Department for Education

Evaluation of 2021 reformed national professional qualifications: impact evaluation

An impact evaluation based on analysis of administrative data

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1. Executive summary

The Department for Education (DfE) commissioned CFE Research to deliver a process and impact evaluation of the 2021 reformed National Professional Qualifications (NPQs). As part of this wider evaluation, CFE Research sub-contracted FFT Education Datalab to complete a quasi-experimental impact evaluation based on administrative data.

This report evaluates the impact of participation in the 2021 NPQs on three teacher level outcomes: promotion, retention in the state-funded teacher workforce, and retention in the same school.

Promotion is defined as either a change to a higher level role or an increase in Teaching and Learning Responsibility (TLR) payments.[1] Entrants are deemed to be retained in the state-funded teacher workforce if they are recorded in any teaching or leadership role in the School Workforce Census (SWC) in the outcome year, and to be retained in the same school if the Census records them in a teaching or leadership role in the same school in which they were recorded the year before starting their NPQ.

One school level outcome is also evaluated: the percentage of teachers retained in the same school. Retention in the same school is defined in the same way here as for the teacher level outcome above.

1.1 Methodology

This evaluation uses a quasi-experimental design, which relies on creating matched comparison groups based on data from the SWC and publicly available school level data. This means that it is not possible to control for factors not recorded in these datasets, including teachers' level of ambition, motivation to progress and commitment to teaching as a career. This has been mitigated to some extent by accounting for a teacher's career trajectory before entering an NPQ.

For both teacher and school level outcomes, matched comparison groups were created using nearest neighbour matching based on propensity scores. Regression models were then used to compare the outcomes of the matched comparison groups to the group being evaluated. Bootstrapping, with 1,000 samples, was used to create confidence intervals that take into account both the uncertainty from the matching process and the uncertainty from the modelling process. This report presents modelled estimates of the median percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. For the odds ratios, these estimates are based on

[1] Promotion is defined as moving to a higher-level role or receiving a qualifying TLR increase. However, some smaller TLR3 payments may still be captured because the SWC does not distinguish between TLR types. Moreover, most NPQEL entrants were already in the highest salary band, limiting scope for this promotion analysis. See section 3.1 for a fuller definition of this and other teacher level outcomes.

bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

To make the results easier to interpret, the odds ratios were also converted into estimated percentages. For each of the 1,000 bootstrapped models, the percentage of teachers who would be promoted or retained was estimated in two scenarios: 1. as if every teacher in the matched sample had entered an NPQ, and 2. as if none had entered an NPQ. The difference between these two estimates (all entered minus none entered) represents the estimated impact of NPQ participation, expressed in percentage points.

For the teacher level outcomes, the outcomes of participating teachers were compared to those of teachers from a comparison group made of teachers who did not take an NPQ. For the school level outcome, there were considerable difficulties in creating a suitable comparison group because of the small number of schools with no entrants to NPQs. Rather than comparing the effect of participating schools to non-participating schools, an alternative method was therefore used, which involved comparing the impact of low and high dosage schools.

Dosage was based on the proportion of teachers in a school who had entered a 2021 NPQ and high and low dosage was defined separately for each cohort; direct comparison between cohorts is not possible because the distribution of NPQ participation across schools would differ over time. This statistical approach relies on high and low dosage groups being well-defined and clearly distinct from one another. If this were not the case, the results would be difficult to interpret.

Due to relatively small sample sizes, it was not possible to present any results for teachers based in alternative provision (AP), or any results broken down by qualification for teachers based in special schools.

The evaluation covers the first four cohorts of entrants to 2021 NPQs. Cohort 1 entrants started their qualification in November 2021, Cohort 2 in February 2022, Cohort 3 in October 2022 and Cohort 4 in February 2023. See table 1 in section 2.1 for more information on cohorts, including start and end dates for entrants.

NPQs fall into one of two qualification types: Leadership (LNPQ - for teachers and school leaders who want to develop leadership skills or progress to a leadership role) and Specialist (SNPQ – for teachers and school leaders who wish to broaden and deepen their expertise in specialist areas). Table 1 in section 2.1 also shows which cohorts and NPQs were included in the impact analysis. Note that the subgroup analysis for individual qualifications, particularly NPQEL and the newer NPQEYL and NPQLL, is based on relatively low entry numbers, which may have contributed to wider confidence intervals especially in the phase-level breakdowns.

Results are reported by cohort and are broken down by school phase, qualification type and individual qualification.

1.3 Findings

1.3.1 Teacher level outcomes

Impact on teacher level outcomes is reported in the form of odds ratios in the main body of this report, but to get a sense of how they translate into actual differences in outcomes this report also presents modelled estimates of the median percentage of teachers who would be promoted or retained if they were either all NPQ entrants, or all non-entrants.[2] These percentage point differences will be referred to throughout this section. Both odds ratios and percentage point differences are presented with confidence intervals to reflect statistical uncertainty and aid interpretation of the findings.

1.3.1.1 Overall findings

The teacher level evaluation found evidence of a positive impact on all three outcomes, both one and two years after starting the qualifications. Based on estimated odds ratios, retention in the state-funded teacher workforce was the most strongly impacted of the three outcomes, followed by promotion, with a relatively low impact on retention in the same school.

The estimated percentage of teachers retained in the state-funded teacher workforce one year after starting an NPQ ranged from 7 percentage points higher for NPQ entrants than non-entrants for the cohort with the smallest impact, to 9 percentage points higher for the cohort with the largest. Two years after starting, it ranged from 11 to 13 percentage points higher. The difference in the estimated percentage receiving a promotion one year after starting an NPQ was 5 to 6 percentage points higher for NPQ entrants than non-entrants, and 6 to 7 percentage points higher two years after starting. For retention in the same school, the difference was 3 to 7 percentage points higher one year after starting NPQ and 7 to 8 two years after starting NPQ.

1.3.1.2 Differences by qualification type

Significant positive effects were found on all three outcomes for both Leadership and Specialist NPQs. The effects on promotions were higher for Leadership NPQs than for Specialist, while the effects on retention in the state-funded teacher workforce were similar and the effects on retention in the same school were lower. This translated into a difference of 8 to 11 percentage points in promotion two years after starting an NPQ for Leadership qualifications compared to 3 to 4 for Specialist, 11 to 13 percentage points in retention in the state-funded teacher workforce for Leadership compared to 12 to 14 for Specialist, and 4 to 7 in retention in the same school for Leadership compared to 9 to 10 for Specialist.

[2] As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

When broken down by qualification, results broadly reflected the breakdowns by type: individual Leadership NPQs tended to have higher estimated effects on promotion than the individual Specialist NPQs. There were, however, exceptions for some individual qualifications. See section 5.1 for a more detailed discussion.

1.3.1.3 Differences by phase

When looking at results overall and for Leadership and Specialist qualifications results were broken down into three phases: primary, secondary and special schools.[3] Due to sample size issues, this was not possible when looking at individual qualifications, and here results were broken down into primary and secondary only.

While the programme's effect on promotion was positive and statistically significant for all phases, it did vary by phase, with the strongest impacts observed in special schools and the weakest in secondary schools. However, the confidence intervals for special schools were wider than those for other phases, reflecting greater uncertainty around these estimates due to the small sample, which should be interpreted with caution. Two years after starting an NPQ, the difference in estimated percentages for Cohort 4 entrants was 9 percentage points in special schools, 6 in primary schools and 5 in secondary schools.

The same pattern held for retention in the state-funded teacher workforce: the difference in estimated percentages for Cohort 4 entrants two years after starting an NPQ was 15 percentage points in the special phase, 14 in the primary phase and 12 in the secondary phase.

For retention in the same school, the picture was mixed. While point estimates for the special phase tended to be higher, the estimated impact for one cohort was insignificant. For some cohorts, the impact on primary was higher than on secondary, and for some vice versa.

When looking at breakdowns by phase and qualification, a similar pattern was generally seen, with some exceptions. See section 5.1 for a more detailed discussion.

1.3.1.4 Differences by cohort

While the patterns described above were broadly consistent across all four cohorts, the effects on both retention in the state-funded teacher workforce and retention in the same school one year after starting an NPQ tended to be stronger for Cohorts 1 and 3: the cohorts that started their qualifications in autumn as opposed to spring. However, the effects for two years after starting an NPQ were more similar across all four cohorts.

These differences translated into relatively small differences in estimated percentages between NPQ entrants and non-entrants: for teachers retained in the state-funded teacher workforce, the differences one year after starting an NPQ, for Cohorts 1 and 3 were 7 and 9 percentage points, compared to 7 and 8 for Cohorts 2 and 4. For teachers

[3] Due to sample size issues, breakdowns for AP centres were not included in this evaluation.

retained in the same school, the differences for Cohorts 1 and 3 were 5 and 7 percentage points, compared to 3 and 3 for Cohorts 2 and 4.

1.3.2 School level outcomes

In the school level evaluation, no clear evidence was found of an impact on teacher retention in the same school for high dosage schools compared to low dosage schools for schools with NPQ entrants. All estimates were either inconclusive or negative; that is, none were both statistically significant and positive. This applies to all breakdowns by phase and to all four cohorts.

2. Introduction

2.1 Overview

The DfE commissioned CFE Research to deliver a process and impact evaluation of the 2021 reformed National Professional Qualifications (NPQs). As part of this wider evaluation, CFE Research sub-contracted FFT Education Datalab to carry out a quasi-experimental impact evaluation based on administrative data. The aim of this impact evaluation is to understand the impact of participation in 2021 NPQs on teachers and schools, focusing on entrants who started NPQs between autumn 2021 and spring 2023[4]. It includes all NPQ entrants regardless of funding status.

The study is split into two parts: teacher level outcomes and school level outcomes. This report looks at the impact of participating in NPQs on three teacher level outcomes and one school level outcome:

- Teacher level: promotion, retention in the state-funded teacher workforce, retention in the same school
- School level: retention in the same school

For the purpose of this evaluation and reporting, reference is made to cohorts. Cohorts refer to the groups of entrants and when they started their qualification, as outlined in table 1. The evaluation covers the first four cohorts of entrants to 2021 NPQs.

[4] To note – this impact analysis includes all NPQ participants unlike the main report which focused on DfE funded participants.

Table 1: Cohort start and end dates and included NPQs

Cohort	Type	NPQs included	Start date	End date
Cohort 1	Specialist	NPQ for Leading Behaviour and Culture (NPQLBC) NPQ for Leading Teacher Development (NPQLTD) NPQ for Leading Teaching (NPQLT)	November 2021	January 2023
Cohort 1	Leadership	NPQ for Executive Leadership (NPQEL) NPQ for Headship (NPQH) NPQ for Senior Leadership (NPQSL)	November 2021	July 2023
Cohort 2	Specialist	NPQ for Leading Behaviour and Culture (NPQLBC) NPQ for Leading Teacher Development (NPQLTD) NPQ for Leading Teaching (NPQLT)	February 2022	May 2023
Cohort 2	Leadership	NPQ for Executive Leadership (NPQEL) NPQ for Headship (NPQH) NPQ for Senior Leadership (NPQSL)	February 2022	November 2023
Cohort 3	Specialist	NPQ for Leading Behaviour and Culture (NPQLBC) NPQ for Leading Teacher Development (NPQLTD) NPQ for Leading Teaching (NPQLT) NPQ for Leading Literacy (NPQLL)	October 2022	January 2024

Cohort	Type	NPQs included	Start date	End date
Cohort 3	Leadership	NPQ for Executive Leadership (NPQEL) NPQ for Headship (NPQH) NPQ for Senior Leadership (NPQSL) NPQ for Early Years Leadership (NPQEYL)	October 2022	July 2024
Cohort 4	Specialist	NPQ for Leading Behaviour and Culture (NPQLBC) NPQ for Leading Teacher Development (NPQLTD) NPQ for Leading Teaching (NPQLT) NPQ for Leading Literacy (NPQLL)	February 2023	May 2024
Cohort 4	Leadership	NPQ for Executive Leadership (NPQEL) NPQ for Headship (NPQH) NPQ for Senior Leadership (NPQSL) NPQ for Early Years Leadership (NPQEYL)	February 2023	November 2024

Source: FFT analysis

2.2 Data

This report is mainly based on analysis of the School Workforce Census (SWC). SWC data was combined with DfE held management information on NPQ entrants and publicly available school level data supplied by DfE.

Specifically, the following were used:

- SWC 2012 to 2024
- NPQ management information (MI) data 2017 to 2024
- Publicly available school level data:
    - Published school level absence data 2014 to 2024
    - Published school level exclusions data 2014 to 2023

- Published final key stage 2 (KS2) data 2016 to 2024
- Published final key stage 4 (KS4) data 2016 to 2024
- Published Schools, Pupils and their Characteristics data 2016 to 2024
- Get Information About Schools (GIAS) 2016 to 2024
- Ofsted management information data 2016 to 2024

The SWC is an administrative dataset owned by the Department for Education (DfE) and made available to researchers on application. It provides a rich set of information on school staff, including demographics, employment, absence, qualification and curriculum data on teachers working in state schools in England.

The SWC covers all state schools in England. However, in some cases data is missing where schools' submissions were incomplete or where the Census was not returned in a particular year. Throughout this report, instances where teachers or schools were excluded due to missing data are noted, although this affected a relatively small number of units.

Some changes were made to the data where values supplied were implausible. Where the recorded full-time equivalent salary was less than the national minimum wage for the relevant year, the salary from the previous year was used. Similarly, where the recorded age was less than 18, the age for the previous year plus one was used. Teachers with no recorded age of 18 or over in any year were excluded; this did not affect any NPQ entrants.

This work contains statistical data from the DfE which is Crown Copyright. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

3. Teacher level outcomes

3.1 Methodology

The methodology for this impact evaluation was determined based on a feasibility study[5] completed in January 2026.

Results are broken down by school phase (primary / secondary / special) and by qualification type (Leadership / Specialist). Due to small sample sizes, it is not possible to provide any results for teachers in AP, though raw outcomes are provided broken down by school phase, including AP, in section 3.3.5. Results are also broken down by individual qualification and school phase. Unfortunately, due to issues with small sample sizes, it is not possible to provide reliable results for special schools when breaking down by individual qualification; the results obtained had extremely wide confidence intervals to the point that no useful information was being provided.

For each school phase and qualification type, NPQ entrants are matched to similar individuals who did not participate in an NPQ, then regression models are used to compare the outcomes of entrants to those in the matched comparison group. Any differences will be assumed to be due to participation in NPQs.

Matching was completed using 1:1 nearest neighbour matching based on propensity scores, and matched on the following variables:

- School level characteristics (region, phase, % of pupils eligible for free school meals (FSM), % of pupils with English as an additional language (EAL), historical levels of retention and promotions)
- Teacher level characteristics (age, sex, role)
- Indicators of career trajectory (promotion in last three years, salary, years in role, years in school)

The matches were assessed based on standardised mean difference (SMD), and a good match was considered to be one in which the SMD is within the (-0.2, 0.2) range for every matching variable. Comparison groups were drawn from the pool of teachers who were not part of any cohort of 2021 entrants, or any NPQ from 2017 onwards.

Regression models were fitted to the matched data, controlling again for selected variables (length of time in role, salary, percentage of FSM and EAL pupils in school). Not all of the variables included in the matching were controlled for, to avoid overfitting; continuous variables with large differences before matching, or that had relatively poor balance after matching, were included.

[5] The feasibility study has not been published.

Bootstrapping, with 1,000 samples, was used to create confidence intervals that take into account both the uncertainty from the matching process and the uncertainty from the modelling process.

The outcomes assessed are:

- Promotion
- Retention in the state-funded teacher workforce
- Retention in the same school

Promotion is defined as either a change to a higher-level role or an increase in Teaching and Learning Responsibility (TLR) payments of at least 20%, provided the total TLR payment after the increase was greater than the annual maximum amount payable as a TLR3 payment in the relevant year.

TLR3 payments are given for a temporary increase in responsibility rather than a permanent change. Ideally, the increase in TLR payments would be based solely on increase in TLR1 or TLR2 payments. Unfortunately, it is not possible to identify TLR1, 2 and 3 payments separately in the SWC. However, it was possible to exclude some TLR3 payments based on amount: in 2022, for example, TLR1 payments were required to be no less than £8,706 annually, and TLR2 no less than £3,017. TLR3 payments were required to be no greater than £2,975. Any TLR payments of less than £3,000 were therefore excluded when determining whether a teacher had been promoted in 2022.[6]

The level of a role was determined based on six bands:

- Band 1: Executive Head Teacher, Headteacher
- Band 2: Deputy Head
- Band 3: Assistant Head
- Band 4: Advanced Skills Teacher, Excellent Teacher, Leading Practitioner
- Band 5: Classroom Teacher, Advisory Teacher
- Band 6: Apprentice Teacher

Note that apprentice teachers (band 6) are excluded from this evaluation.

