

# **Teacher Workforce Planning Exercise – October 2024 Statistical Modelling of ITE Intake Requirements**

**April 2025**

# Teacher Workforce Planning Exercise – October 2024

## Statistical Modelling of ITE Intake Requirements

### 1. Objective

The objective of this iteration of modelling was to calculate the initial teacher education (ITE) student intake required for 2025/26 to maintain teacher numbers across each sector at 2023 levels (overall 54,030 full-time equivalent (FTE)).

There are two main routes into teaching: the four-year BEd (undergraduate) and one-year PGDE (postgraduate). The modelling described here only considers varying the levels of PGDE ITE intake and assumes constant BEd intake.

Following ITE, teachers may embark on probationer employment as a provisionally registered teacher. On completion of probation, teachers are eligible to apply for full registration. The Official Statistics on teacher numbers include both provisionally and fully registered teachers in the overall count of teacher FTE.

Therefore, the earliest point at which the 2025/26 PGDE ITE intake can enter employment as teachers and be captured in the teacher number statistics is 2026 (as probationers).

### 2. Modelling approach

The teacher workforce planning model estimates the size of the future teaching workforce, based on current data and assumptions about inflows and outflows to the pool of employed teachers. In this instance, the model was used to determine the level of ITE intake (which forms part of the total inflows) required to maintain teacher numbers at 2023 levels.

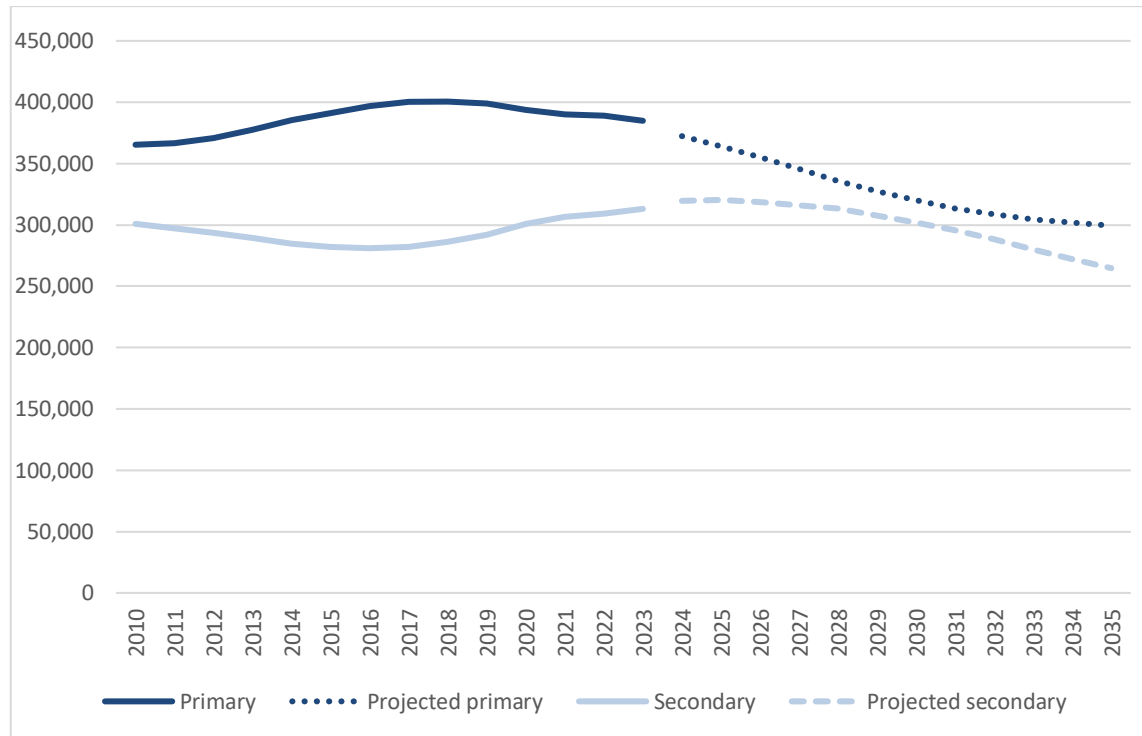
The model is also used to generate estimates of future pupil rolls, based on official population projections. These can then be used, in combination with the estimated size of the future teaching workforce, to estimate future pupil teacher ratios (PTRs).

