

The European Journal of Social and Behavioural Sciences  
**EJSBS Volume II** (e-ISSN: 2301-2218)

## INVESTIGATING TEACHER EXPECTATIONS BY ETHNICITY IN NEW ZEALAND

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### Abstract

The current study examined teacher expectations of four ethnic groups in New Zealand in reading and mathematics, controlling for achievement. Investigating teacher expectations for ethnic minority groups is important because minority groups often begin schooling disadvantaged. Studies have shown that teachers often have lower expectations for minority groups leading to the design of learning opportunities that tend to exacerbate the achievement gap between minority group students and their more advantaged White and Asian peers. In New Zealand, Maori and Pasifika students have historically underachieved and so this study explored whether teacher expectations may be one explanation for that disadvantage.

*Keywords:* Teacher expectations, ethnic minority, elementary school, student achievement, math, reading

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doi: 10.15405/FutureAcademy/ejsbs(2301-2218).2012.2.10



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## **1. Introduction**

In many Western countries, including in New Zealand, minority group students do not achieve the same high academic levels as European or Asian students. This has led researchers to explore teacher instructional practices in order to determine how effective their practice is for minority groups. Little focus has been given to the socio-psychological factors that could possibly provide an explanation. The beliefs of teachers about some groups have been shown to lead to differentiation in the ways teachers instruct students and the relationships they form with them (Weinstein, 2002). The current study explored teacher expectations, as representing one teacher belief, and examined whether expectations differed by student ethnicity, controlling for achievement. Expectations for different ethnic groups have been explored in some studies (e.g., Hinnant, O'Brien, & Ghazarian, 2009), but few have controlled for achievement. Instead, the expectations of teachers for different ethnic groups have been compared (e.g., Rubie-Davies, Hattie, & Hamilton, 2006). Hence, the aim of the current study was to examine teacher expectations of different ethnic groups in New Zealand while controlling for achievement.

## **2. Theoretical Framework**

Teacher expectations can lead to effects on student achievement because teachers differentiate their instructional practices depending on their expectations such that high expectation students are taught more concepts and at a faster pace such that they receive more opportunities to learn while lows are given repetitive, non-challenging work (Rubie-Davies, 2007). Moreover, students are perceptive of teachers' expectations (Weinstein, 2002), may assimilate these and subsequently achieve in line with their teacher's expectations (the self-fulfilling prophecy). Perceptions of lowered teacher expectations for minority students can trigger stereotype threat such that students' mindfulness of stereotypes about their group's academic outcomes can lead to endorsement of the stereotype (Steele & Aronson, 1995). This is one explanation for why, African- American students, for example, are more susceptible to teachers' expectations than majority students (McKown & Weinstein, 2002).

Meta-analyses of some early experimental studies indicated that teacher expectations were higher for White and Asian students than for minority groups (Baron, Tom, & Cooper, 1985; Dusek & Joseph, 1985). These findings have been borne out in later work. A recent meta-analysis of mostly naturalistic studies (Tenenbaum & Ruck, 2007) found that expectations were higher for Asian-Americans but lower for African-American and Latino students when teacher expectations were compared to those for White students. However, the studies included in the meta-analysis did not control for achievement. McKown and Weinstein (2008) found that teachers' expectations for African-American or Latino students were lower than they were for White students with similar achievement. In a New Zealand study, Rubie-Davies and colleagues (2006) showed that teachers' expectations were high for New Zealand European and Asian students when compared with achievement, but not for indigenous Maori. Further, expectations for Pasifika students (those whose parents are from Pacific Islands such as Tonga, Samoa, Niue and Fiji) were higher than for Maori even though Maori achievement was superior to that of Pasifika students. This study is the only one in the expectation field to have examined teacher expectations for the four largest ethnic groups in New Zealand.

### **3. Purpose of the Study**

Recently in New Zealand concerns about the low achievement of Maori students have led to teachers being made aware of their possible stereotyping and the low expectations that can emanate from such beliefs (e.g., Berryman & Bishop, 2006). The current study had two major purposes. First, it was designed to explore teachers' expectations of Maori, Pasifika, Asian and New Zealand European students controlling for achievement with a much larger sample of students than in the aforementioned study. Second, it was intended to

explore whether recent teacher professional development in the form of raising awareness of biased teacher expectations had had any effect. A third related purpose of the study was to explore teachers' expectations in mathematics as well as reading (since expectations in reading had been examined in a previous study; Rubie-Davies et al., 2006).

