Teaching Math Effectively: Insights from LSAY and PISA on Primary Teacher Proficiency

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1 Abstract

2 Background and motivation

Australian school students are consistently under performing in mathematics, in particular almost half of Australia's 15 year-old students are failing to achieve national standards in mathematics with the nation now more than four years behind the world's top-performing jurisdiction in maths.

3 Objectives and significance

4 Methodology

The aim of the project was to understand the performance of primary school teachers in Australia in mathematics, utilising the Longitudinal Surveys of Australian Youth (LSAY) and Programme for International Student Assessment (PISA) datasets. `Intsvy` and `rrepest` were used to determine accurate summary statistics.

4.0.1 The Data

The analysis required data which retained the demographic information from LSAY with the corresponding PISA scores for each observation. To achieve this, LSAY data post 2003 was used as participants were recruited from schools that also took part in the PISA. These years included: 2003, 2006, 2009 and 2015.

In the dataset each row represented a student, and each column had demographical data encoded into variable names, PISA scores and weights.

A dummy data frame was created for better understanding:

STIDSTD	SECTOR	SEX	PV1MATH	PV2MATH	ST38Q03	ST38Q04	ST38Q05	w_fstr1
1	2	2	468.4245	409.0685	2	5	1	1.2766102
4	1	1	464.6351	509.0291	4	4	1	0.7740191
5	2	2	596.2615	480.3612	4	4	4	0.5060625
3	1	1	446.9021	492.8447	1	3	3	1.4329810
2	2	1	548.2972	585.0316	1	4	4	1.0729493
3	1	2	420.7293	402.0046	4	3	5	0.7071067
1	2	2	462.6991	440.3103	5	1	2	1.0545890
1	2	1	447.5162	583.8510	4	1	2	0.7625848
5	1	2	434.8974	533.8403	5	5	4	0.7627957
4	2	2	509.0684	498.3888	2	1	5	0.7078676

5 Results

6 Discussion

7 Conclusion