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## Teacher expectations and the beliefs of Māori and Pākehā students

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### The background and the problem

- Underachievement of Māori
- Culturally situated
- Native schools
- Results
  - Limited educational/ economic opportunities
  - Low ability groups/tracks
  - Special education
  - Suspensions



### Beliefs and relations

- Low expectations for Māori (Rubie-Davies, Hattie, & Hamilton, 2006)
- Links between expectations and achievement (Weinstein, 2002)
- Links between student self-efficacy and achievement (Liem, Marsh, McInerney, & Yeung, 2013)
- Links between student motivation and achievement (Kaplan & Maehr, 2007)

### Exploring relations



### Research questions

1. To what extent do teachers under- or overestimate the achievement of Māori and Pākehā students?
2. Do Māori and Pākehā students differ in their self-beliefs, motivation, perceived support and their academic achievement in mathematics?
3. To what extent do students' self-beliefs and motivation, and teachers' under- or overestimation of achievement relate to Māori and Pākehā students' end-of-year mathematics achievement?

### Participants

- 844 students: 186 Māori; 658 Pākehā
- 55% Year 7; 45% Year 8
- Aged 10-13 years;  $M=11.6$ ,  $SD=.59$
- 52% Male; 48% Female
- 13% Low decile school (76% Māori)
- 24% Mid decile school (32% Māori)
- 64% High decile school (11% Māori)

## Measures

- Standardised mathematics test
  - Beginning and end-of-year
- Expectations of students – 5-item scale
  - Over- and under-estimation
- Student beliefs
  - Self-efficacy (Fast et al., 2010)
  - Perceived competence (Wigfield & Eccles, 2000)
  - Goal orientation (Midgley et al., 2000)
  - Teacher and peer support (Rowe, Kim, Baker, Kamphaus, & Horne, 2010)

## Findings: multi-level model

- Under- or overestimated
  - 97 Māori, 63% underestimated
  - 335 Pākehā, 35% underestimated
  - $\chi^2(1)=24.3$ , Cramer's  $V=.237$ ,  $p < .001$
- Multilevel logistic regression
  - Student age and gender Level 1
  - School decile Level 2
  - Girls – underestimated, 2.2 times ( $\beta = -.78$ )
  - Students in high decile schools – overestimated ( $\beta = 1.81$ )

## Student beliefs

- Means suggested
  - Pākehā higher mean levels of achievement
  - Māori higher scores on beliefs measures
- ANCOVA controlling for SES
  - Māori higher performance goals;  
 $F(1, 3994) = 4.013$ ,  $p = .046$
  - Māori lower achievement;  
 $F(1, 394) = 3.31$ ,  $p = .07$

## Two-level multilevel model

- Predicting end-of-year achievement
- Model 1
  - ICCs: Between 5% and 7% of variance
- Model 2
  - Level 1: student gender, age, beginning year maths scores; teacher over-/underestimation
  - Level 2: school decile
- Higher beginning maths scores, higher end-of-year scores (Māori  $\beta = .87$ , Pākehā  $\beta = .78$ )
- Students in high decile, higher end-of-year scores (Māori  $\beta = .74$ , Pākehā  $\beta = .56$ )

## Model 3

- Added student belief factors at Level 1
- Significant predictors in Model 2 remained significant
- Māori
  - Higher performance goals, less peer support predicted higher end-of-year achievement
- Pākehā
  - No beliefs predicted end-of-year achievement

## Discussion

- Equity of teachers' expectations
  - Gender and school decile as underlying over- and underestimations
- Previous NZ research
  - Turner, Rubie-Davies & Webber, 2015
  - Rubie-Davies et al., 2006
  - Ministry initiatives
  - Teacher awareness
  - More Māori in mid and low decile schools

### Ethnic differences in achievement and beliefs

- Achievement differences beginning and end-of-year
  - Māori gained 56 points; Pākehā gained 40 points
  - Developing culturally responsive learning environments
- Student beliefs
  - Māori strongly endorsed performance goals
    - Family prestige; escape poverty
    - Prevailing stereotypes

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### Predicting achievement: Māori

- Beginning year achievement predicted end-of-year achievement
- High decile students greatest progress
  - Most Maori in low decile schools
  - Closing the achievement gap
  - Equity for Māori
- Beliefs factors
  - Māori and performance goals
  - Peer support
    - Competitive stance
    - Success at a cost



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### Predicting achievement: Pākehā

- Prior achievement
- School decile
- Gender marginally significant
  - Only Pākehā girls



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### Questions/comments

"I wish a politician with no teaching experience would just come in and tell me how to teach," said no teacher ever.



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