

Draft estimated primary school teacher supply and demand

Initial Teacher Education			Teachers			Students			Projected additional supply and demand				
	Graduates (2019)	5 yr change	5 yr % change	Employed (FTE) (2020)	5 yr change	5 yr % change	Enrolled (FTE) (2020)	5 yr change	5 yr % change	Estimated additional teachers required (2021 to 2025)	Estimated additional teachers available (2021 to 2025)	Available teachers less required teachers	Rating
NSW	1609	-580	-26%	44,800	1,546	4%	705,729	24,120	4%	7,395	8,686	1,291	Surplus
Vic.	1261	-48	-4%	40,631	4,535	13%	566,446	38,969	7%	8,818	12,601	3,783	Surplus
Qld	642	-68	-10%	32,396	1,623	5%	478,062	17,089	4%	4,713	4,764	51	Surplus
SA	289	-32	-10%	11,187	494	5%	163,101	-302	0%	473	1,958	1,485	Surplus
WA	759	-21	-3%	15,669	448	3%	243,131	8,590	4%	3,117	4,604	1,487	Surplus
Tas.	145	-17	-10%	3,242	253	8%	45,551	555	1%	454	807	353	Surplus
ACT	89	-25	-22%	2,877	399	16%	41,807	4,271	11%	608	397	-211	Shortage
NT	57	39	217%	2,020	105	5%	24,365	-524	-2%	349	386	37	Surplus
Aust.	5488	-682	-11%	152,821	9,403	7%	2,268,192	92,768	4%	26,536	34,956	8,420	Surplus

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NSW	1756	-167	-9%	43,293	983	2%	535,503	22,924	4%	10,747	8,956	-1,791	Shortage
Vic.	1265	-36	-3%	38,008	3,704	11%	438,506	33,375	8%	10,124	11,117	993	Surplus
Qld	659	-214	-25%	31,212	3,997	15%	378,624	42,139	13%	7,115	5,355	-1,760	Shortage
SA	397	-46	-10%	8,928	789	10%	109,655	8,267	8%	3,409	2,261	-1,148	Shortage
WA	506	-293	-37%	15,110	987	7%	186,496	12,954	7%	3,724	2,817	-907	Shortage
Tas.	0	0	0%	3,054	201	7%	36,249	629	2%	757	960	203	Surplus
ACT	105	48	84%	2,652	125	5%	32,317	2,250	7%	551	568	17	Surplus
NT	20	15	300%	1,439	-2	0%	16,344	164	1%	249	115	-134	Shortage
Aust.	5427	-664	-11%	143,695	10,783	8%	1,733,695	122,703	8%	36,031	31,908	-4,123	Shortage

Source: Selected Higher Education Student Statistics, www.dest.gov.au, Graduate Outcomes Survey – Longitudinal, ABS, Cat. No. 4221.0, Schools, Australia, 2020, Department of Education, Skills and

Employment's school funding model as at Budget 2021-22, Microdata: Longitudinal Labour Force, Australia ABS (Cat. 6602.0).

Notes: The number of ITE primary and secondary graduates does not include primary and secondary graduates in programs not specifically categorised. Teacher supply is calculated as the number of

2019 domestic and international education graduates for each state and territory, multiplied by primary and secondary teacher employment rates measured for 2019 to 2021. Measuring employment over three

years accounts for students who do not become a teacher immediately after graduation. Employment outcomes rates for domestic under-graduate and postgraduate students are applied to both domestic and

international students. Projecting the number of primary and secondary teachers required for each state and territory is based on the Department of Education, Skills and Employment's primary and secondary

teacher enrolment projections, which are applied to 2020 student enrolments, student-teacher ratios and the teacher headcount to FTE ratio. In addition, the number of teachers needed to be replaced is

estimated using the 'cohort-component method' as direct estimates of attrition are not available. Due to sample size constraints, the annual net replacement demand rate is estimated for the whole school

teacher occupation (ANZSCO 241), not specifically for primary and secondary school teachers by individual state and territory. The estimated national annual net replacement demand between 2020 to 2025 is

2.2 per cent. State and territory supply and demand projections do not equal supply and demand projections for Australia. The projections are based on current higher education policy settings and higher

education behaviour, and due to data unavailability, do not account for subject specialisations and supply from migration or a change in the proportion of teachers re-entering the workforce.

Draft estimated primary school teacher supply and demand

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Scenario 1: Baseline		Projected additional supply and demand	
Scenario 2: Domestic graduates only		Scenario 3: Available secondary teachers include middle school teachers	
Available teachers less required teachers (2021 to 2025)	Rating	Available teachers less required teachers (2021 to 2025)	Rating
NSW	1,291	Surplus	1689
Vic.	3,783	Surplus	4260
Qld	51	Surplus	434
SA	1,485	Surplus	1793
WA	1,487	Surplus	1690
Tas.	353	Surplus	392
ACT	211	Shortage	-147
NT	37	Surplus	107
Aust.	8,420	Surplus	11,158