## **4. Research Methods**

### *4.1. Participants*

After gaining ethical approval, 12 elementary schools in a large city in New Zealand were recruited to participate. The schools in the city in which the study took place are multicultural although more schools in higher socioeconomic areas have mostly European and Asian students and those in poorer areas have mostly European, Maori and Pasifika.

#### *4.1.1. Teachers*

Within these schools, 90 teachers consented to being part of the study. Of these teachers, 25 were male and 65 were female; 69 were European, 9 Maori, 9 Pasifika and 3 were Asian; teaching experience ranged from 1–41 years with most (56%) having taught for 10 years or less. Teachers taught at differing levels: 26 taught Years 3–4 students (Grades 2–3), 34 taught Years 5–6 (Grades 4–5) and 30 taught Years 7–8 (Grades 6–7). Participating schools came from all socioeconomic levels such that 18 teachers were in schools in low socioeconomic areas, 18 were in schools in high socioeconomic areas and the remaining teachers were in middle income areas.

#### *4.1.2. Students*

Of the 2352 students, 1200 were male, 1152 female; 1142 were European, 417 Maori, 374 Pasifika, 345 Asian and 74 Other; 473 students were attending low socioeconomic schools, 520 high socioeconomic and 1359 schools in middle income area; 625 students were in either Year 3 or 4, 859 were in Year 5 or 6 and 868 were in Year 7 or Year 8.

### *4.2. Measures*

#### *4.2.1. Expectation measure*

As a measure of teacher expectations, at the beginning of the academic year, teachers estimated the level that they believed each student would achieve in mathematics and in reading by the end of the year, from very much below average to very much above average on a 1–7 Likert scale and based on National curriculum levels.

#### *4.2.2. Student achievement*

Students completed a New Zealand standardized mathematics and reading test called asTTle. Each test was 40 minutes in duration and students completed a test based on their current levels. In other words, the test designed for a Year 4 student would not be the same as that for a Year 8 student.

#### *4.3. Procedures*

Teachers completed the expectation measure approximately one month into the academic year. Testing after one month enabled teachers to become familiar with their students because previous studies suggest that teachers form their expectations early in the school year and that these tend to be stable (Raudenbush, 1984). Students completed the asTTle tests approximately 1–2 weeks later. Therefore, teachers completed their expectations before student standardized assessment results were known. The first author created tests online that were suitable for each class level and teachers then assigned their students to an appropriate test. Once all tests had been completed they were marked on-line by the research team (for more details about asTTle go to: <http://e-asttle.tki.org.nz/>).

### **5. Findings**

Not all students were present for the asTTle reading and mathematics tests, or their teachers considered they were special needs students and unable to complete the standardized test. Thus the numbers of students who completed each test varied and are lower than for expectations for which all students had a teacher expectation. As can be seen by the means in Table 1, expectations were lower for Maori and Pasifika than for European and Asian in both reading and mathematics. However, achievement in reading and mathematics were also lower.

**Table 1.** Means and Standard Deviations for Teacher Expectations Student Achievement in Reading and Math

Ethnicity	Reading expectation		Math expectation		Reading achievement		Math achievement	
	<i>M</i> ( <i>n</i> =2352)	<i>SD</i>	<i>M</i> ( <i>n</i> =2352)	<i>SD</i>	<i>M</i> ( <i>n</i> =1831)	<i>SD</i>	<i>M</i> ( <i>n</i> =1908)	<i>SD</i>
European	4.90	1.46	4.74	1.35	1411.25	108.50	1431.31	92.73
Maori	4.54	1.38	4.44	1.31	1362.10	98.30	1391.55	92.73
Pasifika	4.40	1.50	4.43	1.48	1344.90	89.14	1382.63	84.62
Asian	4.91	1.48	5.33	1.32	1432.50	106.77	1485.47	106.00
Other	4.52	1.45	4.56	1.50	1400.11	106.92	1424.70	96.29
Total	4.73	1.47	4.71	1.40	1395.19	107.81	1423.87	97.92

The degree to which teachers' expectations were accurate was also explored. A Pearson product-moment correlation was calculated. The correlations between reading and mathematics achievement ( $r = .827$ ) and between teacher expectations in reading and mathematics ( $r = .771$ ) were strong, while the correlations between teacher expectation and achievement in reading ( $r = .435$ ) and mathematics ( $r = .461$ ) were moderate.

