

A closer look at Janet and John – is John really failing?

Gender differences in New Zealand primary students' reading achievement

Liz Eley

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The difference in the academic achievement levels of boys and girls as indicated by a number of research studies is a worrying one for teachers. A longitudinal study conducted with a birth cohort of 1,000 New Zealand children examined the educational outcomes of this group and concluded “the difference in achievement levels of traditional educational disadvantage shown by females has largely disappeared and has been replaced by an emerging male disadvantage” (Fergusson & Horwood, 1997). They also found that the lower achievement of boys compared to girls was present throughout the students' school career. The Education Review Office also examined the achievement of boys and found a “pattern of under-achievement by boys at all levels of schooling” (Education Review Office, 1999). Boys continue to be over-represented in reading recovery programmes, making up two-thirds of the students taking part in these programmes.

The task of the National Education Monitoring Project (NEMP) is “to obtain a detailed national picture of the educational achievements and attitudes of New Zealand primary and intermediate school children” (Flockton & Crooks, 1997). Through the results obtained in NEMP, a picture of the performance of various subgroups can be obtained, including that of gender. In the twelve different areas of the New Zealand school curriculum assessed for NEMP, there have been differences in both the achievements levels and the attitudes of boys and girls. When these differences are examined, a blanket picture of poor performance

by boys is dispelled. In 5 of the 12 areas reported, there was either little statistically significant difference in the results obtained by boys and girls or a mixed picture was obtained: in some questions girls did better and in some boys did better. In the test items where there were differences, boys obtained statistically significant better scores than girls in science, social studies, and, at the younger level, mathematics. Girls performed better than boys in the following areas: music; information skills; mathematics at the older level and in all the literacy areas. (These results are detailed in the 12 NEMP reports published from 1996 – 1999).

The following aspects of literacy have been assessed as part of NEMP: reading, speaking, listening, viewing and writing. In these areas, not only have girls demonstrated higher achievement, but the largest gaps in the performance between boys and girls have occurred. Other studies have also pointed to a difference in the achievement of boys and girls in literacy activities. There were “large and significant differences favouring girls” in the achievement levels of New Zealand students participating in the 1990-91 International Association for the Evaluation of Educational Achievement (IEA) survey of reading literacy (Wagemaker, 1993). In this study, students were assessed at two ages: 9 years old and 14 years old. At the 9 year old level especially, “results showed that boys achieved literacy levels well below those of girls in all domains of literacy tested” (Wilkinson, 1998). An Australian report on boys and literacy sums up their findings as “boys write less, read less and

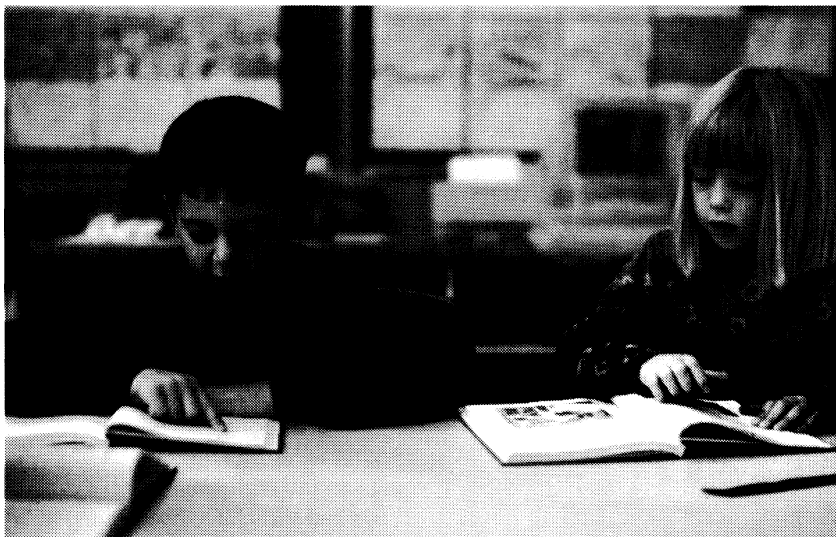


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engage with subject matter that are not usually endorsed by the school" (Alloway & Gilbert, 1997).

Boys' lower achievement levels and more negative attitudes towards literacy learning are of special cause for concern as much of the learning that takes place in other curriculum areas relies heavily on literacy skills. As the NEMP reading and speaking report states, "Language is broad and pervasive; there is seldom a time or place in any area of the curriculum where language is not present" (Flockton & Crooks, 1997, p.9).

This report examines the differences in responses between boys and girls in some of the activities completed as part of the NEMP assessment of reading.



Three aspects of student reading are examined: accuracy, silent reading to obtain information from text and oral presentations of written text. The assessment was carried out with a national sample of approximately 2880 students from 260 schools, half of the students in year 4 (ages 8 and 9) and half in year 8 (ages 12 and 13). Differences in task performance between boys and girls were checked for statistical significance using t-tests. The critical level for statistical significance was set at $p = .01$ so that differences this large or larger between the two groups would not be expected by chance in more than 1% of cases.