An appendix is included showing descriptive statistics and outcomes using an alternative measure of promotion in which TLR payments are not taken into account (section 6.3).

Entrants are deemed to be retained in the state-funded teacher workforce if they are recorded in any teaching or leadership role in the SWC in the outcome year. They are

[6] These amounts are based on the 2022 and 2023 guidance documents from School teachers' pay and conditions - GOV.UK. Note that the requirements applied will not exclude all increases due to a TLR3: in cases where a teacher is already receiving a TLR1 or TLR2, it will not be possible to determine if an increase came from their TLR1 or TLR2 payment increasing, or because they had a TLR3 payment added.

deemed to be retained in the same school if they are recorded as being in any teaching or management role in the same school (or a successor school) in the outcome year as the school in which they were recorded in the year before starting their NPQ.

The impact on each of these outcomes is examined one and two years after starting an NPQ, based on the SWC which is updated annually in November. This means that the time period between course start and outcome measurement differs between Cohorts 1 and 3, which started in the autumn, and Cohorts 2 and 4, which started in February, see table below.

Table 2: SWC used to measure outcomes one and two years after starting an NPQ, by cohort

Cohort	NPQ start date	SWC used for 1 year after starting NPQ	SWC used for 2 years after starting NPQ
Cohort 1	November 2021	November 2022	November 2023
Cohort 2	February 2022	November 2022	November 2023
Cohort 3	October 2022	November 2023	November 2024
Cohort 4	February 2023	November 2023	November 2024

Source: FFT analysis

3.2 Limitations

3.2.1 Unobserved selection effects

This evaluation uses a quasi-experimental design, which relies on creating matched comparison groups based on data from the SWC and publicly available school level data. This means that it is not possible to control for factors not recorded in these datasets.

In particular, it is not possible to control for teachers' level of ambition, motivation to progress and commitment to teaching as a career, or for levels of satisfaction with their current school. These issues were noted in the evaluation of the 2017 NPQs[7], and it was possible to mitigate them to some extent by creating a comparison group that accounts for a teacher's career trajectory before entering an NPQ. However, this mitigation is not perfect, and if, for example, teachers who enter NPQs have higher levels of motivation and commitment to their teaching careers than teachers in the matched comparison group, this may lead to overestimation of the impact.

[7] This evaluation is available at https://www.gov.uk/government/publications/evaluation-of-the-2017-national-professional-qualifications.

A selection effects sensitivity test was used to try to assess the extent to which this is the case. This test involved repeating the teacher level evaluation of Cohort 1 entrants based on data from before NPQ entrants entered their NPQ. NPQ entrants were found to be more likely to receive a promotion in the period before entering an NPQ than matched comparison teachers, but they were not more likely to be retained in the same school. The effects observed on promotion were less strong than those observed after NPQ entry. This suggests that, while unobserved differences affecting promotions may exist, they are unlikely to account for all of the impact observed in this evaluation, and that unobserved differences affecting retention in the same school may not be impacting results. Full results are shown in appendix 6.2.

3.2.2 Definition of promotion

Promotion is defined as either a change to a higher-level role (based on six bands – see section 3.1 for details) or an increase in TLR payments of at least 20%, provided the total TLR payment after the increase was greater than the annual maximum amount payable as a TLR3 payment in the relevant year. However, as it is not possible to distinguish between TLR payments of different types in the SWC data, some teachers may be identified as having been promoted when in fact they received an additional, temporary, TLR3 payment.

Appendix 6.3 presents some raw figures on promotions for each cohort based on an alternative definition of promotion that does not use TLR payments. Under this definition, teachers were around 2 to 4 percentage points less likely to receive a promotion two years after starting an NPQ than under the definition used in the main report.

If future evaluations have the data on the different TLR payments available then excluding TLR3 payments altogether would be a useful approach.

There was also an issue with measuring the impact on promotion for entrants to the NPQEL: most entrants entering the qualification were already in the highest band when they entered the qualification, meaning that promotion was not possible under this definition. Future evaluations could consider adding another top-level band if sample size allows; aggregating across cohorts may make this more practical.

3.2.3 Sample size issues

Due to relatively small sample sizes, it was not possible to present any results for teachers based in AP, or any results broken down by qualification for teachers based in the special phase. Although raw differences in outcomes are presented in section 3.3.5, these do not control for differences in school and teacher characteristics and career trajectory.

Some qualifications, particularly NPQEL and the newer qualifications, NPQEYL and NPQLL, had relatively low entry numbers, which may have contributed to wider confidence intervals particularly in breakdowns by phase.

Future evaluations could consider aggregating results across cohorts to increase sample sizes or reducing the matching and modelling criteria, although caution would need to be used if directly comparing results from this evaluation to those obtained using different methodology. Aggregating across cohorts would be a strong option as relatively small differences between cohorts have been observed as part of this evaluation.

3.3 Descriptive statistics

This section first presents some descriptive statistics on the number of staff entering the 2021 NPQs and their characteristics, the type of schools they worked for, and their career trajectory before entering an NPQ.

3.3.1 Overview

The table below shows the total number of individuals entering NPQs in Cohorts 1 to 4.

Table 3: Numbers entering NPQs in Cohorts 1 to 4 by qualification and qualification type

Cohort	Type	Qualification	Entries
Cohort 1	Leadership	NPQEL	590
	Leadership	NPQH	2,232
	Leadership	NPQSL	4,950
	Leadership	LEADERSHIP TOTAL	7,772
	Specialist	NPQLBC	1,667
	Specialist	NPQLTD	3,056
	Specialist	NPQLT	3,731
	Specialist	SPECIALIST TOTAL	8,454
		TOTAL	16,226
Cohort 2	Leadership	NPQEL	469
	Leadership	NPQH	1,697
	Leadership	NPQSL	3,546
	Leadership	LEADERSHIP TOTAL	5,712
	Specialist	NPQLBC	1,972
	Specialist	NPQLTD	1,910

Cohort	Type	Qualification	Entries
	Specialist	NPQLT	3,696
	Specialist	SPECIALIST TOTAL	7,578
		TOTAL	13,290
Cohort 3	Leadership	NPQEL	859
	Leadership	NPQH	3,028
	Leadership	NPQSL	6,271
	Leadership	NPQEYL	1,714
	Leadership	LEADERSHIP TOTAL	11,872
	Specialist	NPQLBC	2,612
	Specialist	NPQLTD	2,149
	Specialist	NPQLT	4,991
	Specialist	NPQLL	1,952
	Specialist	SPECIALIST TOTAL	11,704
		TOTAL	23,576
Cohort 4	Leadership	NPQEL	495
	Leadership	NPQH	1,433
	Leadership	NPQSL	2,863
	Leadership	NPQEYL	1,451
	Leadership	LEADERSHIP TOTAL	6,242
	Specialist	NPQLBC	1,606
	Specialist	NPQLTD	1,059
	Specialist	NPQLT	2,524
	Specialist	NPQLL	1,157
	Specialist	SPECIALIST TOTAL	6,346
		TOTAL	12,588

Source: NPQ MI data

NPQs with an autumn start tended to have more entrants. The Leadership NPQs, had fewer entries than the Specialist NPQs, with the NPQEL having the fewest and the NPQSL the most. The NPQLT consistently had the most entries of the Specialist NPQs.

Some more detailed descriptive statistics are considered next. To do so, a small number of entrants for whom relevant data is missing from the SWC or other data sources were removed.

This section starts by looking at teacher characteristics, then the characteristics of their school, and finally at their career trajectory and role. The tables included in the main body of the report focus on Cohort 1; for full descriptive statistics on all four cohorts, see appendix spreadsheet 'Appendix – descriptive stats'.

3.3.2 Teacher characteristics

The table below shows the percentage of teachers broken down by characteristics, for those who entered an NPQ in Cohort 1 and for all teachers in the 2020 SWC.

Table 4: Teacher characteristics, Cohort 1 entrants vs all teachers

Characteristic	Level	Cohort 1	All
Region	East Midlands	8%	8%
	East of England	10%	11%
	Inner London	7%	6%
	North East	6%	5%
	North West	16%	14%
	Outer London	11%	10%
	South East	14%	16%
	South West	8%	10%
	West Midlands	12%	11%
	Yorkshire and The Humber	7%	9%
Sex	Female	71%	76%
	Male	29%	24%
Average age		36	40

Source: NPQ MI, GIAS and SWC data

There were not any large regional differences: the percentage of NPQ participants from each region was similar to the proportion of all teachers from each region.

Cohort 1 entrants included a higher percentage of male teachers than the overall population. They were also younger, on average, than the overall teaching population.

Although the detailed figures shown here relate specifically to Cohort 1, the characteristics of participating teachers are very similar across all four cohorts, and there are no noticeable differences that are likely to impact comparisons between cohorts.

3.3.3 School characteristics

The table below shows the percentage of teachers broken down by school characteristics, for those who entered an NPQ in Cohort 1 and for all teachers.

Table 5: School characteristics, Cohort 1 entrants vs all teachers

Characteristic	Level	Cohort 1	All
School phase	Primary	46%	51%
	Secondary	47%	44%
	Special	5%	4%
	AP	1%	1%
Average % of FSM6 pupils		22%	19%
Average % of EAL pupils		21%	19%
Average % of staff promoted in last 3 years		4%	4%
Average % of staff retained in last 3 years		83%	84%

Source: NPQ MI, GIAS and SWC data

Cohort 1 entrants worked in schools with slightly higher percentages of pupils eligible for FSM and with EAL, on average, than the overall population. They also worked in schools with a similar rate of promotions over the last three years, and a very slightly lower rate of teacher retention over the last three years. Primary teachers made up a lower percentage of entrants than the overall population.

Although the detailed figures shown here relate specifically to Cohort 1, most of these findings hold true across all four cohorts. The exception is the percentage of FSM and EAL pupils; this varied across cohorts but differences were not more than three percentage points for any cohort. Full descriptive statistics on all four cohorts can be found in the appendix spreadsheet ‘Appendix – descriptive stats’.

3.3.4 Career trajectory

The table below shows the percentage of teachers broken down by role, salary and other information associated with their career trajectory, for those who entered an NPQ in Cohort 1 and for all teachers.

Table 6: Career trajectory, Cohort 1 entrants vs all teachers

Characteristic	Level	Cohort 1	All
Role	Classroom teacher/other[8]	78%	85%
	Deputy or Assistant Head	17%	10%
	Head or Exec Head	5%	5%
Promoted in last 3 years		20%	11%
Average salary		£44,667	£43,019
Average time in school[9]		5.7	7.2
Average time in role		3.3	4.2

Source: NPQ MI and SWC data

Compared to all teachers, Cohort 1 entrants were more likely to be in a senior role. Around a fifth had been promoted in the last three years, compared to around a tenth of all teachers. They had a slightly higher average salary and tended to have been in both their school and their current role for fewer years, on average, than the population.

Although the detailed figures shown here relate specifically to Cohort 1, these findings hold true across all four cohorts.

3.3.5 Raw differences in outcomes

This section shows how the outcomes for Cohort 1 NPQ entrants compare to all teachers and leaders before any matching or modelling has been applied, broken down by school phase. Primary, secondary, special and AP are included in the descriptive tables below but regression results for special and AP schools are omitted from many of the breakdowns shown in the subsequent results section due to relatively small sample sizes.

[8] This includes classroom teachers, leading practitioners, advanced skills teachers and advisory teachers.
[9] Refers to the average continuous number of years working in the same school. Similarly, average time in role refers to the average continuous number of years working in their current positions, i.e. in the same role in the same school.

Table 7: Raw differences in outcomes – one year after starting an NPQ

Outcome	Phase	Cohort 1	All
Promotion	All	8%	4%
Retention teaching	All	99%	91%
Retention school	All	87%	80%
Promotion	Primary	7%	4%
Retention teaching	Primary	99%	91%
Retention school	Primary	87%	80%
Promotion	Secondary	9%	5%
Retention teaching	Secondary	99%	91%
Retention school	Secondary	86%	80%
Promotion	Special	11%	5%
Retention teaching	Special	98%	89%
Retention school	Special	87%	79%
Promotion	AP	11%	6%
Retention teaching	AP	98%	86%
Retention school	AP	86%	75%

Source: NPQ MI and SWC data

Table 8: Raw differences in outcomes – two years after starting an NPQ

Outcome	Phase	Cohort 1	All
Promotion	All	11%	5%
Retention teaching	All	95%	84%
Retention school	All	77%	69%
Promotion	Primary	10%	4%
Retention teaching	Primary	96%	84%
Retention school	Primary	78%	69%
Promotion	Secondary	12%	6%
Retention teaching	Secondary	94%	85%
Retention school	Secondary	75%	69%
Promotion	Special	14%	5%
Retention teaching	Special	96%	83%
Retention school	Special	80%	69%
Promotion	AP	9%	6%
Retention teaching	AP	92%	78%
Retention school	AP	74%	62%

Source: NPQ MI and SWC data

Across all phases and outcomes, the descriptive statistics above show that NPQ entrants were more likely to be promoted, retained in teaching and retained in the same school than teachers overall. Although the figures shown here relate to Cohort 1 specifically, the same is true of other cohorts.

The fact that relatively few teachers are promoted each year has implications for the odds ratios that might be expected after matching and modelling. Where the outcome is a relatively rare event, odds ratios will appear larger than they would for a more common event for any given sample size. High odds ratios and high upper confidence intervals may, therefore, be seen for this outcome. The same is true of retention in teaching; in this case, *not* being retained in teaching is a relatively rare event.

3.4 Matching

As described above, participating teachers were matched to non-participating teachers using nearest neighbour matching based on propensity scores. The matches were assessed based on standardised mean difference (SMD), and a good match was considered to be one in which the SMD is within the (-0.2, 0.2) range for every matching variable.

In almost every case, it was possible to create very good matches, with the balance well within the 0.2 threshold. However, some of the breakdowns by phase are less well-matched, particularly secondary school teachers who took the two newer qualifications, NPQEYL (Cohort 3) and NPQLL (Cohort 4). The poorer matches for these groups may reflect higher within-group variability and / or relatively small sample sizes compared to other groups.

Table 9: Percentage of matching variables matched to within 0.2 threshold

Qualification	Phase	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	All	100	100	100	100
	Primary	100	100	100	100
	Secondary	100	100	100	100
	Special	100	100	100	100
	AP	96.2	100	96.2	84.6
Leadership	All	100	100	100	100
	Primary	100	100	100	100
	Secondary	100	100	96.2	100
	Special	96.2	100	100	100
Specialist	All	100	100	100	100
	Primary	100	100	100	100
	Secondary	96.2	100	100	100
	Special	100	100	100	92.3
NPQEL	All	100	100	96.2	96.2
	Primary	100	100	100	100
	Secondary	96.2	100	88.5	100
NPQH	All	100	100	100	100
	Primary	100	100	100	100
	Secondary	96.2	100	96.2	96.2
NPQSL	All	100	96.2	96.2	96.2
	Primary	100	96.2	100	96.2
	Secondary	100	96.2	96.2	96.2
NPQEYL	All	NA	NA	100	100
	Primary	NA	NA	100	100
	Secondary	NA	NA	46.2	100

Qualification	Phase	Cohort 1	Cohort 2	Cohort 3	Cohort 4
NPQLBC	All	100	100	100	100
	Primary	100	100	100	100
	Secondary	100	100	100	100
NPQLTD	All	100	100	100	100
	Primary	100	100	100	100
	Secondary	100	100	100	100
NPQLT	All	100	100	100	100
	Primary	96.2	100	100	100
	Secondary	96.2	100	100	100
NPQLL	All	NA	NA	100	100
	Primary	NA	NA	100	100
	Secondary	NA	NA	100	69.2

Source: NPQ MI and SWC data

A sensitivity analysis was also completed for Cohort 1 entrants using a different matching method (coarsened exact matching). The results obtained from coarsened exact matching were similar to those obtained using propensity score matching, suggesting that this analysis was not overly sensitive to the matching method used. These results are included in full as appendix 6.1.

3.5 Results

Results are now presented for all outcomes and breakdowns. As all outcomes are binary, all results are presented as odds ratios. An odds ratio above 1 indicates that NPQ entrants are more likely to have a positive outcome than teachers in the comparison group, and an odds ratio below 1 that they are less likely. An odds ratio of 1 suggests no difference.

For all outcomes, a point estimate and lower and upper confidence intervals are included in brackets. Positive outcomes (those above 1) are statistically significant if the lower confidence interval is also above 1. The confidence intervals include 98.3% of the range of the bootstrapped estimates. A level of 98.3% is used rather than the more usual 95% to correct for the use of multiple outcomes: a Bonferroni correction is applied to reduce alpha = 0.05 to alpha = 0.017.

Note that where confidence intervals include extreme values of >= 100, results are not shown.

3.5.1 All qualifications

This section presents estimates of the impact across all qualifications, broken down by school phase, with the exception of AP centres. These are excluded due to low sample size.

