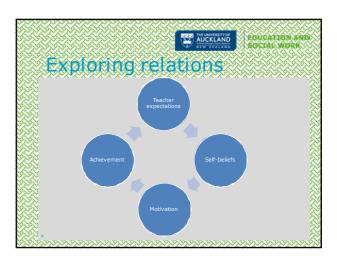






Beliefs and relations

- 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)



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Research questions

- 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

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- 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)



- 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 (β = -.78)
 - Students in high decile schools overestimated (β = 1.81)



Student beliefs

- Means suggested
 - Päkehä 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

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- 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 (Mãori $\beta=.87$, Pākehā $\beta=.78$)
- Students in high decile, higher end-of-year scores (Māori β = .74, Pākehā β = .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 overand underestimations

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- 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

2



Ethnic differences in achievement and beliefs

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



Predicting achievement: Māori

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





Only Pākehā girls