The modelling described here uses the most recent data available, i.e. the [2023 school pupil and staff censuses](#), the [2020-based national population projections](#) (updated in January 2023 to take account of higher inward migration than previously thought) and 2024 enrolments to ITE. In some cases, this data has been used to create an assumption about future trends, this is described further below.

### 3. Model Inputs

#### 3.1. Pupil projections

**Chart 1: Pupil Projections, 2024-2035**



Statistics from the annual school pupil census show that the primary school roll has been falling since reaching a peak in 2017. Pupil projections, based on population projections, show the number of primary pupils continuing to decrease through to 2035.

At secondary level, the pupil roll increased in 2017 for the first time in 14 years and is projected to continue increasing until 2025, after which it will fall through to the end of the projection period in 2035.

Overall pupil numbers (pupils in primary, secondary and special schools) decreased in 2023 for the first time since 2011 and are projected to continue decreasing through to 2035.

These projections are based on the 2020 population projections which, following the recent fall in births, assume a lower birth rate than previous projections. An update to the 2020 population projections was published in January 2023 to account for higher than expected inward migration. This mainly affected young adult age groups, with a lagged effect on the population of school-aged children.

### 3.2. Teacher Numbers

In the past 5 years, we have seen a rise in teacher numbers of nearly 2,100 (a 4% increase). There have been increases across both the primary and secondary sectors compared with 2018, although primary teacher numbers have decreased since their recent peak in 2021.

The 4% increase in primary teachers (compared to the 4% decrease in pupils) since 2018 has meant that there are fewer pupils per teacher and consequently the primary PTR has decreased to 15.3, the second lowest level ever.

However, in secondary schools the number of pupils has grown at a faster rate than the number of teachers in recent years. The result of this is that the secondary PTR is now 12.5, close to the highest level since 2004.

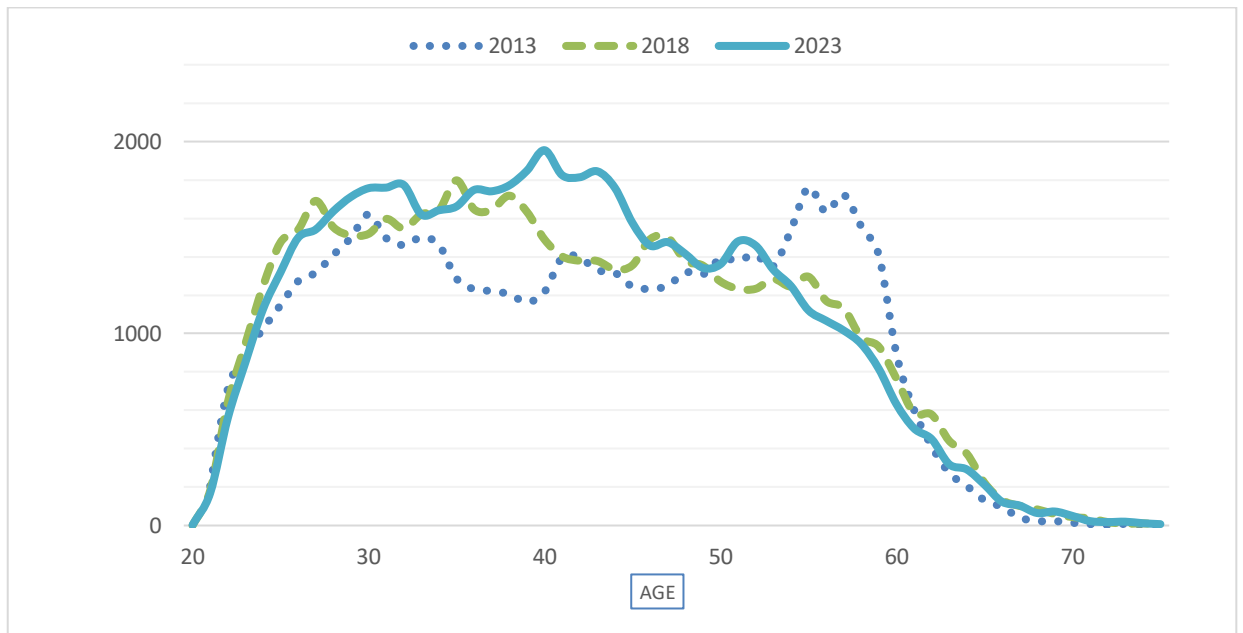
Table 1: Change in teacher numbers 2018-2023