Two hierarchical linear regressions were used to determine whether ethnicity predicted teacher expectations, controlling for reading achievement in the first regression and mathematics achievement in the second. Achievement was entered as Step 1, explaining 18.9% of the variance in teacher expectations in reading. After entering ethnicity, at Step 2 the total variance explained by the model as a whole was 19.1%,  $F(2, 1828) = 215.86$ ,  $p < .001$ . Ethnicity explained an additional 2% of the variance in teacher expectations after controlling for student achievement, a small effect as defined by Cohen (1988),  $R^2$  change = .002,  $F$  change  $(1, 1828) = 4.11$ ,  $p < .04$ . In the final model both achievement ( $\beta = .43$ ) and ethnicity ( $\beta = -.04$ ) were statistically significant.

In the second regression, at Step 1 mathematics achievement explained 21.3% of the variance in teacher expectations in mathematics. After entering ethnicity, at Step 2 the total variance explained by the model as a whole increased slightly to 21.4%,  $F(2, 1904) = 258.99$ ,  $p < .001$ . Ethnicity explained very little additional variance in teacher expectations after

controlling for student achievement, R squared change = .001, F change (1, 1904) = 3.03, p = .08. In the final model achievement ( $\beta = .46$ ) but not ethnicity ( $\beta = .04$ ) was statistically significant.

## **6. Conclusions**

This study suggested that although the New Zealand Ministry of Education has attempted to alter teachers' expectations of Maori and Pasifika students, in reading at least, some of the variance in teacher expectations could be explained by student ethnicity. It appeared, therefore that teachers were using ethnicity as one basis on which they formed their expectations in reading although the effect size was very small. However, the finding that there was no such differentiation in mathematics is heartening. It suggests that teachers' expectations in mathematics were based on achievement rather than on ethnicity, and probably on prior achievement information.

Minority group students often come from homes that are disadvantaged socioeconomically and in terms of the resources that are available to them. This means that they have many barriers to overcome when they arrive at school. Research suggests that for a variety of social reasons, Maori and Pasifika students have interacted with their parents less frequently than New Zealand European students by the commencement of schooling with suggestions that they have heard one million fewer words by school entry (Tunmer, Chapman, & Prochnow, 2006). Hence, they have less literate cultural capital when they begin school and therefore a literacy gap already exists that needs to be closed. A similar gap also exists in mathematics at school entry. In contrast, Asian students, who are often English second language students but from well-resourced home backgrounds, have a strong foundation in their own language and they tend to achieve well in the New Zealand system.

When teachers have low expectations for a particular group this can result in teachers providing less opportunity to learn for groups who arguably need more. An outcome of low expectations is that teachers teach fewer concepts to students and at a slower pace whereas for high expectation students they present additional concepts and teach them at a faster pace (Page & Rosenthal, 1990). Unfortunately, some studies have shown that some teachers appear

to accept the stereotyping of Maori as not being interested in education (Rubie-Davies, et al., 2006) and possibly make less effort to teach them. Less is known about teachers' expectations of Pasifika students and this is an area for future research. Studies have shown, however, that Maori students are very aware of teachers who have low expectations for them and so become less motivated and engaged than they do for teachers who have high expectations for them (Berryman & Bishop, 2006). Pasifika students may react similarly. Ennis (1998) reported that African American students in the US reported being more academically engaged in classes where students perceived that their teachers had high expectations for them and equally African Americans did not put in effort in classes where they believed that their teachers had low expectations for them and did not care about them.

Despite the barriers, many Maori and Pasifika students thrive within the education system. Teachers perform a crucial role in ensuring that the future for these students is as positive as possible. Every economy benefits from a skilled and educated workforce and this is vital in creating the economies of the future.

### **Acknowledgements**

The authors declare that there is no conflict of interest. This study was supported by the Marsden Fund Council through a Marsden Fast Start Grant from New Zealand Government funding, administered by the Royal Society of New Zealand.



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