look at whether the length of immersion a student had experienced could be linked to their performance on the pānui test. Figure 14 shows that, there was relatively little difference between the average scores of those students who experienced full, early or later immersion. The length of immersion a student had experienced was not linked to the level of performance for Kura Kaupapa Māori.

Figure 15 shows that the effect of not speaking Te Reo Māori at home was quite small for these students. On average students, irrespective of the amount of Te Reo Māori spoken at home, were in curriculum Level 3.
Attitudes to pänui

Understanding children’s attitudes is an important part of the aSTiLe educational resource. Three questions in pänui asked how much the student liked the subject; in particular, the questions asked about students’ enjoyment and involvement of the subject within and beyond school.

Three questions in pänui asked about student confidence in the subject; in particular, the questions asked how good students felt they were in this subject, and whether they thought their teacher and parent or caregiver thought they were good at the subject. As confidence in a subject comes partly from the feedback they receive from teachers and parents/caregivers (Anthony & Walshaw, 2002), students were asked how they thought others viewed their ability.

In each item students indicated their answer by choosing one of four faces. A score of:

- 4 (😊) meant strong liking or very high confidence
- 3 (😃) meant like or moderate confidence
- 2 (😄) meant dislike or low confidence
- 1 (😞) indicated strong dislike or very low confidence.

The average of the ‘liking a subject’ items and ‘confidence in a subject’ items was used to indicate each student’s overall preference for a subject.

Most students had positive attitudes towards pänui (😊). However, the relationship between student attitudes and achievement in pänui was very low (this was the same for pängarau and tuhituhi). This meant that students were positive towards pänui regardless of their level of achievement.

Attitudes across years

On average, the attitudes of students towards pänui were almost identical from Year 4 through to Year 8 (see figure 16).

Attitude and gender

Girls and boys were both positive towards pänui. Girls were slightly more positive across the years than boys (see figure 17).

Attitudes and years of immersion

Regardless of the length of time that students had been in immersion education, their attitudes were similarly positive.
Conclusion

Although students made noticeable progress from Years 5 to 8, the average level of achievement for Year 8 was lower than that anticipated by the Te Reo Rangatira curriculum. This finding raises some questions about the expectations of what students at these ages can achieve and about the way we represent progression through the curriculum.

Students initially performed well at whakamārama (interpretation/evaluation) tasks, although this performance was starting to plateau by the end of Year 8. Perhaps lower performance in the content areas of mātauranga and māramatanga prevented students from continuing to develop their interpretive and evaluative skills.

In summary, this In Focus report provides detailed information of Year 4 to 8 student achievement in pānui. The report has highlighted that students made progress and has outlined areas where differences exist and improvements may need to be made.

References