The table below shows the estimated impact of entering an NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Table 10: Estimated impact (odds ratios), all entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	2.74* (2.29, 3.28)	2.70* (2.21, 3.36)	2.78* (2.40, 3.31)	2.86* (2.27, 3.66)
All	Retention teaching	6.89* (5.71, 8.33)	4.86* (3.93, 5.93)	6.19* (5.32, 7.23)	4.15* (3.29, 5.06)
All	Retention school	1.47* (1.33, 1.64)	1.25* (1.12, 1.38)	1.65* (1.52, 1.79)	1.24* (1.11, 1.40)
Primary	Promotion	3.21* (2.38, 4.43)	3.47* (2.52, 4.77)	3.11* (2.43, 4.04)	3.35* (2.28, 5.24)
Primary	Retention teaching	6.85* (5.17, 9.35)	5.35* (4.06, 7.18)	7.02* (5.48, 8.9)	4.85* (3.54, 6.71)
Primary	Retention school	1.55* (1.35, 1.76)	1.27* (1.10, 1.48)	1.63* (1.44, 1.81)	1.20* (1.01, 1.42)
Secondary	Promotion	2.31* (1.83, 2.92)	2.20* (1.73, 2.9)	2.48* (2.02, 3.13)	2.52* (1.84, 3.47)
Secondary	Retention teaching	7.13* (5.14, 9.6)	4.60* (3.37, 6.02)	5.61* (4.42, 7.21)	3.55* (2.64, 4.76)
Secondary	Retention school	1.39* (1.20, 1.59)	1.25* (1.07, 1.45)	1.69* (1.49, 1.89)	1.29* (1.08, 1.53)
Special	Promotion	4.45* (2.33, 13.85)	3.58* (1.43, 26.09)	3.15* (1.61, 7.34)	3.12* (1.13, 17.82)
Special	Retention teaching	5.51* (2.74, 12.74)	4.87* (2.22, 12.54)	7.03* (3.42, 17.74)	7.02* (2.22, 35.56)
Special	Retention school	1.64* (1.07, 2.49)	1.18 (0.75, 1.87)	1.78* (1.19, 2.52)	1.51 (0.80, 2.65)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Table 11: Estimated impact (odds ratios), all entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	3.19* (2.73, 3.77)	3.19* (2.65, 3.86)	2.98* (2.55, 3.50)	2.78* (2.23, 3.47)
All	Retention teaching	3.83* (3.40, 4.30)	4.08* (3.58, 4.70)	3.74* (3.36, 4.16)	4.37* (3.70, 5.15)
All	Retention school	1.49* (1.37, 1.62)	1.42* (1.29, 1.54)	1.48* (1.38, 1.60)	1.43* (1.28, 1.57)
Primary	Promotion	3.84* (2.97, 5.00)	4.12* (2.99, 5.81)	4.02* (3.11, 5.30)	3.56* (2.53, 5.55)
Primary	Retention teaching	4.55* (3.78, 5.52)	4.96* (4.04, 6.11)	4.24* (3.61, 4.99)	5.05* (3.94, 6.59)
Primary	Retention school	1.56* (1.41, 1.75)	1.43* (1.25, 1.63)	1.51* (1.37, 1.68)	1.39* (1.19, 1.60)
Secondary	Promotion	2.74* (2.21, 3.45)	2.49* (1.97, 3.26)	2.30* (1.90, 2.81)	2.24* (1.73, 3.01)
Secondary	Retention teaching	3.21* (2.67, 3.84)	3.51* (2.86, 4.27)	3.30* (2.81, 3.85)	3.79* (3.01, 4.79)
Secondary	Retention school	1.39* (1.22, 1.55)	1.41* (1.24, 1.60)	1.44* (1.29, 1.59)	1.45* (1.27, 1.68)
Special	Promotion	4.06* (2.23, 9.76)	4.64* (2.23, 17.24)	4.53* (2.24, 11.00)	4.62* (1.74, 48.8)
Special	Retention teaching	5.15* (3.12, 9.28)	4.83* (2.71, 9.53)	4.27* (2.57, 7.05)	6.75* (2.79, 18.37)
Special	Retention school	1.85* (1.29, 2.61)	1.50 (0.99, 2.39)	1.74* (1.25, 2.35)	2.02* (1.17, 3.28)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

The confidence intervals for special schools were uneven and very wide, suggesting issues with sample size.

The remaining results showed a significant positive impact on all three outcomes, both one and two years after starting an NPQ. The impact on retention in the state-funded

teacher workforce was strongest, followed by promotion, with a relatively low impact on retention in the same school. This holds true for all four cohorts.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 12 and 13 present modelled estimates of the median percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models. For each of the 1,000 bootstrapped models, the report presents modelled promotion and retention rates under two scenarios to support interpretation of the odds ratios: if all teachers in the matched sample had entered an NPQ, and if none had. The difference between these two estimates (all entered minus none entered) represents the estimated impact of NPQ participation, expressed in percentage points.

Finally, Tables 14 and 15 and Figures 1 and 2 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

Table 12: Estimated outcomes for entrants and non-entrants, all qualifications – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	8%	3%	8%	3%	9%	3%	9%	3%
All	Retention teaching	99%	91%	98%	92%	98%	89%	97%	89%
All	Retention school	86%	81%	85%	82%	85%	78%	81%	77%
Primary	Promotion	7%	2%	7%	2%	7%	3%	8%	2%
Primary	Retention teaching	99%	91%	98%	91%	98%	89%	98%	89%
Primary	Retention school	87%	82%	85%	82%	85%	78%	80%	77%
Secondary	Promotion	9%	4%	9%	4%	10%	4%	10%	4%
Secondary	Retention teaching	99%	92%	98%	92%	98%	89%	97%	89%
Secondary	Retention school	86%	81%	85%	82%	85%	78%	81%	77%
Special	Promotion	11%	3%	8%	2%	9%	3%	9%	3%
Special	Retention teaching	98%	90%	98%	89%	98%	88%	98%	89%
Special	Retention school	86%	80%	81%	79%	85%	76%	83%	77%

Source: NPQ MI, GIAS and SWC data

Table 13: Estimated outcomes for entrants and non-entrants, all qualifications – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	11%	4%	10%	4%	10%	4%	9%	4%
All	Retention teaching	95%	84%	96%	84%	95%	83%	95%	82%
All	Retention school	77%	69%	76%	69%	74%	66%	73%	66%
Primary	Promotion	10%	3%	10%	3%	9%	2%	8%	2%
Primary	Retention teaching	96%	84%	96%	84%	95%	83%	96%	82%
Primary	Retention school	78%	69%	76%	69%	75%	67%	73%	66%
Secondary	Promotion	12%	5%	10%	4%	11%	5%	10%	5%
Secondary	Retention teaching	94%	84%	95%	85%	94%	83%	95%	82%
Secondary	Retention school	75%	69%	76%	70%	73%	66%	73%	65%
Special	Promotion	14%	4%	14%	3%	12%	3%	12%	3%
Special	Retention teaching	96%	83%	95%	81%	95%	81%	97%	81%
Special	Retention school	80%	69%	75%	68%	76%	65%	79%	66%

Source: NPQ MI, GIAS and SWC data

Table 14: Estimated difference in outcomes (percentage points) for entrants and non-entrants, all qualifications – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	5pp (4pp, 6pp)	5pp (4pp, 6pp)	5pp (4pp, 6pp)	6pp (4pp, 7pp)
All	Retention teaching	7pp (6pp, 8pp)	7pp (5pp, 8pp)	9pp (8pp, 10pp)	8pp (6pp, 10pp)
All	Retention school	5pp (3pp, 7pp)	3pp (1pp, 5pp)	7pp (5pp, 9pp)	3pp (1pp, 6pp)
Primary	Promotion	5pp (3pp, 6pp)	5pp (3pp, 6pp)	5pp (4pp, 6pp)	5pp (3pp, 7pp)
Primary	Retention teaching	7pp (6pp, 9pp)	7pp (5pp, 9pp)	9pp (7pp, 10pp)	8pp (6pp, 11pp)
Primary	Retention school	5pp (3pp, 8pp)	3pp (0pp, 6pp)	7pp (5pp, 10pp)	3pp (-1pp, 7pp)
Secondary	Promotion	5pp (3pp, 7pp)	5pp (3pp, 6pp)	5pp (4pp, 7pp)	6pp (3pp, 8pp)
Secondary	Retention teaching	7pp (5pp, 8pp)	6pp (4pp, 8pp)	9pp (7pp, 10pp)	8pp (5pp, 10pp)
Secondary	Retention school	4pp (2pp, 7pp)	3pp (0pp, 6pp)	7pp (5pp, 10pp)	4pp (0pp, 8pp)
Special	Promotion	8pp (3pp, 13pp)	6pp (0pp, 10pp)	6pp (1pp, 11pp)	6pp (-2pp, 12pp)
Special	Retention teaching	8pp (3pp, 14pp)	8pp (2pp, 15pp)	10pp (5pp, 15pp)	9pp (2pp, 18pp)
Special	Retention school	7pp (-1pp, 15pp)	3pp (-7pp, 13pp)	8pp (1pp, 17pp)	6pp (-6pp, 20pp)

Source: NPQ MI, GIAS and SWC data

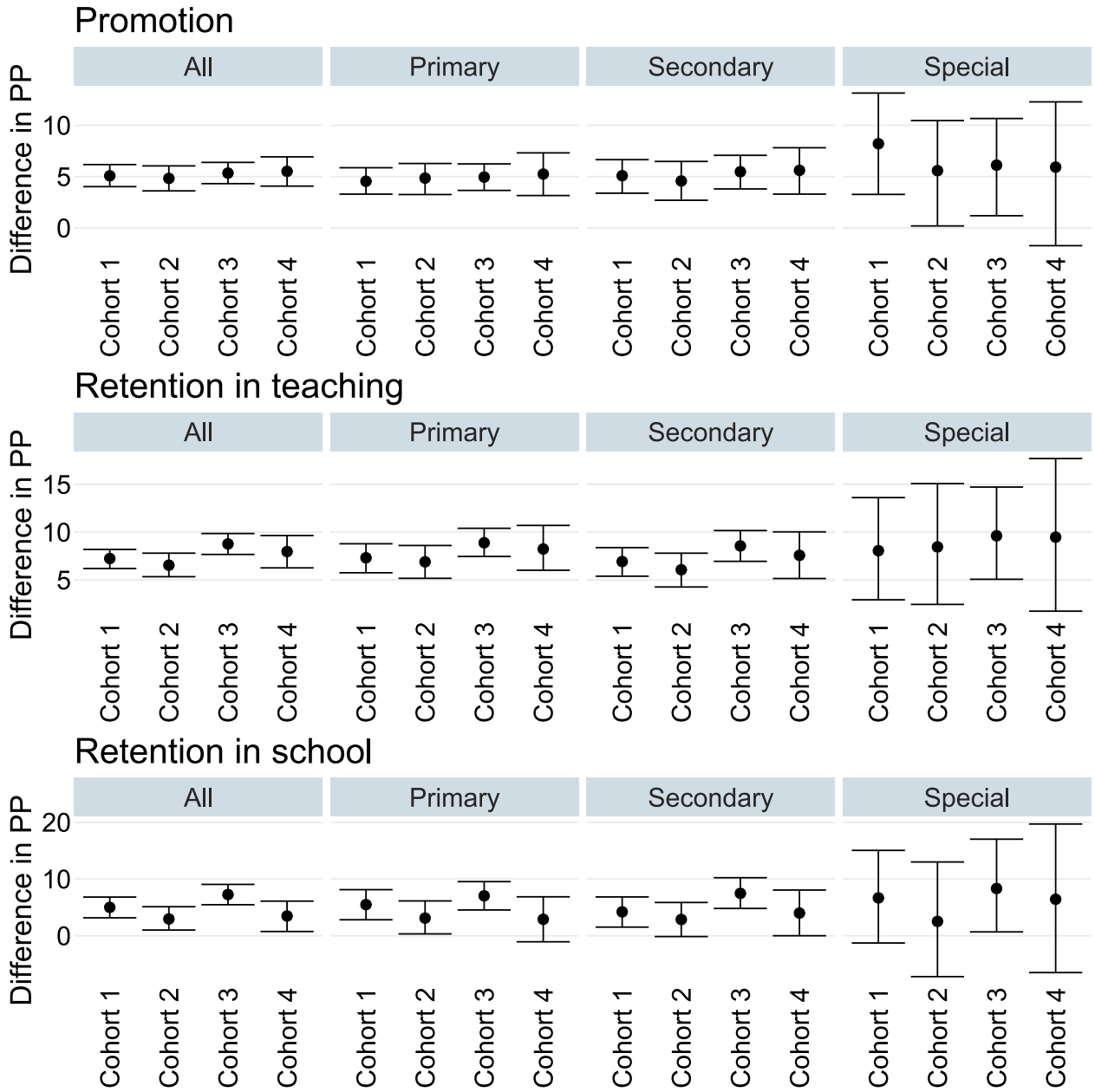
Table 15: Estimated difference in outcomes (percentage points) for entrants and non-entrants, all qualifications – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	7pp (6pp, 8pp)	7pp (6pp, 8pp)	6pp (5pp, 7pp)	6pp (4pp, 7pp)
All	Retention teaching	11pp (10pp, 13pp)	12pp (10pp, 13pp)	12pp (11pp, 14pp)	13pp (11pp, 15pp)
All	Retention school	8pp (5pp, 10pp)	7pp (4pp, 9pp)	8pp (6pp, 10pp)	7pp (4pp, 10pp)
Primary	Promotion	7pp (5pp, 8pp)	7pp (6pp, 9pp)	7pp (5pp, 8pp)	6pp (4pp, 8pp)
Primary	Retention teaching	12pp (10pp, 14pp)	13pp (10pp, 15pp)	13pp (11pp, 15pp)	14pp (11pp, 17pp)
Primary	Retention school	8pp (5pp, 12pp)	7pp (3pp, 10pp)	8pp (5pp, 11pp)	7pp (2pp, 11pp)
Secondary	Promotion	7pp (5pp, 9pp)	6pp (4pp, 8pp)	6pp (4pp, 7pp)	5pp (3pp, 8pp)
Secondary	Retention teaching	10pp (8pp, 13pp)	10pp (8pp, 13pp)	11pp (9pp, 13pp)	12pp (9pp, 15pp)
Secondary	Retention school	6pp (3pp, 10pp)	7pp (3pp, 10pp)	7pp (4pp, 10pp)	8pp (3pp, 12pp)
Special	Promotion	10pp (4pp, 15pp)	11pp (4pp, 17pp)	9pp (4pp, 13pp)	9pp (1pp, 16pp)
Special	Retention teaching	13pp (7pp, 20pp)	14pp (6pp, 22pp)	14pp (7pp, 21pp)	15pp (6pp, 26pp)
Special	Retention school	11pp (2pp, 21pp)	8pp (-3pp, 20pp)	11pp (2pp, 20pp)	13pp (-2pp, 28pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

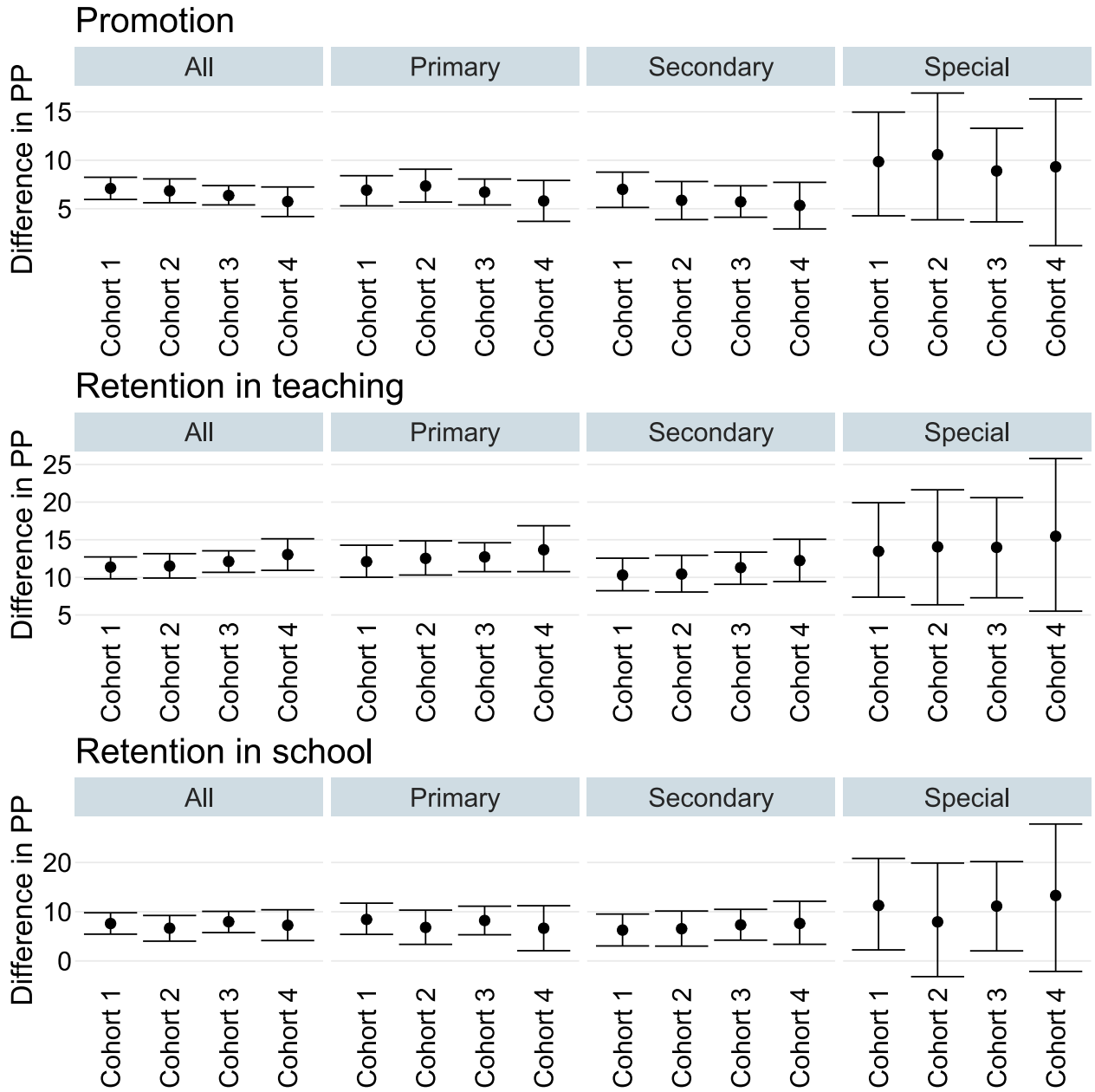
Figure 1: Estimated differences in outcomes for entrants and non-entrants, all qualifications – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratio contain figures >100

Figure 2: Estimated differences in outcomes for entrants and non-entrants, all qualifications – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

The difference for promotion was around 5 percentage points for all four cohorts one year after starting an NPQ, and slightly higher two years after starting an NPQ. This was consistent for entrants in primary and secondary schools. The difference was slightly higher in special schools, but the confidence intervals were also much wider.