Draft estimated secondary school teacher supply and demand

Draft estimated secondary school teacher supply and demand			
Scenario 1: Baseline		Projected additional supply and demand	
Scenario 2: Domestic graduates only		Scenario 3: Available secondary teachers include middle school teachers	
Available teachers less required teachers (2021 to 2025)	Rating	Available teachers less required teachers (2021 to 2025)	Rating
NSW	-1,791	Shortage	-1,599
Vic.	993	Surplus	1,470
Qld	-1,760	Shortage	-1,377
SA	-1,148	Shortage	-879
WA	-907	Shortage	-706
Tas.	203	Surplus	243
ACT	17	Surplus	81
NT	-134	Shortage	-73
Aust.	-4,123	Shortage	-2,139

Source: Selected Higher Education Student Statistics, www.dest.gov.au, Graduate Outcomes Survey – Longitudinal, ABS, Cat. No. 4221.0, Schools, Australia, 2020, Department of Education, Skills and Employment's school funding model as at Budget 2021-22, Microdata: Longitudinal Labour Force, Australia ABS (Cat. 6602.0).

Notes: Estimated teacher supply for scenario 1 and 3 is calculated using the number of 2019 domestic and international education graduates for each jurisdiction, whereas, teacher supply for scenario 2 is calculated using only the number of 2019 domestic education graduates. Graduates include both undergraduate and postgraduate students. For scenario 3, employment outcomes are estimated by including employed middle school teachers with employed primary school and secondary school teachers, respectively. State and territory supply and demand projections do not equal supply and demand projections for Australia.

Attachment A

Projecting estimated teacher demand and supply methodology

Teacher Demand

The total demand for new teachers is estimated as the projected growth in teacher numbers, plus the number of teachers permanently leaving the profession.

Growth demand

Growth demand is estimated as a function of.

- The number of school students based on estimates of full-time equivalent students from the annual ABS *Schools, Australia* publication (Cat no 4221.0).
- Growth in the number of students based on projections by the Department of Education, Skills and Employment.
- The student-teacher ratio is the ratio of full-time equivalent students to full-time equivalent teacher from *Schools, Australia*.
- The proportion of teachers working part-time is based on the ratio of teacher headcount to the number of full-time equivalent teachers from *Schools, Australia*.

Primary and secondary projected student enrolment growth for each state and territory is applied to 2020 FTE student enrolments to project student enrolments to 2025. This is divided by each jurisdiction's 2020 student teacher ratio for primary and secondary schools, respectively, to project the number of FTE teachers. This is then multiplied by the 2020 school teacher headcount to FTE ratio to project the total number of teachers to 2025.

Replacement demand

Replacement demand reflects the number of teachers leaving the profession. The 'cohort-component method' is used to estimate net replacement demand; the sum of outflows from the profession into other occupations, unemployment or out of the labour force, minus re-entrants to the profession. This shows the demand for training new workers to maintain the current workforce.

The cohort-component method allows estimation of flow rates in and out of an occupation by taking into account net changes in cohort sizes, using data from *Microdata: Longitudinal Labour Force, Australia* ABS (Cat. 6602.0) for the whole school teacher occupation (ANZSCO 241). Employment numbers in a particular age cohort are estimated for 2015 and 2020. The difference in the number of teachers in each age cohort between 2015 and 2020 is used to calculate net separations. For example, the number of teachers in the 20-24 age cohort in 2015 is compared with the number of teachers in the 25-29 age cohort in 2020. For each age cohort, if the size of the cohort has decreased then there has been a net outflow, otherwise the net outflow is equal to zero. Summing these net outflows provides the net replacement demand. The rate of net outflows across age cohort are applied to the 2020 school teacher population to project net replacement demand to 2025, with the same rate used for primary and secondary school teachers across each state and territory.

Teacher supply

Teacher supply is calculated as the number of 2019 education graduates, multiplied by the rate at which these graduates enter primary and secondary school teaching for each state and territory. These rates were applied to domestic and international education graduates. This shows whether the current number of teacher graduates is sufficient to meet teacher demand.

Attachment B

Projecting estimated teacher demand and supply – source data

Teacher Demand

Growth demand

Table: Student enrolments, teaching staff, student to teacher ratio and teacher headcount to FTE teacher ratio by school level and jurisdiction, 2020

	FTE student enrolments		FTE teaching staff		FTE student to FTE teacher ratio		Teacher headcount to FTE teacher ratio
	Primary	Secondary	Primary	Secondary	Primary	Secondary	
NSW	705,729	535,503	44,800	43,293	15.8	12.4	1.1
Vic.	566,446	438,506	40,631	38,008	13.9	11.5	1.2
Qld	478,062	378,624	32,396	31,212	14.8	12.1	1.1
SA	163,101	109,655	11,187	8,928	14.6	12.3	1.1
WA	243,131	186,496	15,669	15,110	15.5	12.3	1.2
Tas.	45,551	36,249	3,242	3,054	14.1	11.9	1.2
ACT	41,807	32,317	2,877	2,652	14.5	12.2	1.1
NT	24,365	16,344	2,020	1,439	12.1	11.4	1.1
Aust.	2,268,192	1,733,695	152,821	143,695	14.8	12.1	1.1