	ELC	Primary	Secondary	Special	Centrally Employed	All sectors
2018-2023	-14%	1%	7%	10%	7%	4%

### 3.3. Age profile of teachers

The age profile of teachers has changed much over the past 10 years. The prominent peak of teachers in their mid to late fifties, as seen in 2013, no longer exists. Teacher numbers are now relatively consistent from age 25 to 40 and slowly reduce in the older age groups.

**Chart 2: Age profile of teachers (headcount)**

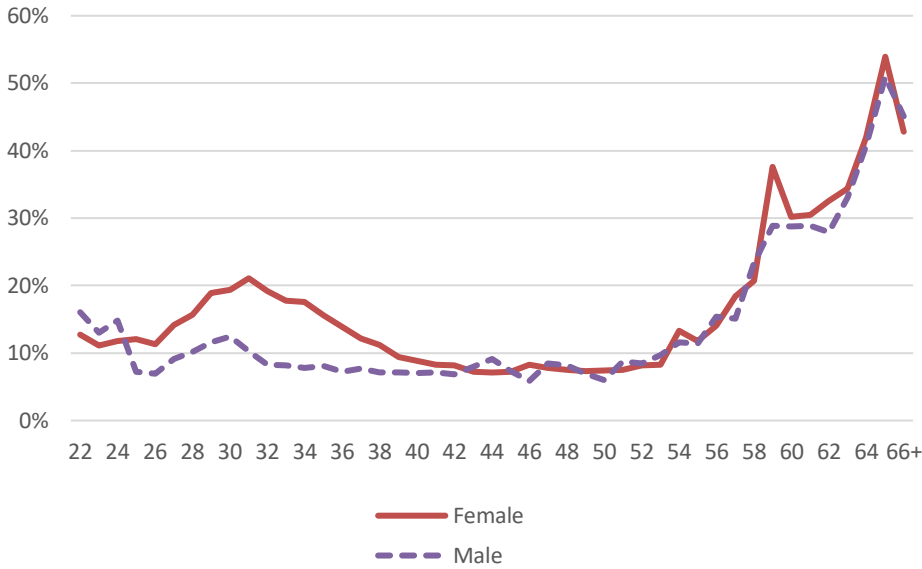


**3.4. Reduction rates for teaching workforce**

The teacher workforce reduction rates (referred to in previous years as the wastage rates) represent the sum changes for all teachers whose FTE has reduced as a proportion of total teacher FTE between one teacher census and the next. Teachers on the Teacher Induction Scheme (TIS) have a different reduction rate pattern and so are treated separately (see TIS reduction rates below).