For retention in teaching, the difference in percentage points was higher than for promotion. One year after starting an NPQ, the difference was slightly higher for entrants in Cohorts 3 and 4 compared to Cohorts 1 and 2, and it was also slightly higher for

entrants in autumn term (Cohorts 1 and 3) compared to entrants in spring term (Cohorts 2 and 4). Two years after starting an NPQ, the differences were more consistent across cohorts.

For retention in the same school, percentage point differences were slightly lower than for retention in teaching but slightly higher than for promotion. One year after starting an NPQ, effects were again somewhat higher for autumn term entrants than spring term entrants. This pattern was much less clear in the differences two years after starting an NPQ.

3.5.2 By type

This section presents estimates of the impact broken down by qualification type (Leadership/Specialist) and school phase, with the exception of AP centres, which are excluded due to low sample size.

Significant positive effects were found on all three outcomes for both Leadership and Specialist NPQs. The effects on promotions were higher for Leadership NPQs than for Specialist, while the effects on retention in the state-funded teacher workforce were similar and the effects on retention in the same school were lower. The detailed tables and charts in this section show the effects for both Leadership and Specialist NPQs as odds ratios, as well as estimated differences in the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants.

Leadership NPQs

The table below shows the estimated impact of entering a Leadership NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Table 16: Estimated impact (odds ratios), Leadership qualification entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	3.74* (2.92, 4.96)	3.92* (2.93, 5.24)	3.60* (2.94, 4.44)	3.67* (2.73, 5.18)
All	Retention teaching	6.18* (4.63, 8.29)	4.99* (3.71, 7.15)	5.92* (4.75, 7.41)	3.95* (2.98, 5.25)
All	Retention school	1.31* (1.14, 1.50)	1.11 (0.96, 1.31)	1.48* (1.32, 1.66)	1.13 (0.96, 1.31)
Primary	Promotion	4.08* (2.90, 6.19)	4.43* (2.95, 7.16)	3.67* (2.75, 5.03)	3.79* (2.45, 6.39)

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
Primary	Retention teaching	7.84* (5.14, 12.42)	5.79* (3.81, 9.58)	7.02* (5.34, 9.8)	5.82* (3.97, 8.68)
Primary	Retention school	1.30* (1.06, 1.60)	1.13 (0.91, 1.35)	1.55* (1.34, 1.78)	1.16 (0.94, 1.43)
Secondary	Promotion	3.20* (2.26, 4.83)	3.51* (2.30, 5.38)	3.50* (2.50, 4.87)	3.69* (2.32, 6.22)
Secondary	Retention teaching	5.10* (3.35, 7.90)	4.81* (2.87, 7.86)	5.00* (3.58, 7.54)	2.50* (1.72, 3.85)
Secondary	Retention school	1.28* (1.03, 1.56)	1.16 (0.93, 1.5)	1.46* (1.18, 1.76)	1.03 (0.80, 1.33)
Special	Promotion	6.75* (2.82, 27.74)	4.79* (1.27, 49.15)	3.89* (1.77, 12.40)	NA (CI > 100)
Special	Retention teaching	4.49* (1.68, 14.36)	4.13* (1.06, 19.32)	5.12* (2.19, 14.96)	NA (CI > 100)
Special	Retention school	1.35 (0.75, 2.41)	0.89 (0.43, 1.62)	1.42 (0.83, 2.35)	1.92 (0.93, 4.36)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)

* Statistically significant (alpha = 0.017)

Table 17: Estimated impact (odds ratios), Leadership qualification entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	4.05* (3.24, 5.11)	4.29* (3.32, 5.83)	3.74* (3.03, 4.65)	3.43* (2.59, 4.78)
All	Retention teaching	3.87* (3.27, 4.67)	4.40* (3.53, 5.57)	4.08* (3.50, 4.69)	4.61* (3.66, 5.70)
All	Retention school	1.34* (1.19, 1.49)	1.25* (1.11, 1.43)	1.39* (1.26, 1.52)	1.33* (1.15, 1.52)
Primary	Promotion	4.59* (3.38, 6.67)	5.19* (3.68, 7.97)	4.56* (3.50, 6.26)	3.72* (2.36, 5.97)
Primary	Retention teaching	4.61* (3.52, 5.92)	5.70* (4.27, 8.19)	4.57* (3.70, 5.63)	5.87* (4.40, 8.02)
Primary	Retention school	1.35* (1.15, 1.58)	1.24* (1.03, 1.47)	1.46* (1.29, 1.66)	1.39* (1.14, 1.67)

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
Secondary	Promotion	3.59* (2.57, 5.19)	3.23* (2.21, 5.02)	2.96* (2.24, 3.95)	3.09* (2.09, 4.99)
Secondary	Retention teaching	3.16* (2.45, 4.11)	3.59* (2.61, 5.02)	3.61* (2.84, 4.65)	3.38* (2.45, 5.01)
Secondary	Retention school	1.29* (1.07, 1.49)	1.33* (1.07, 1.61)	1.32* (1.13, 1.55)	1.19 (0.95, 1.5)
Special	Promotion	4.52* (2.09, 13.96)	6.60* (2.41, 34.5)	5.37* (2.52, 20.66)	5.96* (1.78, 48.87)
Special	Retention teaching	5.64* (2.57, 14.91)	4.06* (1.51, 10.81)	4.24* (2.28, 8.66)	5.14* (1.96, 17.83)
Special	Retention school	1.56* (1.01, 2.56)	1.07 (0.58, 1.90)	1.50 (0.99, 2.27)	2.24* (1.14, 4.3)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Again, there are wide, and in some cases uneven, confidence intervals for special schools, suggesting issues with sample size.

Overall, and for teachers in primary and secondary schools, these results show evidence of a significant positive effect on all three outcomes, both one and two years after starting the qualification. This holds true for all four cohorts.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 18 and 19 present modelled estimates of the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Finally, Tables 20 and 21 and Figures 3 and 4 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

Table 18: Estimated outcomes for entrants and non-entrants, Leadership qualifications – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	11%	3%	11%	3%	11%	3%	11%	3%
All	Retention teaching	99%	92%	98%	92%	98%	90%	97%	90%
All	Retention school	86%	82%	84%	83%	85%	79%	81%	79%
Primary	Promotion	10%	3%	10%	3%	10%	3%	9%	3%
Primary	Retention teaching	99%	92%	98%	92%	98%	90%	98%	90%
Primary	Retention school	86%	82%	84%	83%	85%	79%	81%	79%
Secondary	Promotion	12%	4%	12%	4%	13%	4%	13%	4%
Secondary	Retention teaching	98%	92%	98%	92%	98%	90%	96%	90%
Secondary	Retention school	85%	82%	85%	83%	84%	79%	79%	78%
Special	Promotion	18%	3%	12%	3%	13%	4%	NA (CI > 100)	NA (CI > 100)
Special	Retention teaching	98%	90%	97%	89%	98%	89%	NA (CI > 100)	NA (CI > 100)
Special	Retention school	85%	81%	78%	80%	83%	77%	87%	78%

Source: NPQ MI, GIAS and SWC data

Table 19: Estimated outcomes for entrants and non-entrants, Leadership qualifications – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	14%	4%	14%	4%	12%	4%	11%	4%
All	Retention teaching	95%	84%	96%	84%	95%	83%	96%	83%
All	Retention school	76%	70%	75%	71%	74%	68%	73%	67%
Primary	Promotion	14%	3%	14%	3%	11%	3%	9%	3%
Primary	Retention teaching	96%	84%	97%	84%	96%	83%	97%	83%
Primary	Retention school	76%	70%	75%	71%	75%	68%	74%	68%
Secondary	Promotion	15%	5%	13%	4%	14%	5%	14%	5%
Secondary	Retention teaching	94%	85%	95%	85%	95%	83%	94%	83%
Secondary	Retention school	74%	69%	76%	71%	73%	67%	70%	66%
Special	Promotion	17%	4%	21%	4%	16%	3%	17%	3%
Special	Retention teaching	97%	83%	95%	82%	95%	81%	96%	82%
Special	Retention school	79%	70%	71%	69%	75%	67%	82%	68%

Source: NPQ MI, GIAS and SWC data

Table 20: Estimated difference in outcomes (percentage points) for entrants and non-entrants, Leadership qualifications – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	8pp (6pp, 10pp)	8pp (6pp, 10pp)	8pp (6pp, 9pp)	8pp (6pp, 10pp)
All	Retention teaching	7pp (5pp, 8pp)	6pp (5pp, 8pp)	8pp (7pp, 10pp)	7pp (5pp, 10pp)
All	Retention school	3pp (1pp, 6pp)	1pp (-1pp, 4pp)	6pp (3pp, 8pp)	2pp (-2pp, 5pp)
Primary	Promotion	8pp (5pp, 10pp)	8pp (5pp, 10pp)	7pp (5pp, 9pp)	7pp (4pp, 9pp)
Primary	Retention teaching	7pp (5pp, 9pp)	7pp (5pp, 9pp)	9pp (7pp, 11pp)	8pp (6pp, 11pp)
Primary	Retention school	3pp (0pp, 7pp)	2pp (-2pp, 6pp)	6pp (3pp, 9pp)	2pp (-2pp, 7pp)
Secondary	Promotion	8pp (5pp, 10pp)	8pp (5pp, 12pp)	9pp (6pp, 12pp)	9pp (5pp, 13pp)
Secondary	Retention teaching	6pp (4pp, 8pp)	6pp (3pp, 9pp)	8pp (5pp, 10pp)	6pp (2pp, 10pp)
Secondary	Retention school	3pp (-1pp, 7pp)	2pp (-3pp, 7pp)	5pp (1pp, 9pp)	1pp (-5pp, 7pp)
Special	Promotion	14pp (6pp, 21pp)	9pp (-1pp, 16pp)	9pp (2pp, 16pp)	NA (CI > 100)
Special	Retention teaching	7pp (1pp, 14pp)	8pp (-1pp, 17pp)	9pp (2pp, 16pp)	NA (CI > 100)
Special	Retention school	4pp (-6pp, 15pp)	-2pp (-17pp, 12pp)	5pp (-5pp, 16pp)	9pp (-6pp, 25pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

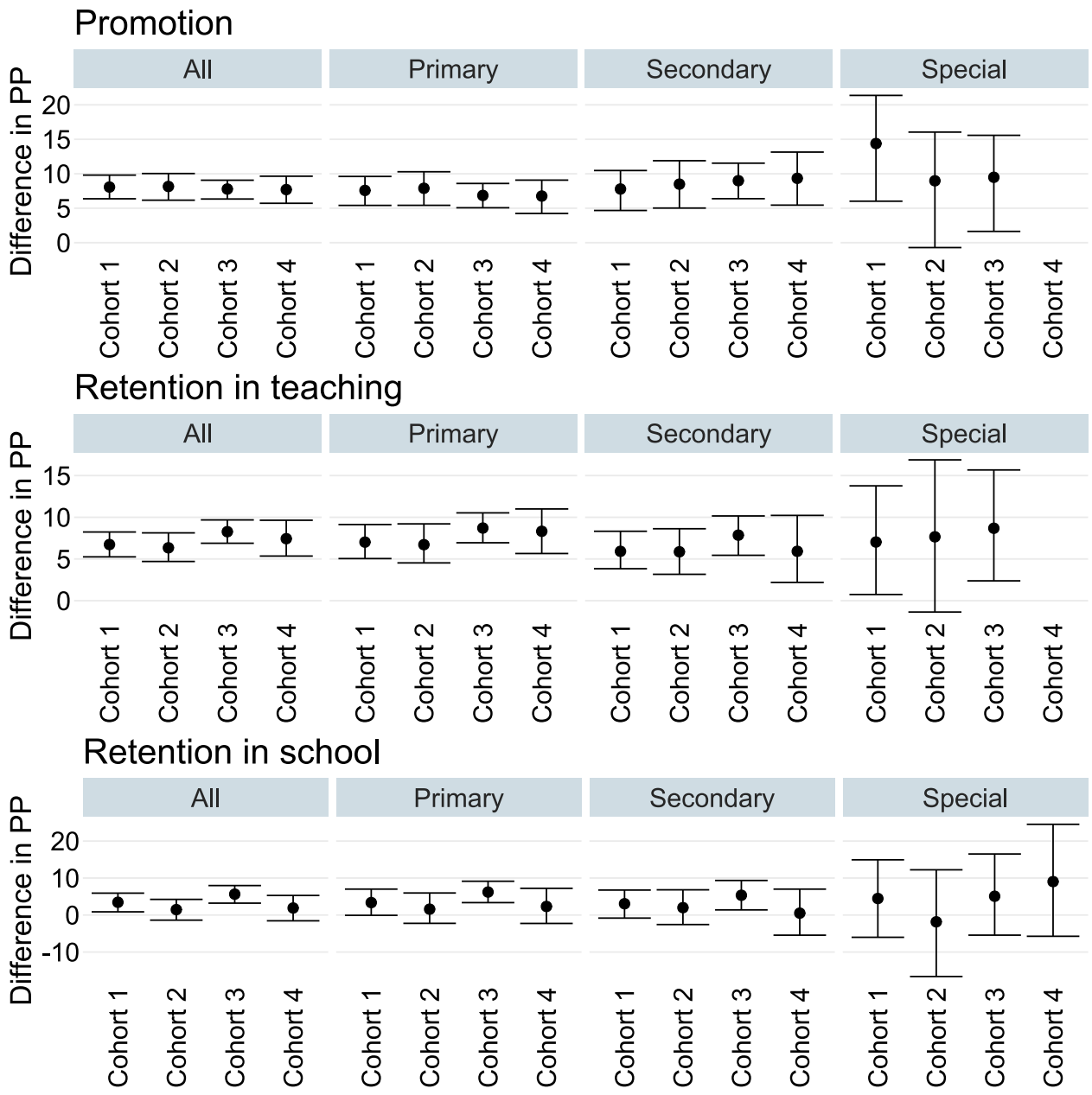
Table 21: Estimated difference in outcomes (percentage points) for entrants and non-entrants, Leadership qualifications – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	10pp (8pp, 12pp)	11pp (8pp, 13pp)	9pp (7pp, 10pp)	8pp (5pp, 10pp)
All	Retention teaching	11pp (9pp, 13pp)	12pp (9pp, 14pp)	12pp (10pp, 14pp)	13pp (10pp, 16pp)
All	Retention school	6pp (3pp, 9pp)	4pp (1pp, 8pp)	7pp (4pp, 9pp)	6pp (2pp, 10pp)
Primary	Promotion	10pp (8pp, 13pp)	11pp (8pp, 14pp)	9pp (7pp, 10pp)	7pp (4pp, 9pp)
Primary	Retention teaching	12pp (9pp, 15pp)	13pp (10pp, 16pp)	13pp (11pp, 15pp)	14pp (11pp, 17pp)
Primary	Retention school	6pp (1pp, 10pp)	4pp (-1pp, 9pp)	7pp (4pp, 11pp)	7pp (1pp, 12pp)
Secondary	Promotion	10pp (7pp, 13pp)	9pp (5pp, 12pp)	9pp (6pp, 11pp)	9pp (5pp, 13pp)
Secondary	Retention teaching	10pp (6pp, 13pp)	10pp (7pp, 14pp)	11pp (8pp, 14pp)	11pp (7pp, 16pp)
Secondary	Retention school	5pp (0pp, 9pp)	5pp (0pp, 11pp)	6pp (1pp, 10pp)	4pp (-3pp, 10pp)
Special	Promotion	13pp (5pp, 21pp)	17pp (6pp, 26pp)	12pp (5pp, 19pp)	13pp (2pp, 22pp)
Special	Retention teaching	13pp (5pp, 22pp)	13pp (1pp, 24pp)	13pp (5pp, 23pp)	14pp (2pp, 27pp)
Special	Retention school	9pp (-3pp, 21pp)	1pp (-15pp, 19pp)	8pp (-4pp, 22pp)	14pp (-2pp, 33pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

