

Match of teacher qualifications to subject taught: secondary schools



- fifteen percent of subjects are taught by teachers who had studied at third year university or post graduate level in that subject

Indicator description

Subjects taught by highest level of subject-specific study undertaken by the teacher.

Rationale

There is a substantial body of evidence showing that students' achievement, particularly in mathematics and science is influenced by their teacher's previous study in those subjects, along with the teacher's pedagogical knowledge. When teachers have majored or done advanced tertiary study in the curriculum area taught, students gain higher achievement.

Most of the evidence for this indicator arises from US research but there is New Zealand evidence showing the importance of prior mathematics study for teachers, particularly when linked to pre-service preparation in pedagogy. The PISA results show the proportion of teachers in a school with university tertiary-level qualification, with a major in the respective subject domain taught, to be statistically significantly related to student achievement in mathematics, science and reading literacy at Year 11 level across countries. However, the NZ data did not show the effect to be significant for reading literacy. No analyses were included in the PISA data for mathematics and science by individual country.

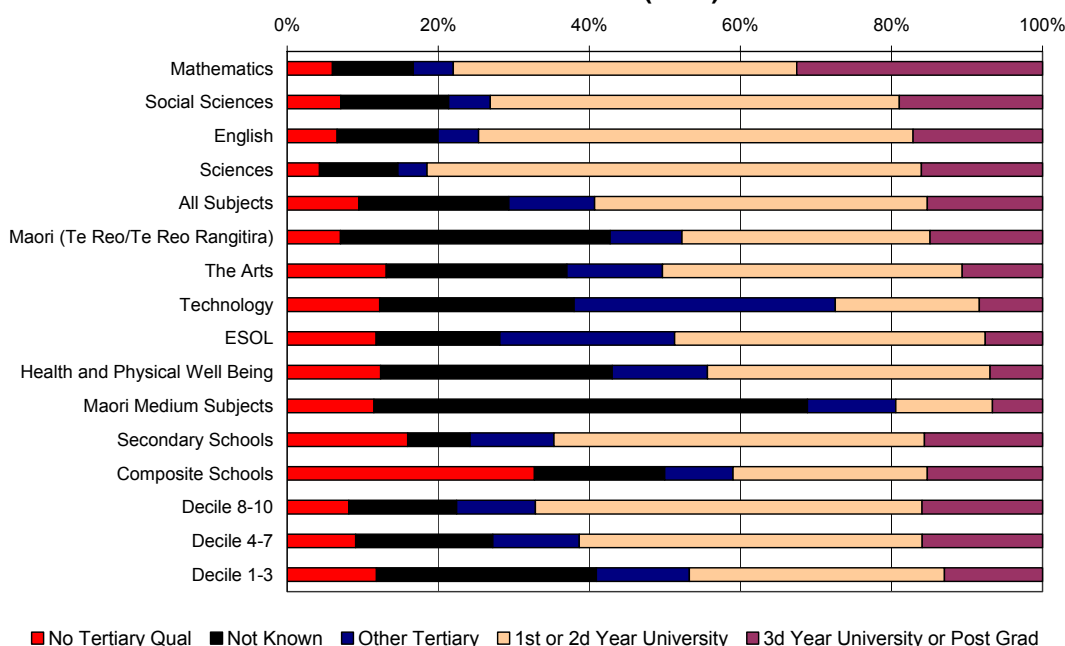
US research has shown poorer results for students in secondary schools who have been taught by teachers who are not specifically qualified to teach in the curriculum area taught and thus teach 'out-of-field'. Accordingly, the critical indicator is at the student level rather than the teacher level. When human resource constraints or school time-tabling and organisational constraints lead to the assignment of teachers to out-of-field teaching, negative impacts on student achievement can follow.

Analysis and discussion

More than 15,000 teachers surveyed in the 2001 Teacher Census taught classes at Years 9 to 13. Sixty nine percent of these reported their highest non-teaching qualification as a Bachelor degree or higher. Yet a much lower proportion (about a quarter) reported this level of study in any subject that they currently teach.

Most teachers (63%) also taught more than one subject, with the overall average being two subjects (curricula areas) although the number of contact hours is not known.

Percentage of subjects taught at Years 9-13, by highest level of subject-specific study undertaken by teacher (2001)



Note: The 2001 Teacher Census Survey asked teachers to indicate which subjects they are currently teaching to Year 9-13 students and the highest level of tertiary study they have undertaken in these specialist subject areas. The aggregated results shown here are based on the total response to this question, i.e., if a teacher indicated two subjects then each response would be counted as one “subject taught”.

taught, 15% were taught by teachers who had studied at third year university or post graduate level in that subject. The proportion in mathematics (33%) was higher than in any other learning area. The proportions in social science, English and science were also above average. Other learning areas (and selected language subjects shown) were at or below average on this measure.

The proportions for secondary and composite schools were very similar, and while the differences between schools in different decile groupings were also relatively small, low decile schools lagged slightly behind other schools.

When all subject-specific qualifications are taken into account, students in high decile schools appear to be taught by the highest qualified teachers. However, the best evidence gathered to date focuses on the link between teachers with third year university study in the subject being taught and student achievement.

Other findings include:

- Composite schools had the highest proportion of subjects taught by teachers with no subject-specific tertiary qualification
- Technology subjects were the most likely to be taught by teachers with “Other Tertiary” qualifications (includes national diploma, trade certificate and other non-university tertiary qualifications)
- Science subjects were the most likely to be taught by teachers with first or second year university study in the subject
- Māori medium subjects provided the highest proportion of non-responses to this question.

Linkages

To obtain more information about teacher qualifications, consider indicator:

- Teacher qualifications: schooling

References

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