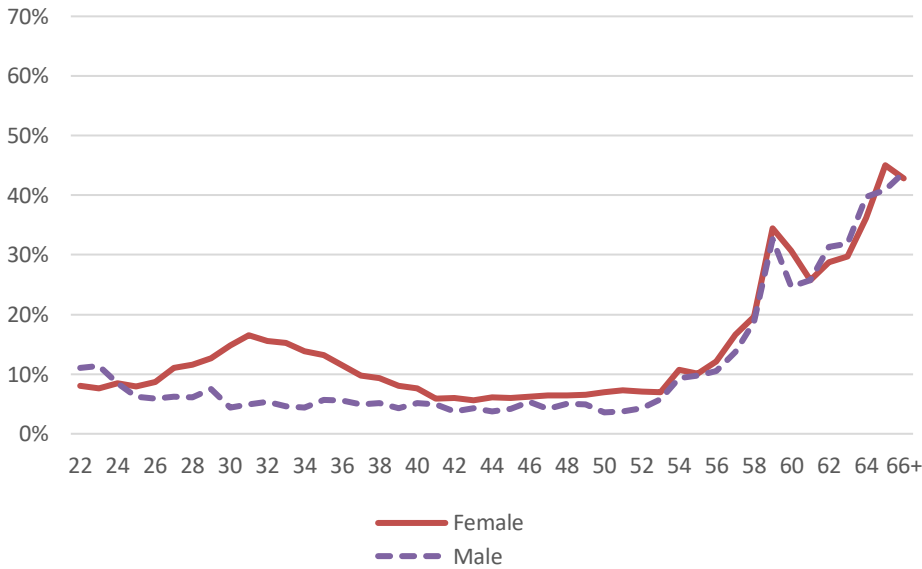
The higher reduction rates for women under 40 include maternity leave, whilst higher rates for those from their late-50s reflect retirement (both full and partial). The assumed rates used in the modelling for future years are based on an average of the past five years.

**Chart 3: Primary reduction rates by age**



The one-year reduction in primary teacher FTE for all ages, averaged over the past 5 years is 3,400 (excluding TIS).

**Chart 4: Secondary reduction rates**



The one-year reduction in secondary teacher FTE for all ages, averaged over the past 5 years is 2,600 (excluding TIS).

### 3.5. Additions to the teaching workforce

The number of additions to the teaching workforce represent the sum of all increases in FTE from one teacher census to the next. This number includes existing teachers increasing their hours and the appearance of teachers in the later census having not been present in the first. This latter category includes teachers returning to teaching after an absence of over a year as well as new teachers from outside Scotland and those on non-TIS probation routes. TIS probation teachers are accounted for separately.

Numbers are used instead of rates for additions as we do not have details of the pool of non-working teachers in any year. The assumed rates used in the modelling for future years are based on an average of the past five years. This equated to 2,500 FTE primary teacher and 1,800 FTE secondary teachers.

### 3.6. Working patterns

There has been an overall increase in the proportion of teachers working part-time over recent years from 23% in 2017 to 26% in 2023. The move to part-time working has been accounted for in the model, within the reduction and additions assumptions described above.

Table 2: Number of teachers (headcount) by mode of working, all sectors, 2017 - 2023

	Full-time	Part-time	Total headcount	Percentage part-time
2017	43,016	12,693	55,709	22.8
2018	43,198	13,265	56,463	23.5
2019	43,246	13,620	56,866	24.0
2020	44,387	13,564	57,951	23.4
2021	45,006	13,924	58,930	23.6
2022	44,493	14,419	58,912	24.5
2023				
Primary	19,344	9,429	28,773	32.8
Secondary	21,838	5,015	26,853	18.7
Special	1,671	667	2,338	28.5
Centrally employed	786	642	1,428	45.0
<b>2023 Total</b>	<b>43,854</b>	<b>15,123</b>	<b>58,977</b>	<b>25.6</b>

### **3.7. Teacher Induction Scheme (TIS) reduction rates**

The reduction rate for TIS represents the reduction in FTE of teachers between their TIS year and post-probation employment in the following year. Therefore, this rate accounts for reductions in FTE between TIS and post-probation due to teachers taking-up part-time posts following TIS, as well as reduction in FTE (to zero) of teachers not securing post-probation employment.