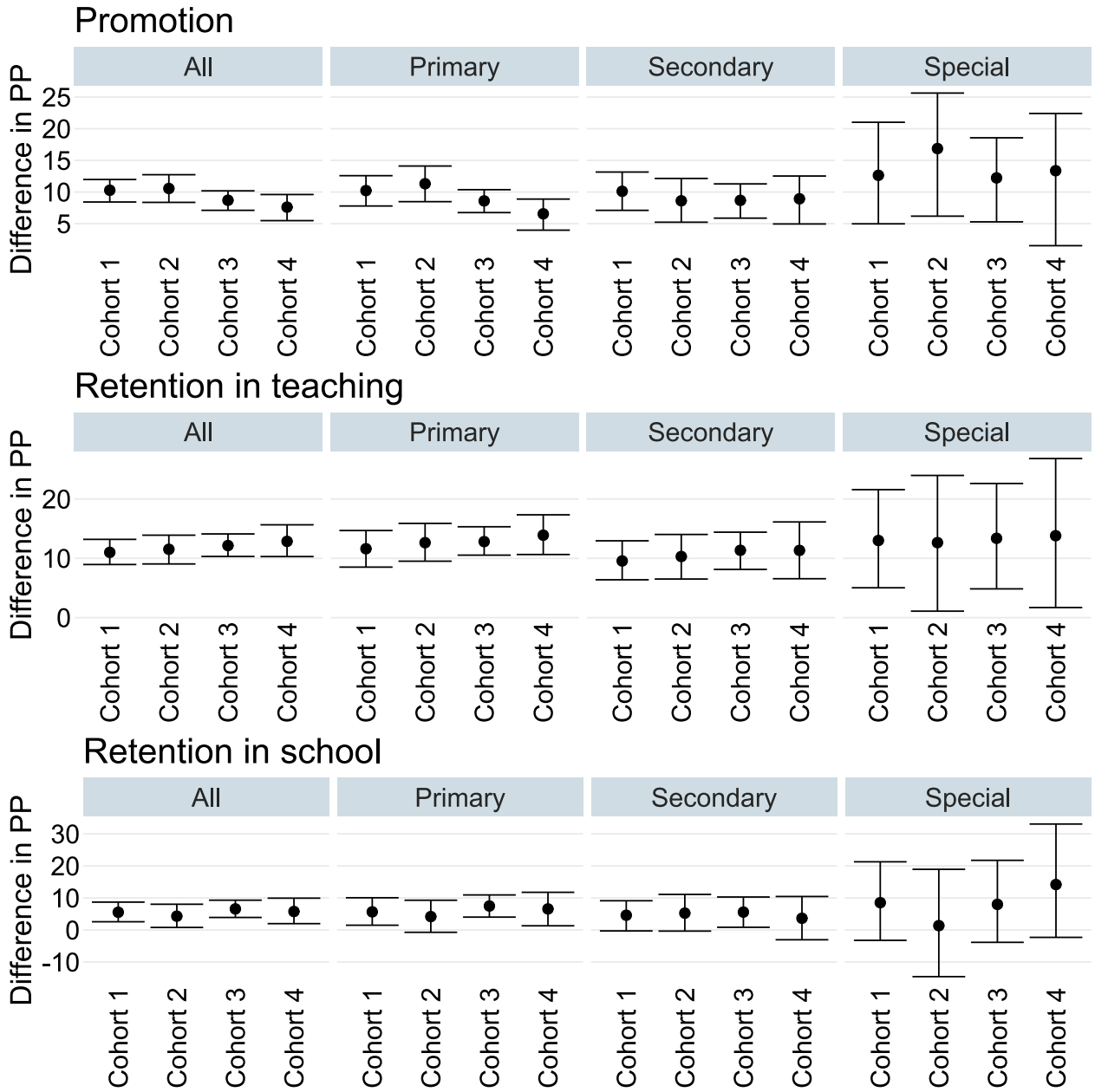
Figure 3: Estimated differences in outcomes for entrants and non-entrants, Leadership qualifications – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

Figure 4: Estimated differences in outcomes for entrants and non-entrants, Leadership qualifications – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

The difference for promotion was around 8 percentage points one year after starting an NPQ, and this was consistent across all four cohorts. It rose to between 8 and 11 percentage points two years after starting an NPQ. The pattern was similar for entrants in primary and secondary schools. Differences were larger in special schools but the confidence intervals were much wider.

For retention in teaching, differences were around 6 to 8 percentage points one year after starting an NPQ, slightly higher for Cohort 3, and rose to around 11 to 13 percentage

points two years after starting an NPQ. For retention in the same school, differences were smaller and less consistent. One year after starting an NPQ they ranged from around 1 to 6 percentage points. Two years after starting an NPQ, differences were around 4 to 7 percentage points.

Specialist NPQs

The table below shows the estimated impact of entering a Specialist NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Table 22: Estimated impact (odds ratios), Specialist qualification entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	1.78* (1.41, 2.36)	1.56* (1.18, 2.12)	1.73* (1.36, 2.28)	1.75* (1.28, 2.53)
All	Retention teaching	7.78* (5.95, 10.37)	4.78* (3.66, 6.29)	6.65* (5.40, 8.38)	4.73* (3.60, 6.37)
All	Retention school	1.66* (1.44, 1.88)	1.44* (1.25, 1.66)	1.91* (1.71, 2.15)	1.46* (1.25, 1.67)
Primary	Promotion	1.64 (0.96, 3.02)	1.46 (0.83, 2.92)	1.57* (1.03, 2.68)	1.46 (0.76, 3.16)
Primary	Retention teaching	6.14* (4.18, 9.31)	5.17* (3.31, 7.93)	7.83* (5.53, 11.53)	4.65* (3.03, 7.43)
Primary	Retention school	1.91* (1.53, 2.39)	1.56* (1.25, 1.94)	1.90* (1.61, 2.26)	1.40* (1.10, 1.79)
Secondary	Promotion	1.83* (1.41, 2.50)	1.59* (1.13, 2.28)	1.77* (1.32, 2.41)	1.89* (1.26, 2.82)
Secondary	Retention teaching	9.86* (6.55, 16.84)	4.46* (3.07, 6.65)	5.93* (4.53, 7.81)	4.88* (3.46, 7.27)
Secondary	Retention school	1.47* (1.23, 1.79)	1.33* (1.10, 1.61)	1.89* (1.62, 2.18)	1.53* (1.24, 1.88)
Special	Promotion	NA (CI > 100)	NA (CI > 100)	2.03 (0.60, 22.14)	NA (CI > 100)
Special	Retention teaching	7.80* (2.51, 56.37)	6.68* (1.62, 39.95)	12.17* (4.22, 70.12)	3.53 (0.83, 28.87)
Special	Retention school	2.18* (1.21, 4.23)	1.66 (0.85, 3.35)	2.48* (1.38, 4.09)	1.36 (0.59, 2.96)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Table 23: Estimated impact (odds ratios), Specialist qualification entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	2.37* (1.84, 3.05)	2.18* (1.67, 2.95)	2.02* (1.63, 2.56)	1.95* (1.45, 2.76)
All	Retention teaching	3.80* (3.24, 4.49)	3.87* (3.25, 4.76)	3.41* (2.92, 3.86)	4.58* (3.73, 5.78)
All	Retention school	1.65* (1.48, 1.84)	1.66* (1.48, 1.89)	1.63* (1.49, 1.79)	1.66* (1.45, 1.9)
Primary	Promotion	2.61* (1.65, 4.29)	2.46* (1.46, 4.53)	2.52* (1.59, 4.02)	2.56* (1.35, 5.47)
Primary	Retention teaching	4.53* (3.49, 6.02)	4.34* (3.19, 5.73)	3.83* (3.03, 4.77)	4.78* (3.44, 6.63)
Primary	Retention school	1.87* (1.56, 2.21)	1.82* (1.49, 2.13)	1.70* (1.46, 1.97)	1.61* (1.30, 1.98)
Secondary	Promotion	2.24* (1.68, 3.03)	2.06* (1.49, 3.04)	1.81* (1.41, 2.42)	1.71* (1.23, 2.53)
Secondary	Retention teaching	3.29* (2.63, 4.15)	3.48* (2.69, 4.54)	3.11* (2.58, 3.67)	4.37* (3.33, 5.74)
Secondary	Retention school	1.47* (1.26, 1.75)	1.51* (1.29, 1.8)	1.56* (1.36, 1.75)	1.70* (1.43, 2.03)
Special	Promotion	4.00* (1.33, 38.88)	NA (CI > 100)	3.74* (1.31, 52.28)	NA (CI > 100)
Special	Retention teaching	4.94* (2.24, 12.22)	6.11* (2.38, 19.93)	4.50* (2.37, 9.51)	NA (CI > 100)
Special	Retention school	2.39* (1.36, 4.20)	2.15* (1.27, 4.06)	2.13* (1.35, 3.28)	2.23* (1.02, 4.77)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Again, there are some extreme values and uneven confidence intervals in the estimates for special schools.

Overall, and for teachers in primary and secondary schools, these results suggest a significant positive impact on all three outcomes, both one and two years after starting.

The strongest effect was on retention in the state-funded teacher workforce and the weakest on retention in the same school. The odds ratio for promotion was consistently higher for Leadership NPQs than Specialist NPQs, both one and two years after starting an NPQ.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 24 and 25 present modelled estimates of the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Finally, Tables 26 and 27 and Figures 5 and 6 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

Table 24: Estimated outcomes for entrants and non-entrants, Specialist qualifications – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	5%	3%	5%	3%	5%	3%	5%	3%
All	Retention teaching	99%	91%	98%	91%	98%	89%	97%	89%
All	Retention school	87%	81%	86%	81%	86%	77%	83%	77%
Primary	Promotion	3%	2%	2%	2%	3%	2%	3%	2%
Primary	Retention teaching	98%	91%	98%	91%	98%	89%	97%	89%
Primary	Retention school	89%	81%	87%	81%	86%	77%	82%	77%
Secondary	Promotion	8%	4%	6%	4%	7%	4%	7%	4%
Secondary	Retention teaching	99%	92%	98%	92%	98%	89%	97%	89%
Secondary	Retention school	86%	81%	85%	81%	86%	77%	83%	77%
Special	Promotion	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	4%	2%	NA (CI > 100)	NA (CI > 100)
Special	Retention teaching	98%	89%	98%	89%	99%	88%	96%	88%
Special	Retention school	88%	78%	85%	78%	87%	74%	79%	74%

Source: NPQ MI, GIAS and SWC data

Table 25: Estimated outcomes for entrants and non-entrants, Specialist qualifications – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	7%	3%	7%	3%	6%	3%	6%	3%
All	Retention teaching	95%	83%	95%	84%	94%	82%	95%	82%
All	Retention school	78%	68%	78%	68%	75%	65%	75%	65%
Primary	Promotion	5%	2%	5%	2%	4%	2%	5%	2%
Primary	Retention teaching	96%	83%	95%	83%	94%	82%	95%	82%
Primary	Retention school	80%	68%	79%	68%	76%	66%	75%	66%
Secondary	Promotion	9%	4%	8%	4%	8%	5%	7%	5%
Secondary	Retention teaching	94%	84%	95%	84%	93%	82%	95%	82%
Secondary	Retention school	75%	68%	77%	69%	73%	64%	75%	64%
Special	Promotion	9%	2%	NA (CI > 100)	NA (CI > 100)	7%	2%	NA (CI > 100)	NA (CI > 100)
Special	Retention teaching	95%	81%	96%	81%	95%	80%	NA (CI > 100)	NA (CI > 100)
Special	Retention school	82%	66%	80%	66%	78%	63%	78%	63%

Source: NPQ MI, GIAS and SWC data

Table 26: Estimated difference in outcomes (percentage points) for entrants and non-entrants, Specialist qualifications – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	2pp (1pp, 4pp)	2pp (0pp, 3pp)	2pp (1pp, 3pp)	2pp (1pp, 4pp)
All	Retention teaching	8pp (6pp, 9pp)	7pp (5pp, 9pp)	9pp (8pp, 11pp)	9pp (7pp, 11pp)
All	Retention school	6pp (4pp, 9pp)	5pp (2pp, 8pp)	9pp (7pp, 12pp)	6pp (2pp, 9pp)
Primary	Promotion	1pp (-1pp, 2pp)	1pp (-1pp, 2pp)	1pp (0pp, 2pp)	1pp (-1pp, 3pp)
Primary	Retention teaching	8pp (5pp, 10pp)	7pp (5pp, 10pp)	10pp (7pp, 12pp)	9pp (5pp, 12pp)
Primary	Retention school	8pp (4pp, 11pp)	6pp (1pp, 10pp)	9pp (6pp, 13pp)	5pp (0pp, 11pp)
Secondary	Promotion	3pp (1pp, 5pp)	2pp (0pp, 5pp)	3pp (1pp, 5pp)	3pp (1pp, 6pp)
Secondary	Retention teaching	7pp (6pp, 9pp)	6pp (4pp, 9pp)	9pp (7pp, 11pp)	9pp (6pp, 12pp)
Secondary	Retention school	5pp (2pp, 8pp)	4pp (0pp, 7pp)	9pp (6pp, 12pp)	7pp (2pp, 11pp)
Special	Promotion	NA (CI > 100)	NA (CI > 100)	2pp (-3pp, 6pp)	NA (CI > 100)
Special	Retention teaching	9pp (2pp, 16pp)	9pp (0pp, 18pp)	11pp (5pp, 18pp)	8pp (-4pp, 23pp)
Special	Retention school	NA (CI > 100)	7pp (-7pp, 21pp)	13pp (1pp, 24pp)	5pp (-15pp, 26pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