Reading Accuracy

Students reading accuracy was determined in NEMP using three parallel reading record tasks, differing in the types of material used: fiction, non-fiction or non-book. Students read short passages aloud to a teacher administrator and, at the conclusion of their reading, were asked to tell the teacher in their own words what the passage was about. These passages were divided into six broad reading bands, with students assigned to reading bands according to word reading accuracy in running text. The six reading bands, coded from zero to five, were incrementally spaced according to complexity of words and ideas. The bands used by NEMP give a broad picture of the level at which students

are reading, rather than the more precise reading levels required for instructional use. The NEMP bands indicate if a student is reading at the level expected for their age group, about two years above or below that, or more than two years above or below.

"Approximately 80% of students had the technical skills to read at or above levels we regard as normal for their time at school" (National Education Monitoring Project, 1997). This finding is not unexpected as "New Zealand's high standards in literacy are well known" (Wilkinson, 1998), and our students are doing well in international comparisons such as

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the IEA surveys of reading achievement. When means for the band levels were determined, it was found that year 4 students were reading slightly above the band 2 level (mean level of 2.85) and year 8 students were reading slightly above the band 4 level (mean level of 4.20).

The picture painted by these very broad brush strokes is a fairly heartening one. New Zealand students are, on average, reading well. However, at both age groups, girls are reading at higher levels than boys and the differences are statistically significant. At year 4 the mean for girls is a band level of 3.0 and for boys is 2.8; at year 8 the mean for girls is a band level of 4.4 and for boys is 4.1. The gap between the performance of boys and girls in reading levels widened between year 4 and year 8. Girls are achieving higher levels of reading earlier than boys, and at year 8 (ages 12-13), are still reading at higher levels.

Obtaining Information from Text: Locating and Recalling Information:

In this section the results from five different NEMP tasks were examined, four tasks that were identical for students at both year levels, and one task that used different materials for year four and year eight. In each task the students were required to silently read a passage and then answer a

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number of questions. The answer to each question was either explicit within the text, or able to be readily deduced from the text. The descriptions of each of these tasks, and the results in the NEMP assessment are found in NEMP Report 6 (Flockton and Crooks, 1997, pp. 28-33,36).

At the year 4 level, girls had a higher success rate than boys in four out of the five tasks and the mean score for the fifth task was equal. At year 8, girls had a higher success rate than boys in three of the five tasks, were equal in one case and the boys had a slightly higher mean score in one task. In three of the ten cases, the differences were statistically significant.

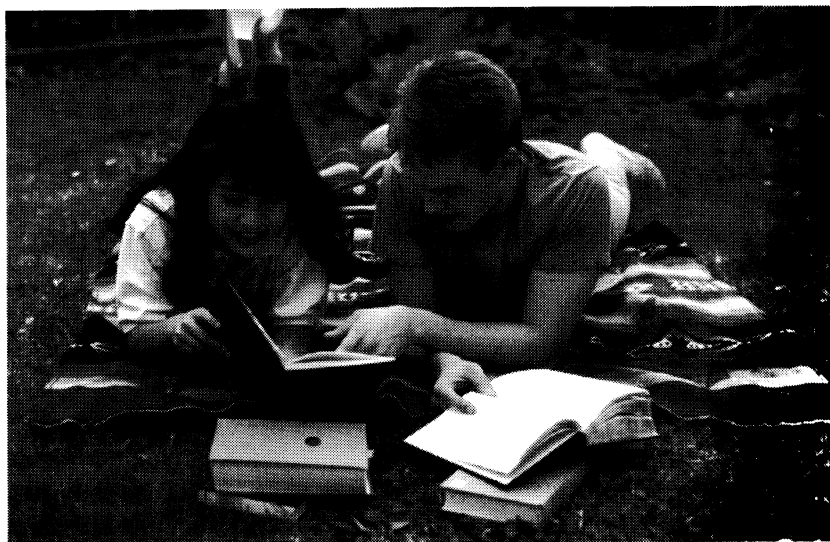
The task called “The Common Dolphin” had the largest degree of difference in performance between girls and boys. The task required students to look through the text to find the answers to five questions. For three of these questions there was one piece of information in the text, for one question there was two pieces of information in the text and for one question a full answer required identification of three pieces of information. Girls were more likely to give a fuller response in the questions that required more than one piece of information. It would appear that girls were either making a more detailed search of

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the text for the full answer or taking more care in reading the question to find out exactly what was required.

Skimming Text to Locate Information:

At each year level there was a task requiring students to skim a passage of text and locate the answers to a series of questions within a given time period. A description of these tasks is found in NEMP Report (Flockton and Crooks, 1997, p. 34-35). A high proportion of students did not attempt all the questions, being either unable to locate the information, running out of time or not completing the task due to other factors. Girls had a



statistically significant higher mean score than boys at both levels, therefore were able to skim the text and locate the correct information. This could be due to a number of factors: girls are more capable readers than boys (boys reading at a lower average reading level than girls); girls could have more efficient strategies for locating information in text or girls could have shown greater application in completing more of the task in the time allowed.

