National Summit on Teaching Out-of-field
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https://ooftas-collective.org/toofsummit

WHAT DATA ARE NEEDED TO INFORM POLICY?

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1

1. INCIDENCE

To answer questions about **incidence,** representative data must be analysed.

representative of some defined target population (e.g., mathematics teachers in NSW; secondary teachers in Australian government schools, …)

As individual researchers rarely have resources to obtain representative samples, secondary analyses can best address.

What do we know?

- SiAS: Staff in Australia's Schools – analyses by Paul Weldon (presn. 1)
- PISA: Teachers survey – our own analyses of PISA 2015 @Year 10

Subject	*N* teachers	% OOF
Ancient languages	22	63.4
Religion/ethics	616	29.7
Vocational	1271	26.4
Technology	1746	21.0
Mathematics	2204	20.5
English	2605	16.1
Modern languages	330	14.5
P.E.	1050	12.8
Social studies	1510	12.2
Arts	1029	6.6
Science	3011	6.2
Total[1]	15394	15.5

Note: Weighted estimates. Excludes teachers teaching seven or more subjects.
1 Teachers teaching multiple subjects are in multiple rows.
Includes 319 teachers who did not provide information on the subjects they qualified to teach.

Shah, C., Richardson, P.W., & Watt, H.M.G. (2020). *Teaching 'out of field' in STEM subjects in Australia: evidence from PISA 2015.* (67 pp.) ideas.repec.org/p/zbw/glodps/511.html

Shah, C., Richardson, P. W., Watt, H. M. G., & Rice, S. (forthcoming). 'Out of field' teaching in mathematics: Australian evidence from PISA 2015. In L. Hobbs & R. Porsch (Eds.), *Out-of-field teaching across teaching disciplines and contexts.* Springer.

2

PARAMETERS

- Target population definition (e.g., PISA Year 10 only)
- Power to investigate sub-populations of interest dependent on sampling frame (proportionate/stratifiers)
- Definitional precision and meaning 'TOOF'
- Level of subject aggregation (e.g. 'science' & 'social studies' can't be differentiated in PISA)
- Embargoed analyses (e.g., State X system in SiAS)

3

2. DISTRIBUTION

Because questions of **distribution** rely on incidence, representative data are again essential.

The panel right illustrates a small selection of distribution data from PISA 2015 (Y10 teachers from our cited reports) for mathematics.

Many other questions of distribution can be examined.

Other representative datasets can be similarly explored, that contain information to identify teachers teaching OOF, such as:

- TALIS: Y7-12 teachers/principals (excludes casual teachers)
- TIMSS: Y8 classes of students & their teachers in mathematics

	In-field	Out-of-field
Gender		
Female	47.3	53.9
Male	52.7	46.1
Age group (years)		
<30	14.8	20.4
30-49	46.8	56.7
>49	38.3	22.9
Qualification level		
< Bachelor	4.8	4.7
Bachelor	75.6	74.8
> Bachelor	19.6	20.5
Hours of work		
Full-time	85.1	85.7
Part-time	14.9	14.3
Employment contract		
Permanent	87.3	78.0
Temporary	12.7	22.0
Experience (years)		
1	2.9	3.9
2-5	15.4	20.8
>5	81.7	75.3
Exp. in current school (years)		
1	9.9	13.0
2-5	34.0	37.7
>5	56.1	49.2
Experience (no. of schools)		
1	14.4	12.3
2-5	60.2	64.9
>5	25.4	22.8

4

3. ANTECEDENTS & CONSEQUENCES

Antecedents:

- teacher & school demographics in existing datasets (limitations)

Consequences:

- **which?**
- limitations of cross-sectional data
- possibilities of data linkages
- longitudinal data?

5

OTHER SECONDARY DATASETS?

Exploiting the full potential of existing data

- maximises their potential, and
- reduces burden on a data-fatigued sector.

FIT-Choice (Y7-12) unique longitudinal ARC data (Watt/Richardson) could discern long-term consequences for OOF/in-field mathematics teachers from beginning teacher education until mid-career.

www.fitchoice.org

FITCHOICE

Factors Influencing Teaching Choice

- Networks and consortia such as this Summit, have potential to connect researchers who may collectively be able to apply a 'TOOF' lens to existing quality datasets towards a shared purpose.

6

A PURPOSE-DESIGNED CONCERTED NATIONAL EFFORT???

NSW DoE currently funded our investigation regarding mathematics in NSW government schools:
Understanding and building the strengths and skills of non-specialist mathematics teachers and schools' capacities for junior secondary mathematics.
Watt, H. M. G., Bobis, J., Anderson, J., Holmes, K., & Richardson, P. W.

Could States/Territories & systems cooperate in a national agenda?
This would optimise awareness and policy uptake of findings.

Considerations:

- definition TOOF (Hobbs et al. report on definitional issues)
- Data sources (target population? who & where?)
- Data collection modes (self-report surveys/interviews, site visits & observations for key groups)
- Collection process (by whom?)
- Curriculum subjects (priorities?)

Not only an Australian issue.

7