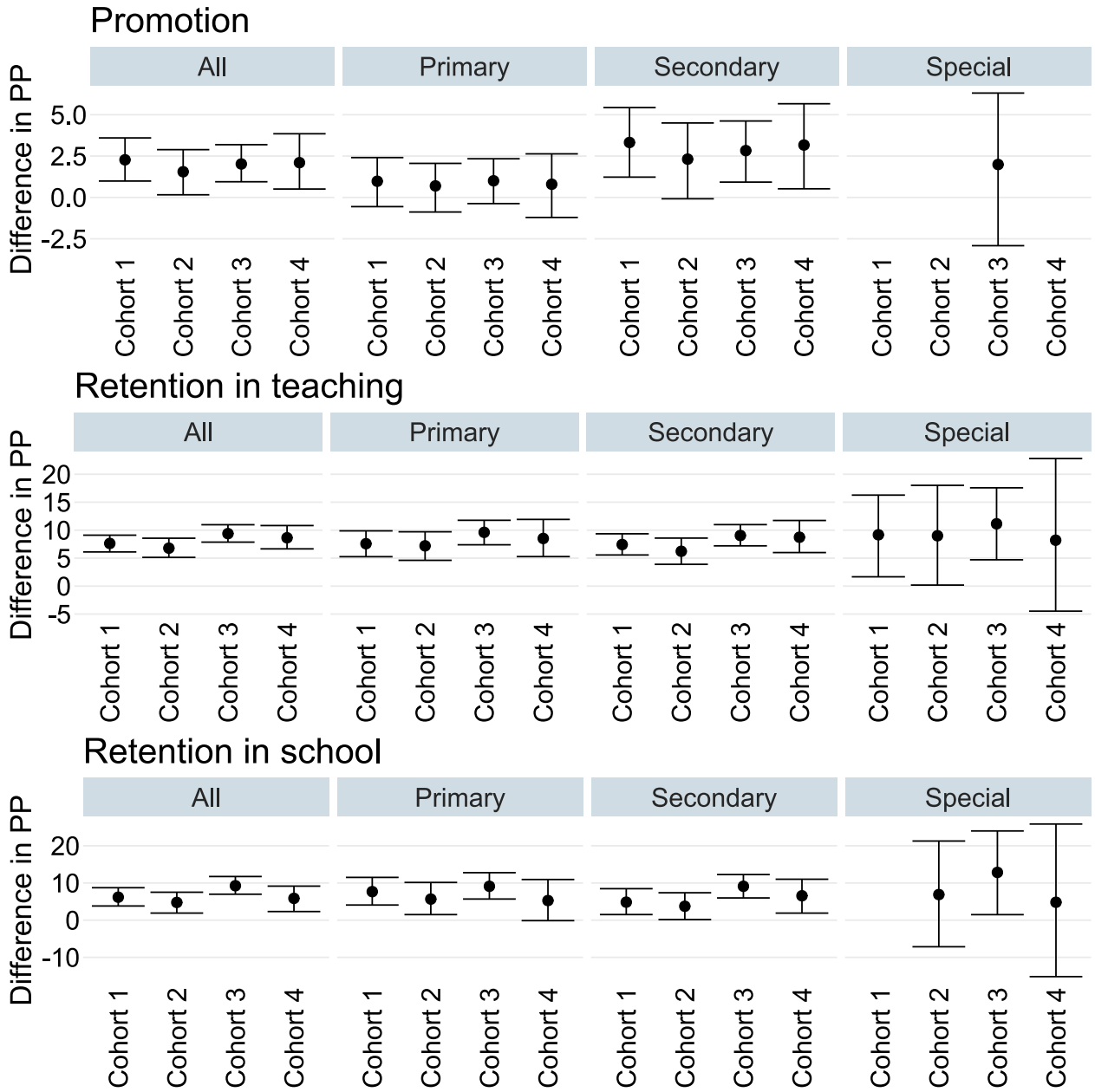
Table 27: Estimated difference in outcomes (percentage points) for entrants and non-entrants, Specialist qualifications – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	4pp (3pp, 6pp)	3pp (2pp, 5pp)	3pp (2pp, 4pp)	3pp (1pp, 5pp)
All	Retention teaching	12pp (9pp, 14pp)	12pp (9pp, 14pp)	12pp (10pp, 14pp)	14pp (11pp, 16pp)
All	Retention school	9pp (6pp, 12pp)	10pp (6pp, 13pp)	10pp (7pp, 13pp)	10pp (7pp, 14pp)
Primary	Promotion	3pp (1pp, 5pp)	3pp (1pp, 4pp)	3pp (1pp, 4pp)	3pp (0pp, 5pp)
Primary	Retention teaching	13pp (10pp, 16pp)	12pp (9pp, 16pp)	13pp (10pp, 16pp)	14pp (10pp, 18pp)
Primary	Retention school	11pp (7pp, 16pp)	11pp (6pp, 16pp)	10pp (6pp, 15pp)	10pp (3pp, 16pp)
Secondary	Promotion	5pp (3pp, 7pp)	4pp (2pp, 6pp)	3pp (2pp, 5pp)	3pp (0pp, 6pp)
Secondary	Retention teaching	10pp (8pp, 13pp)	11pp (8pp, 14pp)	11pp (9pp, 14pp)	13pp (9pp, 17pp)
Secondary	Retention school	7pp (3pp, 12pp)	8pp (3pp, 13pp)	9pp (5pp, 13pp)	11pp (5pp, 16pp)
Special	Promotion	7pp (-1pp, 13pp)	NA (CI > 100)	5pp (-1pp, 10pp)	NA (CI > 100)
Special	Retention teaching	14pp (4pp, 24pp)	15pp (4pp, 27pp)	15pp (5pp, 25pp)	NA (CI > 100)
Special	Retention school	16pp (1pp, 30pp)	14pp (-1pp, 29pp)	15pp (2pp, 28pp)	15pp (-6pp, 36pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

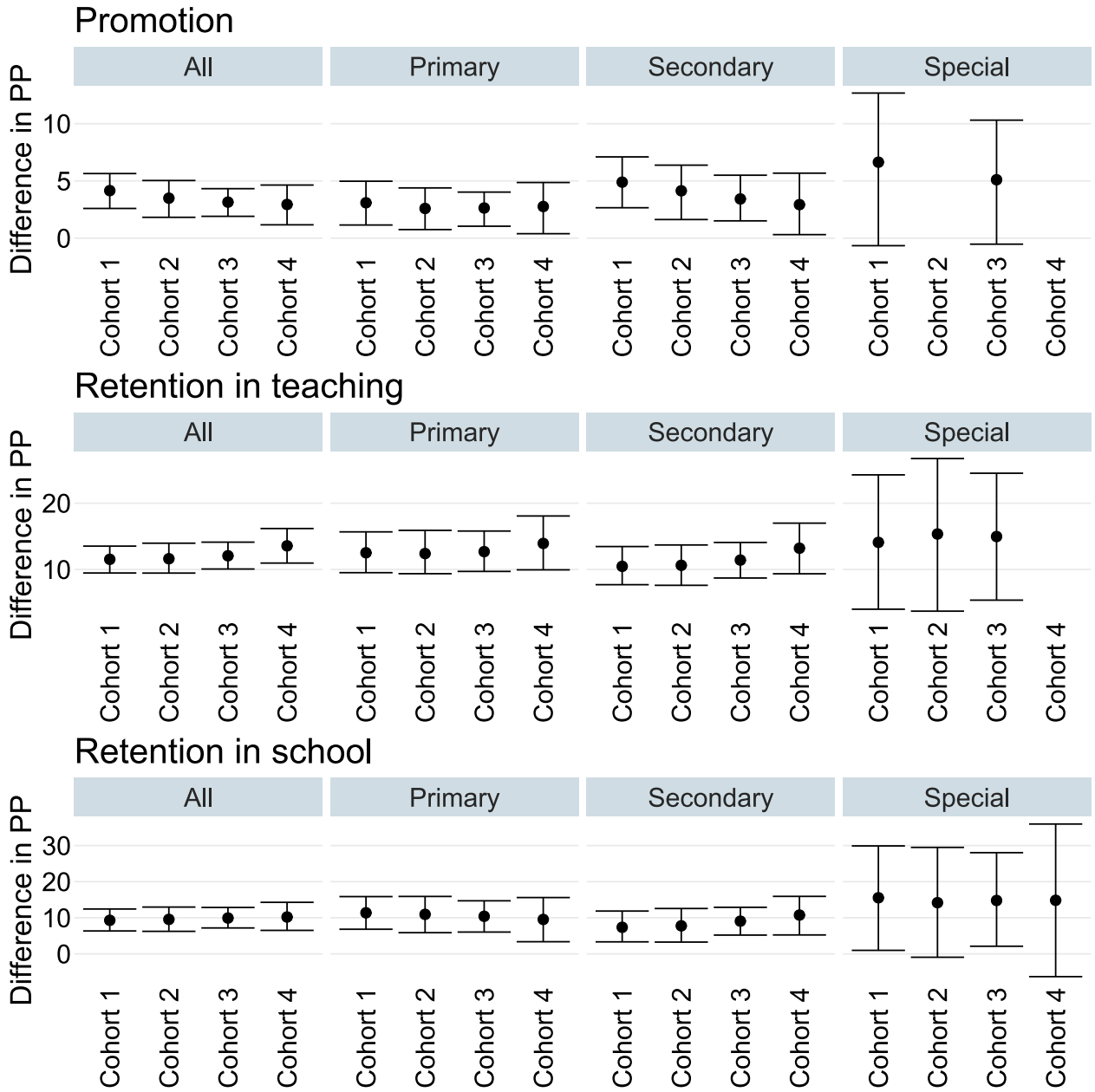
Figure 5: Estimated differences in outcomes for entrants and non-entrants, Specialist qualifications – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

Figure 6: Estimated differences in outcomes for entrants and non-entrants, Specialist qualifications – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

The difference for promotion was around 2 percentage points one year after starting an NPQ and around 3 to 4 percentage points two years after starting an NPQ. Estimates for special schools could mostly not be shown due to very wide confidence intervals.

For retention in teaching, differences were around 7 to 9 percentage points one year after starting an NPQ and around 12 to 14 percentage points two years after starting an NPQ. For retention in the same school, differences were around 5 to 9 percentage points one

year after starting an NPQ, with the largest difference for Cohort 3, and around 9 to 10 percentage points two years after starting an NPQ.

3.5.3 By qualification

This section presents estimated impact broken down by qualification and school phase, with the exception of AP centres and special schools. These are excluded due to low sample size.

The results in this section broadly reflect the breakdowns by type: most of the individual Leadership NPQs tended to have higher estimated effects on promotion than the individual Specialist NPQs.

There were, however, some exceptions. For example, no positive effect on promotion was found for NPQEL, and no consistent evidence of a significant positive effect was found on retention in the same school for NPQEL or NPQH. Unlike most other qualifications, the point estimates for promotion for the NPQEYL were lower than for both of the other outcomes one year after starting an NPQ. For NPQLTD, the effect on promotion varied: there was a significant positive effect two years after starting an NPQ, but one year after starting an NPQ results were mixed, and for NPQLT, no consistent positive effect on promotion was found one year after starting an NPQ, although the effect was significant two years after starting an NPQ.

NPQEL

The table below shows the estimated impact of entering this NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Table 28: Estimated impact (odds ratios), NPQEL entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	1.45 (0.24, 13.28)	1.23 (0.14, 13.58)	0.66 (0.16, 3.15)	1.32 (0.33, 7.52)
All	Retention teaching	4.13* (1.48, 13.67)	1.64 (0.45, 6.00)	4.18* (1.57, 9.86)	2.93 (0.86, 9.07)
All	Retention school	0.99 (0.53, 1.88)	0.83 (0.38, 1.61)	1.33 (0.82, 2.2)	1.22 (0.56, 2.37)
Primary	Promotion	1.25 (0.11, 96.62)	NA (CI > 100)	0.28 (0.00, 13.34)	NA (CI > 100)
Primary	Retention teaching	7.81* (1.69, 57.33)	1.82 (0.18, 12.26)	5.60* (1.22, 20.87)	5.47* (1.04, 45.88)

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
Primary	Retention school	1.05 (0.39, 2.43)	0.99 (0.28, 3.03)	1.33 (0.56, 2.60)	1.44 (0.51, 3.43)
Secondary	Promotion	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)
Secondary	Retention teaching	1.34 (0.04, 16.08)	0.93 (0.04, 10.79)	1.65 (0.08, 13.08)	0.67 (0.01, 6.95)
Secondary	Retention school	0.67 (0.12, 3.07)	0.63 (0.08, 2.22)	0.91 (0.18, 3.38)	0.77 (0.06, 3.27)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Table 29: Estimated impact (odds ratios), NPQEL entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	0.21* (0.03, 0.86)	0.53 (0.09, 2.13)	0.07* (0.00, 0.47)	0.35 (0.06, 1.41)
All	Retention teaching	2.47* (1.17, 5.21)	2.90* (1.17, 6.75)	2.06* (1.17, 3.78)	1.95 (0.79, 4.18)
All	Retention school	1.10 (0.63, 1.83)	1.06 (0.57, 1.86)	1.24 (0.80, 1.94)	1.16 (0.60, 2.02)
Primary	Promotion	0.05* (0.00, 0.88)	0.17 (0.00, 3.86)	0.11 (0.00, 1.03)	0.26 (0.00, 3.39)
Primary	Retention teaching	3.24* (1.22, 9.06)	4.34* (1.15, 17.4)	2.06 (0.77, 4.50)	2.47 (0.91, 6.57)
Primary	Retention school	1.07 (0.47, 2.03)	1.25 (0.57, 2.73)	1.16 (0.53, 2.14)	1.18 (0.49, 2.36)
Secondary	Promotion	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)
Secondary	Retention teaching	1.38 (0.11, 8.66)	1.63 (0.24, 7.34)	1.41 (0.33, 5.13)	0.66 (0.04, 4.30)
Secondary	Retention school	1.02 (0.27, 3.67)	0.81 (0.17, 2.38)	1.31 (0.37, 3.93)	0.98 (0.15, 3.18)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Two years after starting an NPQ, the overall results showed a significant positive effect on retention in teaching, but no evidence of a positive effect on retention in the same school or promotion. In fact, the point estimates for promotion two years after starting an NPQ were below one, although not consistently significant. However, most NPQEL entrants were already in the highest band (Band 1: Executive Head Teacher, Headteacher) when they entered the qualification, meaning that promotion was not possible under this definition unless entrants received an increase in TLR payments – unlikely at this level of seniority. There are also very wide confidence intervals, likely because promotion is a rare event for NPQEL entrants.

Extreme values and uneven confidence intervals were seen in the breakdown by phase, likely reflecting the relatively low entry numbers for NPQEL. The results for primary broadly reflected the overall results, while those that are available for secondary were somewhat different: the impact on retention in teaching was lower and was not significant for any cohort. Therefore, the impact seen in the overall results appeared to be driven mainly by primary entrants. It is also worth noting here that NPQEL entrants may be responsible for multiple phases[10]. As a result, the phase assigned to entrants in this analysis may not always reflect the phase profile of the wider academy or school context, and phase-level findings or comparisons should be interpreted with some caution.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 30 and 31 present modelled estimates of the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Finally, Tables 32 and 33 and Figures 7 and 8 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

[10] Phase was determined by SWC records, and the majority of NPQEL entrants were not in role when starting their NPQ

Table 30: Estimated outcomes for entrants and non-entrants, NPQEL – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	4%	3%	3%	3%	2%	3%	4%	3%
All	Retention teaching	98%	92%	96%	94%	98%	91%	97%	92%
All	Retention school	83%	83%	82%	85%	86%	82%	84%	82%
Primary	Promotion	3%	2%	5%	2%	1%	3%	5%	3%
Primary	Retention teaching	99%	91%	96%	94%	98%	91%	98%	91%
Primary	Retention school	84%	83%	84%	85%	85%	81%	85%	81%
Secondary	Promotion	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)
Secondary	Retention teaching	95%	94%	94%	94%	95%	92%	90%	93%
Secondary	Retention school	78%	83%	77%	84%	82%	83%	79%	83%

Source: NPQ MI, GIAS and SWC data

Table 31: Estimated outcomes for entrants and non-entrants, NPQEL – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	1%	4%	2%	4%	0%	4%	2%	4%
All	Retention teaching	93%	84%	95%	86%	92%	84%	92%	85%
All	Retention school	73%	72%	75%	73%	76%	72%	74%	71%
Primary	Promotion	0%	4%	1%	4%	0%	3%	1%	4%
Primary	Retention teaching	94%	83%	96%	85%	92%	85%	93%	85%
Primary	Retention school	73%	72%	76%	72%	74%	72%	73%	70%
Secondary	Promotion	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)
Secondary	Retention teaching	90%	88%	91%	86%	87%	83%	82%	87%
Secondary	Retention school	72%	72%	69%	73%	75%	70%	70%	71%

Source: NPQ MI, GIAS and SWC data

Table 32: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQEL – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	1pp (-5pp, 10pp)	1pp (-6pp, 9pp)	-1pp (-6pp, 4pp)	1pp (-5pp, 8pp)
All	Retention teaching	6pp (0pp, 14pp)	2pp (-5pp, 10pp)	7pp (1pp, 12pp)	5pp (-2pp, 14pp)
All	Retention school	0pp (-11pp, 12pp)	-2pp (-14pp, 9pp)	4pp (-5pp, 13pp)	3pp (-10pp, 15pp)
Primary	Promotion	1pp (-6pp, 14pp)	NA (CI > 100)	-2pp (-6pp, 7pp)	NA (CI > 100)
Primary	Retention teaching	8pp (0pp, 17pp)	3pp (-11pp, 13pp)	7pp (0pp, 14pp)	7pp (-2pp, 17pp)
Primary	Retention school	0pp (-15pp, 16pp)	-1pp (-17pp, 16pp)	4pp (-10pp, 16pp)	5pp (-11pp, 20pp)
Secondary	Promotion	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)
Secondary	Retention teaching	1pp (-20pp, 19pp)	0pp (-19pp, 14pp)	3pp (-18pp, 19pp)	-3pp (-29pp, 17pp)
Secondary	Retention school	-6pp (-30pp, 19pp)	-7pp (-33pp, 17pp)	-1pp (-24pp, 22pp)	-4pp (-33pp, 25pp)