Oral Presentations of Written Text:

Students worked together in randomly assigned teams of 4 for

a number of activities for NEMP. Differences in results for boys and girls in three of these activities are examined here – the presentation of plays, reading poetry and telling jokes or riddles (fuller descriptions of the activities are given in NEMP Report 6 on pages 39-43). Although the students were working in teams, individual performances were assessed. Each of these tasks were video-recorded and the performance of each student was subsequently marked by teacher markers. For this article, three characteristics are examined: accuracy of reading, clarity of presentation and characterisation or expressiveness of performance. Student performance for each of

the characteristics was given a rating of strong, moderate or weak which were then assigned a numeric value on a descending scale of 3 to 1.

Accuracy of Reading:

Students were marked for the accuracy of their reading in oral presentations, i.e. the number of words that they read correctly from their scripts. At both year levels and in all three tasks, girls' mean scores were higher than boys' and in each case the differences were statistically significant. Girls were reading at a more accurate level than boys, which probably reflects the higher

competency in reading as shown in their reading levels.

Clarity of Presentation:

Students were also marked on a three-point scale for the clarity of their reading. In marking this task, teachers were encouraged to look beyond the accuracy of the student reading and focus on the clarity of the presentation. There was little difference in the scores between the year groups, younger students scoring as well for clarity of presentation as the older students. The mean scores for clarity of presentation were higher for both boys and girls in the play reading task, perhaps indicating that students felt a little more comfortable with presenting plays than with reading poetry or telling jokes. At year 8, girls' mean scores were higher than the boys' for all three tasks, the differences in each case being statistically significant, but this was only true in one case (poetry reading) at year 4 level. The difference between girls' and boys' success when clarity of presentation is considered increases as students get older.

Characterisation or Expressiveness in Oral Presentations:

Students were marked for characterisation and dramatisation in their presentation of the plays and for their expressiveness in their reading of poetry and jokes. For each task, the mean score for characterisation or expressiveness was lower for year 8 students than for year 4 students. Girls gained slightly higher scores than the boys in the jokes and riddles task, although the difference in the scores for this was not statistically significant. For the other two tasks, the difference in performance was statistically significant, girls giving a more expressive performance.

Discussion:

The results of the activities completed by the students as part of NEMP show a number of differences between boys and girls

in their reading abilities and attitudes. Girls are reading more accurately and at a higher level than boys and, when surveyed, expressed a greater enjoyment of reading and perceived themselves as better readers.

When students were assigned to reading bands according to their reading ability, most students were

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reading at or above the band level expected for their age. Both boys and girls are achieving success with their reading ability, although girls are reading at higher levels than boys.

When locating and recalling information from text, or in skimming text with a time limit, girls again performed slightly better than boys, although both subgroups had fairly high success rates in these activities. The biggest difference between boys and girls arose when the answers to the questions required more than one piece of information, where boys, as found in other studies, “appear to be more willing to sacrifice deep understanding, which requires sustained effort, for correct answers achieved at speed” (Arnot et al, 1998).

The biggest differences in performance between boys and girls came in the oral presentations of written text: girls obtaining higher scores than boys in the three categories of accuracy, clarity and expressiveness. For both subgroups, younger students received higher scores for expressiveness, students presenting with less expressiveness as they got older.

The NEMP results could add to the picture of the negative performance of boys within the

New Zealand education system. It would be easy at this point to paint a bleak picture of future prospects for our boys as there are differences in the achievement levels of boys and girls in their reading. However, this does not automatically mean that boys are failing in reading – coming second does not necessarily mean losing. Boys' results show a high success rate in their reading even though these are not as high as those of the girls. A danger of highlighting the differences in achievement of boys and girls can be that this difference is labelled as boys failing in reading. We, as educators of these young readers, need to ensure that this label does not become a self-fulfilling prophecy.

References

- Alloway, N., & Gilbert, P. (1997). Boys and literacy: Lessons from Australia. *Gender and Education*, 9(1), 49-58.
- Arnot, M., et al, e. (1998). *Recent Research on Gender and Educational Performance*. United Kingdom: Office for Standards in Education.
- Education Review Office. (1999). *The Achievement of Boys*. (Vol. 3). Wellington: Education Review Office.
- Fergusson, D. M., & Horwood, L. J. (1997). Gender differences in educational achievement in a New Zealand birth cohort. *New Zealand Journal of Educational Studies*, 32(1), 83-96.
- Flockton, L., & Crooks, T. (1997). *Reading and Speaking Assessment Results 1996* (6). Dunedin: Education Assessment Research Unit.
- National Education Monitoring Project. (1997). *Forum Comment: 1996 Assessment Reports*. Dunedin: Education Assessment Research Unit, University of Otago.
- Wagemaker, H. (1993). Reading Achievement of New Zealand 9 – and 14 – Year Olds. In H. Wagemaker (ed.), *Achievement in Reading Literacy*. Wellington: Ministry of Education.
- Wilkinson, I. G. (1998). Dealing with diversity: Achievement gaps in reading literacy among New Zealand students. *Reading Research Quarterly*, 33(2), 144-167.