In previous years, the assumed TIS reduction rate used in the model was based on the average of the reduction rates observed over the past five years (26% of primary and 16% of secondary, 2019 to 2024). This assumption relies on the underlying premise that the limiting factor in teachers taking up post-probation employment is largely determined by the inclination of teachers to take-up the available posts. However, evidence (e.g. analysis attached at [Annex A](#)), indicates that, since 2019/20, around 950 primary teachers have completed probation but not been able to secure subsequent employment because of job availability.

Continuing with this assumption would result in an oversupply of teachers - i.e. 26% of primary and 16% of secondary teachers would not secure employment post-probation. Instead, this iteration of the model assumes a TIS reduction rate of 10%. This rate reflects the normal level of attrition observed in the historical data from times when job availability was not the main limiting factor in teachers taking-up post-probation employment.

### **3.8. Retention rates for ITE**

Retention rates for ITE represent the proportion of students that embark on an ITE course and then go on to the TIS. These rates vary between the route used for ITE study. Retention rates for primary undergraduate and for PGDE courses are around 70% and 80% respectively. Rates for secondary courses are around 55% for undergraduate (including combined degrees) and 75% for PGDE. These rates are relatively stable over time, although they have decreased slightly in recent years.

Probationers who chose the flexible route (an alternative to the one-year, full-time TIS route) are not captured in these retention rates, instead their entry to teaching is accounted for in the model as part of the pool of additions. Increasing use of the flexible route may account for the recent decrease in rates of student transitioning from ITE to the TIS.

### **3.9. Supply pool**

Supply pool teachers are not accounted for in the staff census, which counts only the normal complement members of staff or normal complement replacements. Teachers moving from a teaching position which is counted in the census to a supply post will be accounted for in the model in the reduction rates. No additional provision for supply staff has been included. We expect that the current level of supply pool will be maintained by staff entering it from the normal complement of teachers (the on-roll population, including probationers), accounted for by the reduction rates.

### **3.10. Vacancy data**

This data is no longer collected, and vacancies have not been accounted for in the model.

## **4. Modelling output**

### **4.1. Modelled implications of maintaining teacher numbers**

Using the data and approaches set out above, the teacher workforce planning model can be used to show the implications of maintaining teacher numbers across each sector at 2023 levels. This is shown in Table 3 which also includes the modelled overall PTR (across primary, secondary and special schools). The PTR in 2023 was 13.2, which compares to the lowest ever PTR of 12.9 in 2008. By 2026 the PTR is modelled to decrease to 12.8 and, if teacher numbers continue to be maintained, the PTR is modelled to decrease further, reaching 12.0 by 2029.

Table 3: Teacher number and PTR change from 2018 to 2029 (actual and modelled) [Note 1]

Year	All Teachers	Change in Teacher numbers from previous year	% change in teacher numbers	Pupil teacher ratio[Note 2]
2018	51,959	446	0.9%	13.6
2019	52,247	288	0.6%	13.6
2020	53,400	1,153	2.2%	13.3
2021	54,285	885	1.7%	13.2
2022	54,193	-92	-0.2%	13.2
2023	54,033	-160	-0.3%	13.2
2024	54,030	-3	0%	13.1
2025	54,030	0	0%	13.0
2026	54,030	0	0%	12.8
2027	54,030	0	0%	12.5
2028	54,030	0	0%	12.3
2029	54,030	0	0%	12.0

Note 1: Existing data shaded grey to distinguish from projected data in white.

Note 2: Pupil teacher ratios exclude teachers in ELC settings.

Tables 4 and 5 show the implications of maintaining teacher numbers for each sector. The primary PTR reached its lowest ever level in 2021 at 15.1. Were primary teacher numbers to be maintained, the PTR is modelled to drop to 14.1 by 2026 and 13.1 by 2029.

In contrast, the secondary PTR was 12.5 in 2023, which is very close to the highest secondary PTR since 2004. Were secondary teacher numbers to be maintained, the PTR is modelled to increase to 12.8 before dropping to 12.7 in 2026. The modelling indicates it will then decrease further to 12.3 by 2029.