Source: NPQ MI, GIAS and SWC data

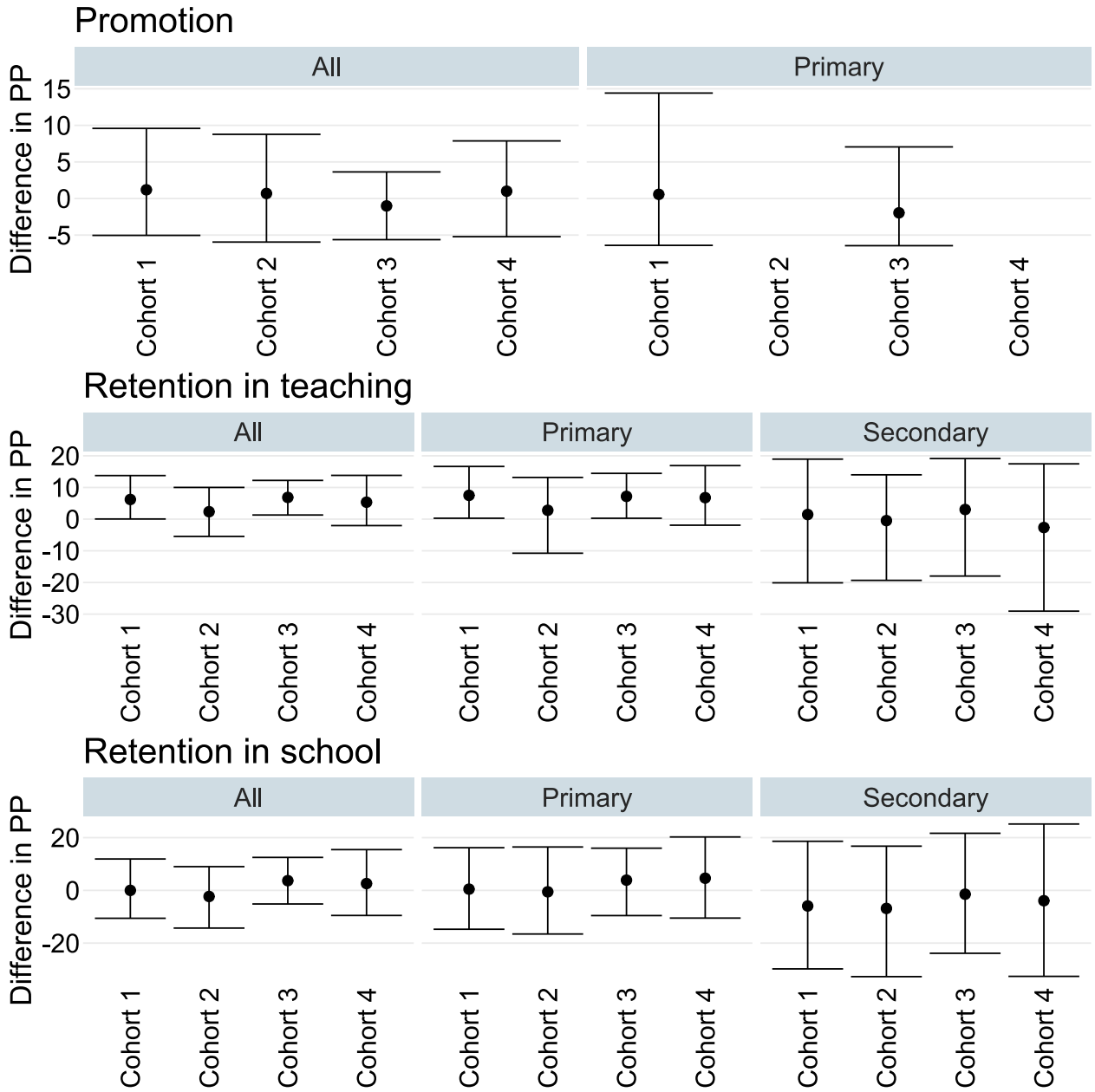
Table 33: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQEL – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	-3pp (-8pp, 1pp)	-2pp (-8pp, 3pp)	-3pp (-7pp, 0pp)	-3pp (-8pp, 2pp)
All	Retention teaching	8pp (0pp, 18pp)	9pp (0pp, 18pp)	7pp (0pp, 15pp)	7pp (-4pp, 17pp)
All	Retention school	2pp (-11pp, 15pp)	1pp (-13pp, 15pp)	4pp (-7pp, 15pp)	3pp (-12pp, 18pp)
Primary	Promotion	-4pp (-9pp, 1pp)	-3pp (-10pp, 3pp)	-3pp (-7pp, 1pp)	-3pp (-8pp, 3pp)
Primary	Retention teaching	11pp (-1pp, 23pp)	11pp (-1pp, 23pp)	7pp (-5pp, 18pp)	8pp (-4pp, 21pp)
Primary	Retention school	1pp (-16pp, 18pp)	4pp (-14pp, 23pp)	3pp (-13pp, 17pp)	3pp (-16pp, 21pp)
Secondary	Promotion	NA (CI > 100)	NA (CI > 100)	-5pp (-11pp, -1pp)	NA (CI > 100)
Secondary	Retention teaching	3pp (-23pp, 25pp)	5pp (-17pp, 24pp)	4pp (-15pp, 23pp)	-5pp (-35pp, 22pp)
Secondary	Retention school	0pp (-27pp, 30pp)	-4pp (-32pp, 23pp)	5pp (-21pp, 29pp)	-1pp (-33pp, 29pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

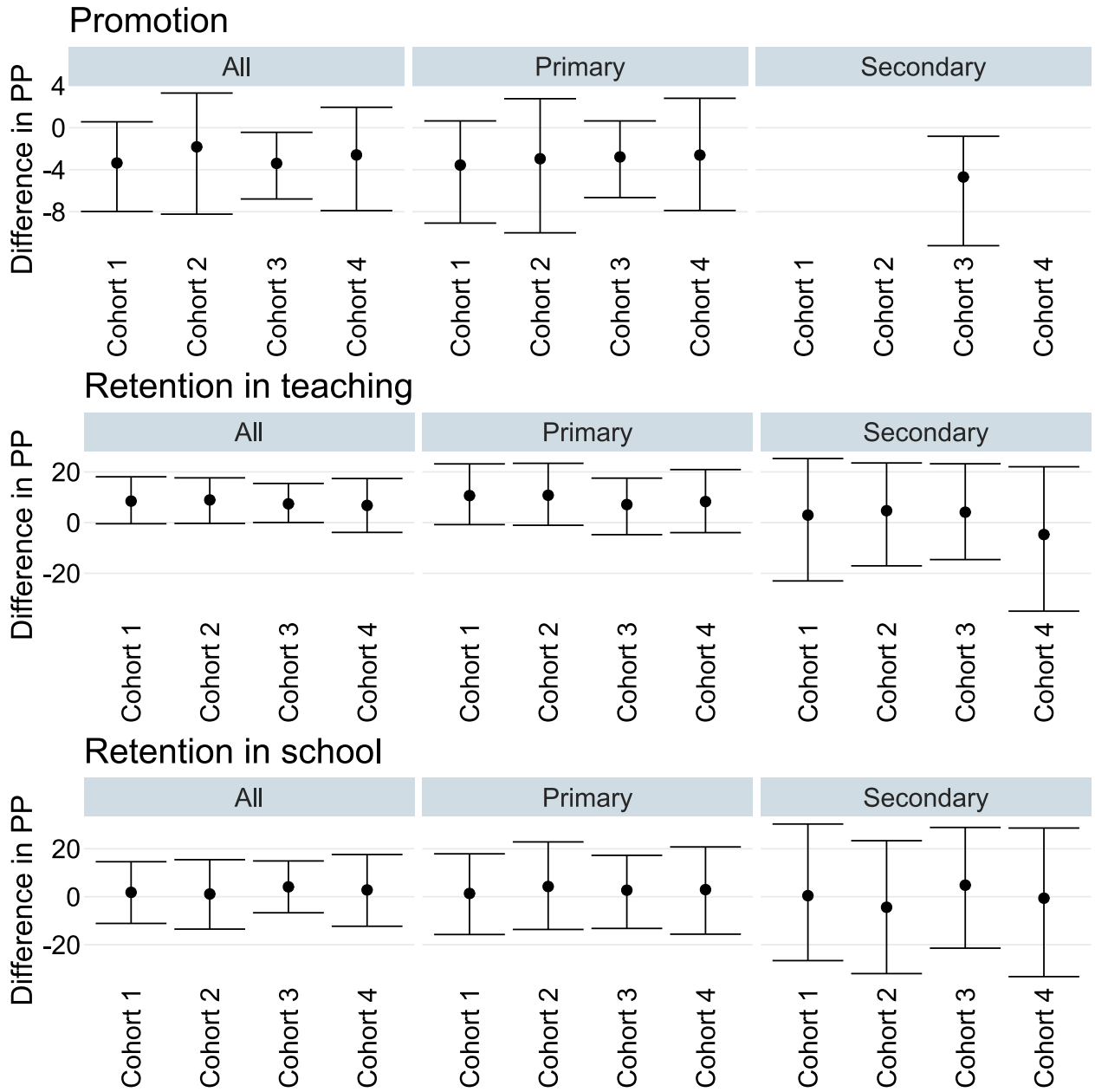
Figure 7: Estimated differences in outcomes for entrants and non-entrants, NPQEL – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

Figure 8: Estimated differences in outcomes for entrants and non-entrants, NPQEL – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

The difference for promotion was close to zero one year after starting NPQEL. Two years after starting an NPQ the point estimates were slightly negative (around -2 to -3 percentage points), consistent with the fact that most entrants to this qualification were already in the most senior roles.

For retention in teaching, point estimates were positive (around 2 to 7 percentage points one year after starting an NPQ and 7 to 9 percentage points two years after starting an NPQ), but the confidence intervals were wide. For retention in the same school, there

was no clear evidence of a difference: the point estimates were close to zero and all confidence intervals included zero. Estimates for secondary schools in particular were very uncertain.

NPQH

The table below shows the estimated impact of entering this NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Table 34: Estimated impact (odds ratios), NPQH entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	5.42* (3.60, 9.01)	6.06* (3.71, 11.24)	4.91* (3.52, 7.29)	5.93* (3.62, 11.85)
All	Retention teaching	4.33* (2.72, 7.46)	3.25* (1.96, 5.74)	4.27* (2.94, 6.64)	2.69* (1.71, 4.56)
All	Retention school	1.18 (0.93, 1.53)	0.92 (0.69, 1.20)	1.20 (0.96, 1.46)	0.94 (0.68, 1.26)
Primary	Promotion	5.66* (3.25, 10.86)	7.29* (3.80, 17.43)	5.13* (3.30, 8.87)	6.25* (3.21, 16.04)
Primary	Retention teaching	5.66* (2.79, 13.54)	4.38* (2.04, 11.23)	5.60* (3.23, 10.33)	3.06* (1.54, 6.93)
Primary	Retention school	1.16 (0.81, 1.62)	0.93 (0.65, 1.34)	1.23 (0.93, 1.63)	0.97 (0.60, 1.39)
Secondary	Promotion	5.36* (2.57, 15.01)	4.68* (2.14, 15.45)	4.88* (2.64, 11.20)	7.13* (2.74, 25.15)
Secondary	Retention teaching	2.72* (1.26, 6.51)	3.25* (1.21, 9.09)	3.98* (2.03, 8.43)	2.14 (0.85, 4.97)
Secondary	Retention school	1.11 (0.70, 1.67)	1.02 (0.59, 1.63)	1.31 (0.88, 1.89)	0.86 (0.48, 1.46)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Table 35: Estimated impact (odds ratios), NPQH entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	3.78* (2.68, 5.76)	4.21* (2.85, 7.08)	4.34* (3.08, 6.13)	3.71* (2.22, 6.53)
All	Retention teaching	3.10* (2.20, 4.29)	3.85* (2.59, 6.05)	4.22* (3.16, 5.67)	3.94* (2.63, 6.41)
All	Retention school	1.17 (0.94, 1.47)	1.10 (0.89, 1.37)	1.17 (0.97, 1.38)	1.09 (0.84, 1.41)
Primary	Promotion	4.02* (2.53, 7.08)	5.35* (3.10, 9.88)	5.53* (3.56, 9.33)	4.61* (2.32, 10.94)
Primary	Retention teaching	3.39* (2.17, 5.33)	5.50* (3.18, 10.68)	5.41* (3.66, 8.94)	4.00* (2.16, 7.58)
Primary	Retention school	1.14 (0.85, 1.46)	1.12 (0.81, 1.53)	1.21 (0.98, 1.54)	1.10 (0.74, 1.52)
Secondary	Promotion	3.73* (1.90, 9.49)	2.72* (1.39, 7.20)	3.05* (1.72, 6.06)	2.81* (1.21, 8.14)
Secondary	Retention teaching	2.59* (1.40, 4.37)	3.21* (1.71, 6.21)	3.19* (1.9, 5.28)	3.78* (1.88, 8.58)
Secondary	Retention school	1.12 (0.76, 1.60)	1.19 (0.72, 1.79)	1.18 (0.82, 1.6)	1.02 (0.59, 1.59)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Overall, these results showed evidence of a significant positive effect on promotion and retention in the state-funded teacher workforce, both one and two years after starting NPQH. They did not show evidence of a significant effect on retention in the same school. This reflected the findings of the overall evaluation as Leadership NPQ participants were more likely to state they had moved schools to get their new role when compared with Specialist NPQ participants.

When broken down by phase, the point estimates of impact on promotion and retention in the state-funded teacher workforce were generally higher for primary than for secondary entrants, both one and two years after starting an NPQ, although differences were small and the confidence intervals overlap. This pattern was less consistent for retention in the same school, where the estimated impact was small and not statistically significant for either phase in any cohort.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 36 and 37 present modelled estimates of the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Finally, Tables 38 and 39 and Figures 9 and 10 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

Table 36: Estimated outcomes for entrants and non-entrants, NPQH – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	17%	4%	18%	4%	19%	4%	20%	4%
All	Retention teaching	98%	93%	98%	93%	98%	91%	96%	91%
All	Retention school	84%	82%	81%	82%	82%	79%	78%	79%
Primary	Promotion	18%	4%	20%	3%	19%	4%	20%	4%
Primary	Retention teaching	99%	93%	98%	93%	98%	91%	97%	91%
Primary	Retention school	85%	83%	81%	82%	82%	79%	78%	78%
Secondary	Promotion	17%	4%	14%	3%	18%	4%	22%	4%
Secondary	Retention teaching	97%	93%	98%	93%	98%	91%	95%	90%
Secondary	Retention school	83%	81%	83%	82%	83%	79%	75%	78%

Source: NPQ MI, GIAS and SWC data

Table 37: Estimated outcomes for entrants and non-entrants, NPQH – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	17%	5%	18%	5%	18%	5%	15%	4%
All	Retention teaching	95%	86%	96%	86%	96%	85%	96%	85%
All	Retention school	74%	71%	73%	71%	72%	68%	70%	68%
Primary	Promotion	17%	5%	20%	5%	19%	4%	15%	4%
Primary	Retention teaching	95%	86%	97%	86%	97%	85%	96%	85%
Primary	Retention school	74%	71%	73%	71%	72%	68%	70%	68%
Secondary	Promotion	16%	5%	13%	5%	16%	6%	13%	5%
Secondary	Retention teaching	94%	86%	95%	86%	95%	85%	95%	84%
Secondary	Retention school	71%	69%	73%	70%	71%	67%	67%	66%

Source: NPQ MI, GIAS and SWC data

Table 38: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQH – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	14pp (10pp, 17pp)	14pp (10pp, 18pp)	14pp (11pp, 17pp)	16pp (11pp, 21pp)
All	Retention teaching	5pp (3pp, 8pp)	5pp (2pp, 8pp)	7pp (4pp, 9pp)	6pp (2pp, 10pp)
All	Retention school	2pp (-2pp, 7pp)	-1pp (-7pp, 4pp)	3pp (-2pp, 7pp)	-1pp (-8pp, 6pp)
Primary	Promotion	14pp (9pp, 19pp)	16pp (11pp, 21pp)	15pp (10pp, 19pp)	16pp (10pp, 22pp)
Primary	Retention teaching	6pp (2pp, 9pp)	5pp (1pp, 10pp)	7pp (4pp, 11pp)	6pp (1pp, 11pp)
Primary	Retention school	2pp (-5pp, 8pp)	-1pp (-8pp, 7pp)	3pp (-3pp, 9pp)	-1pp (-10pp, 9pp)
Secondary	Promotion	13pp (6pp, 20pp)	11pp (3pp, 17pp)	13pp (8pp, 19pp)	18pp (8pp, 26pp)
Secondary	Retention teaching	4pp (0pp, 9pp)	5pp (-1pp, 10pp)	7pp (2pp, 12pp)	5pp (-3pp, 13pp)
Secondary	Retention school	1pp (-8pp, 10pp)	0pp (-10pp, 10pp)	4pp (-4pp, 12pp)	-3pp (-15pp, 11pp)

