The intersection of student characteristics and teacher expectations:

Exploring teacher bias

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Some background

Student characteristics known to influence teacher expectations
– SES (Westphal et al., 2016)
– Ethnicity (Tenenbaum & Ruck, 2007)
– Gender (Watson et al., 2017)
– Age (Kuklinski & Weinstein, 2001)

Equivocal findings

The teacher factor

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Aim of the study

Explore associations between student SES, gender, age in reading and mathematics over three years

Same students, different teachers

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Methods

1789 students
91 teachers first year
122 teachers second year
146 teachers third year

Same students, different teachers

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Student demographics

Low SES	Mid SES	High SES			
19%	49%	31%			
NZ Euro	Māori	Pasifika	Asian	Other	
49%	16%	17%	15%	3%	
Female	Male				
49%	51%				
7 Years	8 Years	9 Years	10 Years	11 Years	12 Years
13%	19%	17%	18%	17%	16%

Measures and analyses

Standardised reading and maths tests

Teacher expectations for end-of-year
– 1-7 Likert scale
– "Very much below" average to "Very much above average"
Hierarchical linear regressions, controlling for achievement
Which factors contributed to expectations

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Results: Reading 1

Predicting Expectations in Reading First Year

Variable	B	SEB	ß	R^2	ΔR^2
Achievement	.009	.000	.545***	.275	.275
SES	-.045	.014	-.073***	.279	.004
Ethnicity	-.016	.024	-.014	.280	.000
Gender	.151	.058	.053**	.282	.003
Student age	.001	.019	.001	.282	.000
Constant	4.819	.211			

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Results: Reading 2

Predicting Expectations in Reading Second Year

Variable	B	SEB	ß	R^2	ΔR^2
Achievement	.010	.000	.583***	.363	.363
SES	.019	.017	.032	.364	.001
Ethnicity	-.022	.028	-.019	.364	.000
Gender	.062	.070	.022	.364	.000
Student age	.008	.023	.009	.364	.000
Constant	4.432	.245			

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Results: Reading 3

Predicting Expectations in Reading Third Year

Variable	B	SEB	ß	R^2	ΔR^2
Achievement	.011	.000	.648***	.441	.441
SES	.034	.016	.049*	.444	.002
Ethnicity	-.070	.026	-.061**	.448	.004
Gender	.001	.064	.000	.448	.000
Student age	-.014	.022	-.015	.448	.000
Constant	4.585	.250			

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Reading summary

Controlling for achievement:
- Year 1 and Year 3, student SES predicted TE (negative in Year 1)
- Year 3, ethnicity predicted TE
- Year 1, being female predicted higher TE

Most of the variance in teacher expectations related to achievement

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Results: Mathematics 1

Predicting Expectations in Mathematics First Year

Variable	B	SEB	ß	R^2	ΔR^2
Achievement	.010	.000	.566***	.279	.279
SES	-.061	.013	-.106***	.287	.008
Ethnicity	.053	.022	.047*	.290	.003
Gender	.015	.053	.006	.290	.000
Student age	.044	.017	.051*	.292	.002
Constant	4.661	.192			

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Results: Mathematics 2

Predicting Expectations in Mathematics Second Year

Variable	B	SEB	ß	R^2	ΔR^2
Achievement	.009	.000	.545***	.328	.328
SES	.045	.015	.076**	.333	.005
Ethnicity	.056	.024	.053*	.336	.003
Gender	.096	.059	.037	.337	.001
Student age	.001	.020	.002	.337	.000
Constant	4.188	.217			

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Results: Mathematics 3

Predicting Expectations in Mathematics Third Year					
Variable	B	SEB	ß	R^2	ΔR^2
Achievement	.012	.000	.632***	.412	.412
SES	.032	.017	.047[†]	.415	.003
Ethnicity	-.048	.028	-.041[†]	.416	.001
Gender	- 114	.069	-.039	.418	.001
Student age	.049	.023	.051*	.420	.002
Constant	4.160	.260			

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Mathematics summary

Controlling for achievement:
– Years 1, 2 and 3 SES predicted TE (negative in Year 1)
– Years 1 and 2, ethnicity predicted TE
– Years 1 and 3, student age predicted TE

Most of the variance in teacher expectations related to achievement

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Conclusions

In both reading and mathematics:
• SES, ethnicity, gender or age predicted TE at some stage over three years

• Not consistent

• Expectations are teacher-dependent

• Some teachers more easily biased than others

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Thank you

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