Note 1: Existing data shaded grey to distinguish from projected data in white.

Note 2: The sum of sectors may not match the total due to rounding to the nearest 10.

Table 4: Teachers by sector 2018 to 2029 (actual and modelled) [Note 1]

	Primary	Secondary	Special	Centrally Employed	ELC	<b>Total [Note 2]</b>
2018	24,899	23,317	1,883	1,039	821	<b>51,959</b>
2019	25,027	23,522	1,927	972	798	<b>52,247</b>
2020	25,651	24,077	1,934	1,009	728	<b>53,400</b>
2021	25,807	24,782	2,005	988	704	<b>54,285</b>
2022	25,451	24,874	2,097	1,037	734	<b>54,193</b>
2023	25,096	25,049	2,075	1,111	702	<b>54,033</b>
2024	25,100	25,050	2,080	1,110	700	<b>54,030</b>
2025	25,100	25,050	2,080	1,110	700	<b>54,030</b>
2026	25,100	25,050	2,080	1,110	700	<b>54,030</b>
2027	25,100	25,050	2,080	1,110	700	<b>54,030</b>
2028	25,100	25,050	2,080	1,110	700	<b>54,030</b>
2029	25,100	25,050	2,080	1,110	700	<b>54,030</b>

Note 1: Existing data shaded grey to distinguish from projected data in white.

Note 2: Total includes centrally employed teachers but not teachers in ELC settings.

Table 5: PTR by sector 2018 to 2029 (actual and modelled) [Note 1]

	Primary	Secondary	Special	Total [Note 2]
2018	16.1	12.3	3.6	13.6
2019	15.9	12.4	3.7	13.6
2020	15.4	12.5	3.8	13.3
2021	15.1	12.4	3.8	13.2
2022	15.3	12.4	3.7	13.2
2023	15.3	12.5	3.7	13.2
2024	14.8	12.8	3.6	13.1
2025	14.5	12.8	3.6	13.0
2026	14.1	12.7	3.5	12.8
2027	13.8	12.6	3.5	12.5
2028	13.4	12.5	3.4	12.3
2029	13.1	12.3	3.3	12.0

## 4.2. Modelled PGDE ITE intake requirements

The modelled primary and secondary PGDE ITE intake requirements to meet the objective of maintaining teacher numbers across each sector at 2023 levels from 2026 onwards are shown in Table 6. This modelling assumes that BEd intakes remain at 2023 levels (760 primary and 240 secondary).

Table 6: Modelled PGDE ITE intake requirements to maintaining teacher numbers at 2023 levels (rounded to nearest ten)

ITE intake year	Primary PGDE	Secondary PGDE
2024/25	770	900
<b>2025/26</b>	<b>740</b>	<b>910</b>
2026/27	760	920
2027/28	740	910
2028/29	730	900
2029/30	720	890

The actual 2024/25 PGDE ITE intake targets were set at 955 for primary and 2,000 for secondary, which translated into estimated enrolments of 1,051 for primary and 1,062 for secondary. These enrolments are higher than those indicated by the current modelling but are broadly in line with the modelled ITE requirements presented in 2023 (1,000 in primary and secondary). However, it should be noted that the 2023 modelling was based on maintaining 54,200 FTE (versus 54,030 FTE in the current modelling) and with a TIS reduction rate assumption of 28% for primary and 19% for secondary (versus 10% for primary and secondary in the current modelling).

For 2025/26 the modelled PGDE ITE intake requirements are 740 for primary and 910 for secondary. For 2026/27 and beyond the modelled PGDE ITE intake requirements for primary and secondary increase slightly before decreasing through to 2029/30. This pattern is driven by the changes to the modelled age profile of the teaching workforce in the coming years.

The overall modelled ITE intake requirements for 2025/26 across BEd and PGDE are therefore 1,500 for primary and 1,150 for secondary.

