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# Effects of parent-child relationships and goals of academic achievement in mathematics education

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## Why am I interested?



- Observations in Australian secondary schools
- The Trends in International Mathematics and Science Study (TIMSS) and the Programme for International Student Assessment (PISA)
- Various experiences while tutoring Asian students in Australia
  - Crying when they come to the session
  - Sitting for select entry exams but do not want to enroll in a select entry school
  - 97% is not good enough
  - More homework because they play games
- Ratio of European and Asian background students in Select Entry Schools

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## Victoria's diverse population: 2016 Census

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Table 4. Victoria: Top 15 ancestries, total responses, 2016

Rank 2016	Ancestry Response <sup>(a)</sup>	First Response	As % of Tot	Second Response	As % of Tot	Total Responses	As % of Tot
1	English	1,759,476	31.7	9,735	0.5	1,769,211	23.7
2	Australian	1,099,629	19.8	553,664	28.8	1,653,293	22.1
3	Irish	319,704	5.8	277,551	14.4	597,255	8.0
4	Scottish	212,720	3.8	279,564	14.6	492,284	6.6
5	Chinese	347,436	6.3	23,202	1.2	370,638	5.0
6	Italian	282,765	5.1	69,940	3.6	352,705	4.7
7	Indian	187,368	3.4	21,887	1.1	209,255	2.8
8	German	95,366	1.7	106,481	5.5	201,847	2.7
9	Greek	134,779	2.4	35,667	1.9	170,446	2.3
10	Vietnamese	93,885	1.7	14,257	0.7	108,142	1.4
11	Dutch	43,553	0.8	54,136	2.8	97,689	1.3
12	Maltese	43,468	0.8	30,404	1.6	73,872	1.0
13	Filipino	54,661	1.0	13,657	0.7	68,318	0.9
14	Sri Lankan	49,526	0.9	9,063	0.5	58,589	0.8
15	Polish	33,274	0.6	23,278	1.2	56,552	0.8

<sup>(a)</sup> Respondents have the option of providing more than one response but only the first two responses are coded. Total responses may exceed total persons.

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## Parenting Styles

	Demanding (expect more)	Non-demanding (expect less)
Responsive (supportive)	Authoritative (propagative)	Indulgent (permissive)
Non-responsive (less supportive)	Authoritarian (totalitarian)	Uninvolved (neglectful) (permissive)

Sources: (Baumrind, 1967; Maccoby & Martin, 1983)

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## Parent-child involvement found in literature

Disposition towards mathematics	Parental perceptions	Parental involvement	Parenting styles	Parental engagement	Other factors	Children's perceptions
-mindset and learning	-attitudes	-parental encouragement	-authoritative	-school involvement	-socio economic status	-positive outcomes
-teaching strategies	-beliefs	-home discussion	-authoritarian	involvement	-parents' level of education	-negative pressure
-international comparative studies	-expectations	-homework involvement	-indulgent	communication		
	-aspirations	-provision of private tutoring	-uninvolved	participation		
	-values	-family rules				
-demographics	-academic standards	-perceptions of control				
culture		-material deprivation				
gender						
year level						

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## Research questions

- To what extent do parental perceptions and parental involvement affect children's perceptions in mathematics education
  - between Asian-Australian and European-Australian backgrounds?
  - between genders of children and parents?
  - among year levels of children?
- In what ways do parental perceptions and parental involvement affect children's perceptions in mathematics education?



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## Conceptual framework

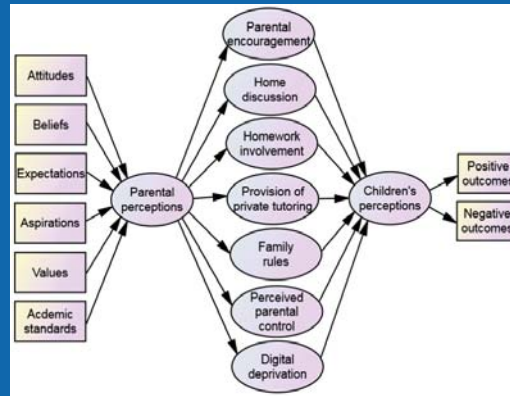


Figure 3.1. Conceptual framework of parental involvement and academic achievement of children.

## Research participants

1. Asian parents who are residents in Australia and their secondary school students who live and study in Australia (Asian-Australian).
2. Parents with European background who live in Australia and their