Source: Schools, Australia 2020, ABS (Cat. No. 4221.0)

Table: Projected student enrolment growth rates by school level and jurisdiction, 2021-2025

		2021	2022	2023	2024	2025
Primary FTE students	NSW	0.80%	0.37%	0.59%	0.79%	0.82%
	Vic.	1.73%	1.05%	1.23%	1.50%	1.26%
	Qld	0.27%	-0.31%	0.50%	0.91%	1.00%
	SA	0.83%	-8.69%	0.53%	0.30%	0.29%
	WA	1.18%	0.75%	1.11%	1.26%	1.14%
	Tas.	-1.11%	0.89%	0.29%	0.30%	0.49%
	ACT	2.12%	1.02%	1.33%	1.51%	1.25%
	NT	1.42%	0.39%	1.06%	0.98%	1.15%
	Aust.	0.96%	-0.19%	0.80%	1.02%	0.98%
Secondary FTE students	NSW	2.36%	2.42%	2.24%	1.61%	1.23%
	Vic.	2.11%	2.60%	2.44%	1.73%	1.65%
	Qld	2.98%	2.46%	1.71%	0.86%	0.54%
	SA	2.45%	14.43%	1.54%	0.85%	0.72%
	WA	2.26%	2.25%	2.06%	1.35%	0.89%
	Tas.	6.34%	0.49%	1.18%	0.65%	0.22%
	ACT	2.17%	2.90%	2.95%	1.69%	1.70%
	NT	0.65%	1.62%	1.45%	0.93%	0.40%
	Aust.	2.49%	3.17%	2.09%	1.37%	1.09%

Source: Department of Education, Skills and Employment's school funding model as at Budget 2021-22

Replacement demand

Based on the age profile of teachers in 2020, the annual net replacement demand for teachers is projected to be 2.2 per cent per annum to 2025.

Table: Estimates of teachers permanently leaving profession, 2020-2025

Age Group	Employment numbers 2015	Employment numbers 2020	Estimated replacement demand 2015-2020	Replacement rate by age cohort 2015-2020	Projected replacement demand 2020-2025
20-24	23,231	27,594	0	0%	0
25-29	60,414	72,307	3,967	7%	4,748
30-34	50,939	56,447	0	0%	0
35-39	47,586	56,158	0	0%	0
40-44	46,373	54,011	0	0%	0
45-49	41,150	56,130	0	0%	0
50-54	44,648	43,923	4,274	10%	4,205
55-59	43,481	40,374	16,651	38%	15,461
60-64	26,116	26,830	15,102	58%	15,516
65-69	9,394	11,013	5,356	57%	6,279
>=70	np	4,039	np	100%	4,039
Total	393,332	448,825	45,350		50,246

Source: Microdata: Longitudinal Labour Force, Australia ABS (Cat. 6602.0)

Note: It is assumed that the retirement age is 70 and that all teachers over 70 need to be replaced. np refers to not published.

Teacher supply

Table: Estimated employment rates of domestic education graduates as primary and secondary school teachers by jurisdiction

	Undergraduate		Postgraduate	
	NSW			
Employment rate - primary teachers	NSW	27%		17%
	Vic.	38%		19%
	Qld	38%		11%
	SA	27%		16%
	WA	46%		22%
	Tas.	34%		14%
	ACT	42%		0%
	NT	34%		28%
	Aust.	36%		17%
				22%
Employment rate - secondary teachers	NSW	23%		26%
	Vic.	19%		29%
	Qld	27%		22%
	SA	26%		29%
	WA	13%		32%
	Tas.	11%		31%
	ACT	23%		14%
	NT	9%		26%
	Aust.	20%		

Source: Graduate Outcomes Survey - Longitudinal

Note: Employment rates are measured for 2019 to 2021.

Table: Award completions for education students by jurisdiction, 2019

	Undergraduate	Postgraduate
NSW	3,827	4,141
Vic.	3,713	5,838
Qld	1,969	1,860
SA	774	1,141
WA	1,365	1,331
Tas.	265	509
ACT	189	226
NT	194	40
Aust.	12,296	15,086

Source: Selected Higher Education Student Statistics, www.dese.gov.au
 Note: Data include completions of both domestic and international students.

Future teacher demand and supply projections

Table: Annual projected teacher supply and demand estimates for Australia, 2021 to 2025

	Estimated additional teachers required						Estimated additional teachers available		Available teachers less required teachers	
	Growth demand	Primary Replacement demand	Total demand	Growth demand	Secondary Replacement demand	Total demand	Primary	Secondary	Primary	Secondary
2021	2,169	3,892	6,061	3,587	3,660	7,247	6,991	6,382	930	-865
2022	-334	3,941	3,607	5,295	3,740	9,036	6,991	6,382	3,385	-2,654
2023	1,405	3,933	5,339	3,602	3,859	7,461	6,991	6,382	1,652	-1,079
2024	1,806	3,965	5,771	2,410	3,939	6,350	6,991	6,382	1,220	32
2025	1,753	4,005	5,758	1,944	3,993	5,938	6,991	6,382	1,233	444
Total									8,420	-4,123
Rating									Surplus	Shortage