## 5. Conclusion

The modelling presented here suggests that the PGDE ITE intake for 2025/26, required to maintain teacher numbers across each sector at 2023 levels (a total of 54,030 FTE) is 740 for primary and 910 for secondary.



## Annex A - Estimated surplus of primary teachers

**Since 2019/20, we estimate that an excess of approximately 950 primary teachers have been trained.**

Anecdotal evidence for over-supply of primary teachers has been reported. This paper sets out analysis to estimate the scale of the over-supply. It should be noted however that some rural local authorities still struggle to fill posts, indicating that this is not just an issue of availability of teaching posts but also of preferences by teachers for where they would like to work.

Primary pupil numbers increased every year from 2010 (365,326) until 2017 (400,312), since when they have decreased. Concurrently, the largest cohort of teachers in 2010 were in the 55-60 age bracket and set to retire as pupil numbers were increasing. Together these factors led to a need to train a higher number of primary teachers to maintain PTR in the following years.

Since 2017, primary pupil numbers have decreased and are projected to continue decreasing. The age profile of the current workforce is skewed towards the younger cohort, with less of the workforce due to reach retirement age in the near future. Therefore, the number of new primary teachers needing to be trained to maintain PTR is lower than in the early 2010s.

However, the number of teachers coming through ITE was maintained (at around 1,000) in line with the government's commitment to increase teacher numbers by 3,500 by 2026 (see Table 1). Up to 2021 this level of ITE was mostly absorbed by an increase in teacher numbers. However, in the past two years primary teacher numbers have dropped meaning that there have been substantially more new teachers trained than have been employed.

**Table 1 Primary PGDE ITE intake targets**

Intake year	Policy direction	Modelled target	Target set	Actual intake
2018	Maintain PTR	700	1,230	1,260
2019	Maintain PTR	550	1,230	1,326
2020	Maintain PTR	350	1,155	1,214
2021	Maintain PTR	550	1,155	1,203
2022	PfG 3,500 commitment	1,150	1,155	1,154
2023	PfG 3,500 commitment	1,200	955	1,043
2024	Maintain teacher numbers	1,000	955	-

The effect of this imbalance between training and employment can be seen in the published statistics on the employment status of post-probationers. These data show a clear decrease in teachers employed in the first year after probation from approximately 88% for the 2016/17 probationer cohort to 62% for the 2022/23 cohort.

Further analysis of the post-probationer employment data has been undertaken to produce an estimate of the excess of primary teachers that have been trained over those that have been employed. This analysis assumes, based on historical data, that a proportion of post-probationers will choose not to take-up employment in a publicly funded school in Scotland regardless of the availability of jobs. Taking this into account, it is estimated that since 2016/17 around 1,000 primary teachers have completed probation but not been able to secure subsequent employment because of job availability (see table 2). However, most of the surplus has accumulated in recent years, meaning that since 2019/20 the cumulative surplus is estimated to be around 950.

**Table 2 Estimated surplus of primary teachers following probation**

Probation cohort	Headcount estimated surplus	Cumulative surplus since 2016/17	Cumulative surplus since 2019/20
2016 / 2017	0	0	-
2017 / 2018	7	7	-
2018 / 2019	26	34	-
2019 / 2020	56	90	56
2020 / 2021	164	254	220
2021 / 2022	291	545	511
2022 / 2023	428	973	939

It is important to note that these estimates based on limited evidence to inform assumptions. Therefore, they should only be used to provide an indication of oversupply to help steer initial policy development.

Further caveats to note:

- most teachers working in supply would be categorised as not employed for the purposes of this analysis
- the analysis takes account of teachers' employment status as at 2023 with adjustments made for a decrease in employment rates over time under normal conditions, as observed in the historical data
- movement of teachers in/out of teaching more than 8 years after probation is not taken account in this analysis
- a breakdown at local authority level is not possible in this analysis due to the movement of teachers between training, probation and post-probation employment.



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