Source: NPQ MI, GIAS and SWC data

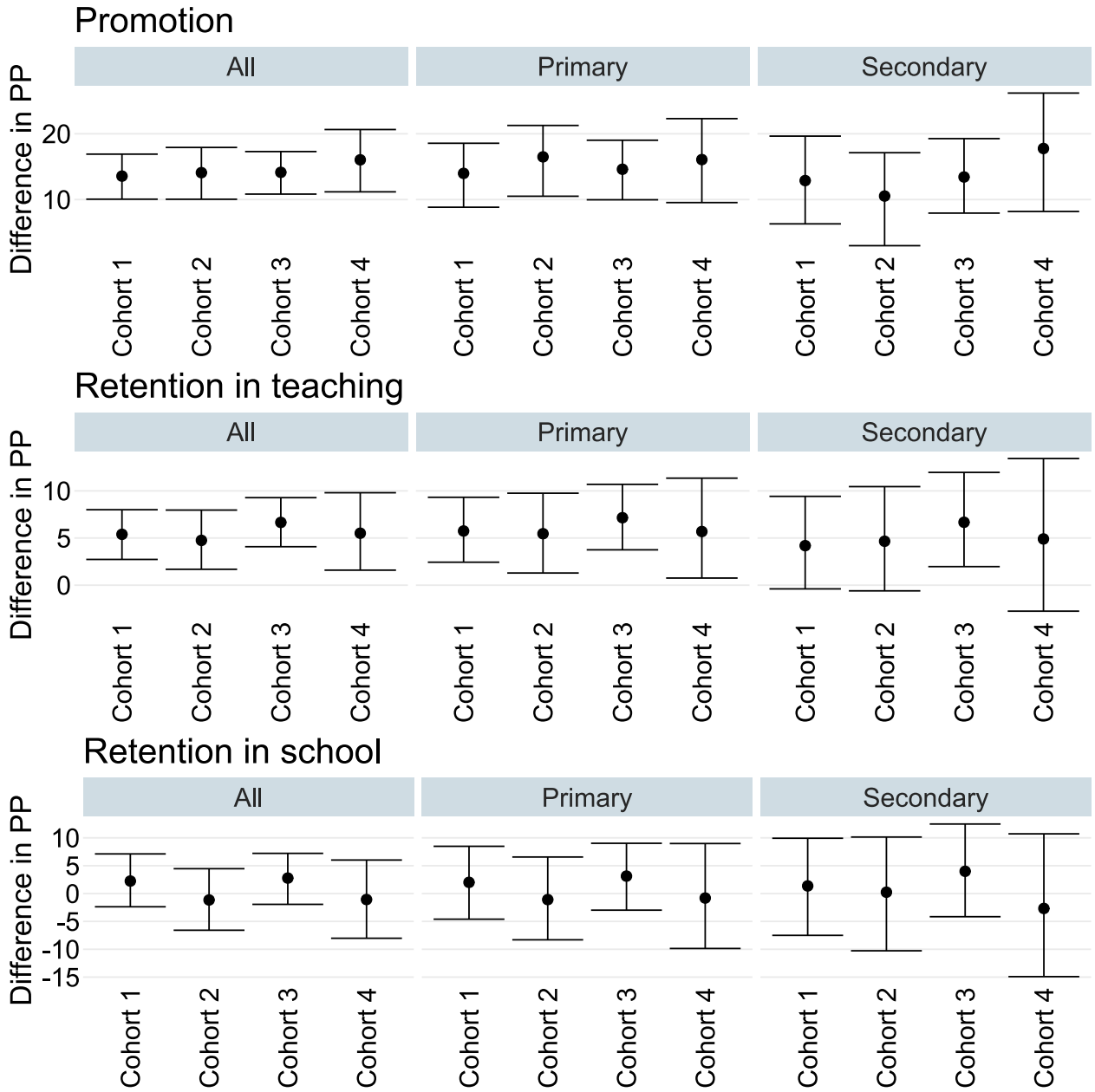
Table 39: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQH – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	12pp (8pp, 16pp)	13pp (8pp, 17pp)	13pp (10pp, 16pp)	10pp (6pp, 15pp)
All	Retention teaching	9pp (5pp, 13pp)	10pp (6pp, 15pp)	11pp (8pp, 14pp)	11pp (6pp, 16pp)
All	Retention school	3pp (-3pp, 9pp)	2pp (-5pp, 8pp)	3pp (-2pp, 9pp)	2pp (-6pp, 9pp)
Primary	Promotion	12pp (7pp, 17pp)	16pp (10pp, 21pp)	15pp (11pp, 19pp)	12pp (5pp, 17pp)
Primary	Retention teaching	9pp (5pp, 14pp)	11pp (6pp, 17pp)	12pp (8pp, 16pp)	11pp (5pp, 18pp)
Primary	Retention school	3pp (-6pp, 10pp)	2pp (-7pp, 11pp)	4pp (-3pp, 11pp)	2pp (-8pp, 12pp)
Secondary	Promotion	11pp (4pp, 18pp)	8pp (0pp, 14pp)	10pp (4pp, 16pp)	8pp (-1pp, 16pp)
Secondary	Retention teaching	8pp (1pp, 15pp)	9pp (2pp, 17pp)	10pp (4pp, 16pp)	11pp (3pp, 20pp)
Secondary	Retention school	3pp (-9pp, 13pp)	3pp (-9pp, 15pp)	3pp (-6pp, 12pp)	0pp (-14pp, 14pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

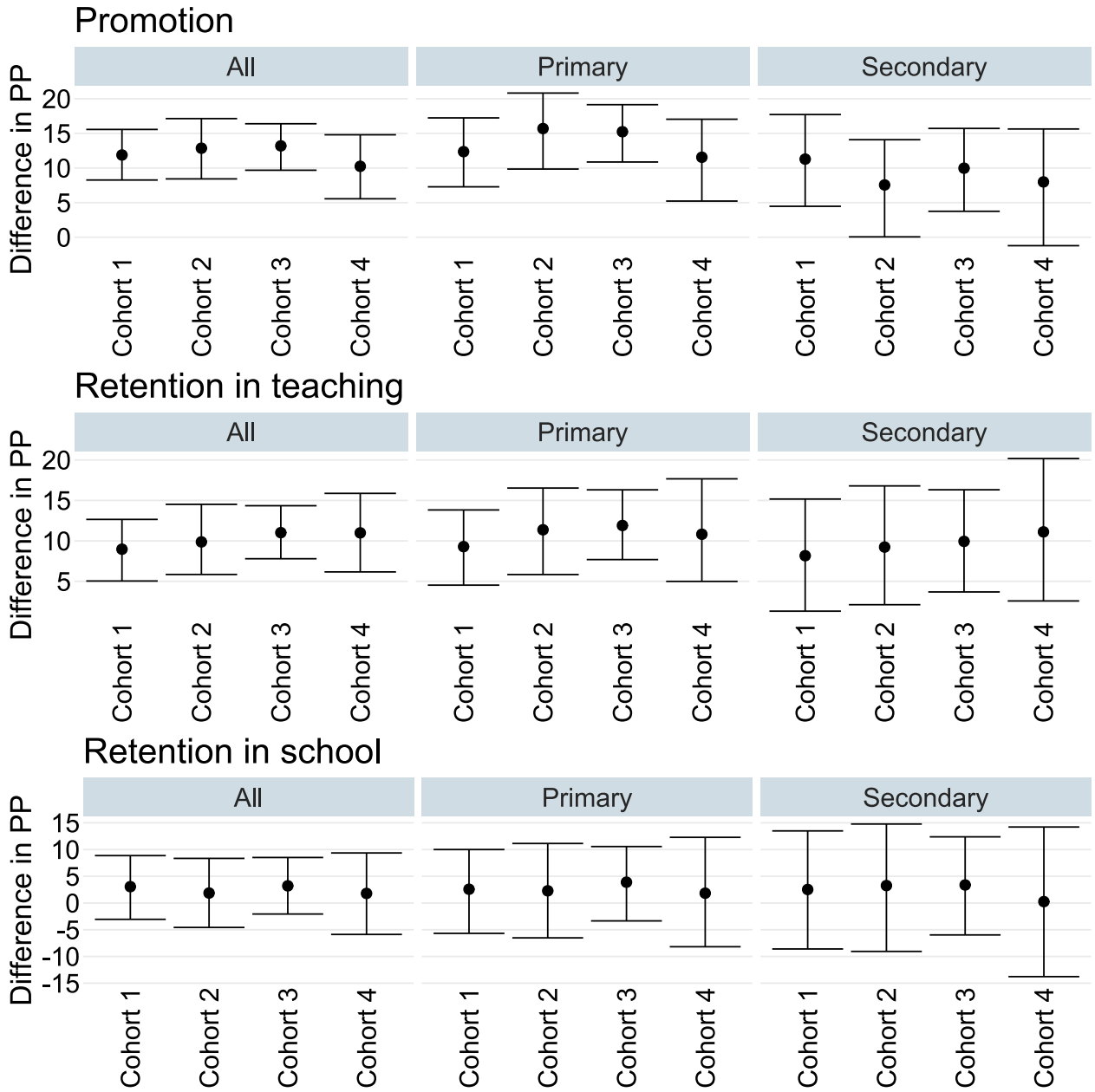
Figure 9: Estimated differences in outcomes for entrants and non-entrants, NPQH – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

Figure 10: Estimated differences in outcomes for entrants and non-entrants, NPQH – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

The difference for promotion was around 14 to 16 percentage points one year after starting NPQH and around 10 to 13 percentage points two years after starting an NPQ, and was consistent across cohorts and across primary and secondary schools. For retention in teaching, differences were around 5 to 7 percentage points one year after starting an NPQ and around 9 to 11 percentage points two years after starting an NPQ.

For retention in the same school, there was no clear evidence of a difference. The point estimates were close to zero and the confidence intervals included zero for every NPQH cohort, both one and two years after starting an NPQ.

NPQSL

The table below shows the estimated impact of entering this NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Table 40: Estimated impact (odds ratios), NPQSL entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	3.44* (2.59, 5.01)	3.50* (2.48, 5.45)	3.67* (2.80, 4.85)	3.52* (2.35, 6.04)
All	Retention teaching	8.01* (5.47, 12.2)	7.82* (5.21, 13.18)	6.69* (4.99, 8.88)	4.36* (2.98, 6.55)
All	Retention school	1.42* (1.18, 1.68)	1.24* (1.01, 1.52)	1.57* (1.35, 1.82)	1.09 (0.88, 1.33)
Primary	Promotion	4.16* (2.45, 8.48)	3.83* (2.03, 8.97)	4.21* (2.63, 7.80)	4.24* (1.97, 14.00)
Primary	Retention teaching	10.16* (5.84, 21.75)	8.11* (4.59, 16.78)	7.41* (4.81, 11.66)	7.62* (4.10, 17.83)
Primary	Retention school	1.42* (1.08, 1.85)	1.23 (0.92, 1.66)	1.64* (1.33, 1.99)	1.07 (0.80, 1.52)
Secondary	Promotion	2.93* (1.94, 4.76)	3.45* (2.07, 6.45)	3.35* (2.17, 5.36)	3.24* (1.84, 6.81)
Secondary	Retention teaching	7.40* (4.29, 14.08)	7.31* (3.73, 15.88)	5.99* (3.98, 9.64)	2.93* (1.66, 4.96)
Secondary	Retention school	1.38* (1.06, 1.76)	1.24 (0.92, 1.67)	1.50* (1.19, 1.89)	1.07 (0.75, 1.47)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Table 41: Estimated impact (odds ratios), NPQSL entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	4.83* (3.67, 6.55)	5.18* (3.61, 7.86)	4.22* (3.29, 5.74)	4.46* (2.95, 7.16)
All	Retention teaching	4.59* (3.63, 5.82)	4.99* (3.80, 6.97)	4.73* (3.89, 5.78)	5.58* (4.21, 7.72)
All	Retention school	1.45* (1.25, 1.67)	1.34* (1.12, 1.58)	1.47* (1.29, 1.66)	1.34* (1.12, 1.60)
Primary	Promotion	6.49* (4.07, 11.94)	6.99* (3.86, 14.18)	5.85* (3.89, 9.91)	6.31* (3.02, 22.32)
Primary	Retention teaching	6.17* (4.30, 9.04)	6.06* (3.97, 9.57)	5.52* (4.03, 7.65)	10.18* (6.30, 19.68)
Primary	Retention school	1.52* (1.23, 1.88)	1.29 (1.00, 1.64)	1.55* (1.29, 1.86)	1.41* (1.07, 1.91)
Secondary	Promotion	3.82* (2.60, 5.90)	3.76* (2.33, 6.70)	3.15* (2.28, 4.67)	3.54* (2.25, 5.88)
Secondary	Retention teaching	3.46* (2.55, 4.75)	4.09* (2.68, 6.37)	4.20* (3.09, 5.70)	3.86* (2.42, 6.05)
Secondary	Retention school	1.34* (1.07, 1.62)	1.40* (1.07, 1.78)	1.37* (1.11, 1.65)	1.23 (0.92, 1.61)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Overall, these results for NPQSL show evidence of a significant positive effect on promotion and retention in the state-funded teacher workforce, both one and two years after starting the qualification. The effect on retention in the same school was lowest; in some cases it was not significant and even where it was, the lower confidence intervals were not much above one. This reflects the findings of the overall evaluation as Leadership NPQ participants were more likely to state they had moved schools to get their new role when compared with Specialist NPQ participants. The impact on retention in the state-funded teacher workforce was strongest, followed by promotions.

When broken down by phase, the estimated impact on promotion and retention in the state-funded teacher workforce was generally higher for primary than for secondary entrants, both one and two years after starting an NPQ. This pattern was less consistent for retention in the same school, where the estimated impact was similar for primary and secondary entrants.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 42 and 43 present modelled estimates of the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Finally, Tables 44 and 45 and Figures 11 and 12 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

Table 42: Estimated outcomes for entrants and non-entrants, NPQSL – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	10%	3%	9%	3%	10%	3%	10%	3%
All	Retention teaching	99%	91%	99%	91%	98%	89%	97%	89%
All	Retention school	86%	82%	85%	82%	85%	79%	80%	78%
Primary	Promotion	8%	2%	7%	2%	8%	2%	8%	2%
Primary	Retention teaching	99%	91%	99%	91%	98%	89%	98%	89%
Primary	Retention school	87%	82%	85%	83%	85%	78%	79%	78%
Secondary	Promotion	11%	4%	13%	4%	12%	4%	12%	4%
Secondary	Retention teaching	99%	92%	99%	92%	98%	90%	96%	90%
Secondary	Retention school	86%	82%	86%	83%	85%	79%	80%	79%

Source: NPQ MI, GIAS and SWC data

Table 43: Estimated outcomes for entrants and non-entrants, NPQSL – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	14%	3%	14%	3%	12%	3%	13%	3%
All	Retention teaching	96%	84%	96%	84%	96%	82%	96%	82%
All	Retention school	77%	70%	76%	70%	75%	67%	73%	66%
Primary	Promotion	13%	2%	13%	2%	11%	2%	11%	2%
Primary	Retention teaching	97%	83%	97%	83%	96%	82%	98%	82%
Primary	Retention school	78%	70%	75%	70%	76%	67%	74%	67%
Secondary	Promotion	15%	4%	14%	4%	14%	5%	15%	5%
Secondary	Retention teaching	95%	84%	96%	85%	95%	83%	95%	83%
Secondary	Retention school	75%	70%	77%	71%	73%	67%	71%	67%

Source: NPQ MI, GIAS and SWC data

Table 44: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQSL – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	7pp (5pp, 9pp)	7pp (4pp, 9pp)	7pp (5pp, 9pp)	7pp (4pp, 10pp)
All	Retention teaching	8pp (6pp, 9pp)	7pp (5pp, 10pp)	9pp (7pp, 11pp)	8pp (5pp, 11pp)
All	Retention school	5pp (1pp, 8pp)	3pp (-1pp, 7pp)	6pp (3pp, 10pp)	1pp (-3pp, 6pp)
Primary	Promotion	6pp (3pp, 8pp)	5pp (2pp, 8pp)	6pp (4pp, 8pp)	6pp (2pp, 9pp)
Primary	Retention teaching	8pp (5pp, 11pp)	8pp (5pp, 11pp)	9pp (7pp, 12pp)	9pp (5pp, 14pp)
Primary	Retention school	4pp (-1pp, 9pp)	3pp (-2pp, 9pp)	7pp (3pp, 11pp)	1pp (-6pp, 8pp)
Secondary	Promotion	7pp (3pp, 10pp)	9pp (4pp, 13pp)	8pp (5pp, 11pp)	8pp (3pp, 12pp)
Secondary	Retention teaching	7pp (4pp, 10pp)	7pp (4pp, 10pp)	8pp (5pp, 11pp)	7pp (2pp, 12pp)
Secondary	Retention school	4pp (-1pp, 8pp)	3pp (-3pp, 9pp)	6pp (1pp, 10pp)	1pp (-6pp, 9pp)

Source: NPQ MI, GIAS and SWC data

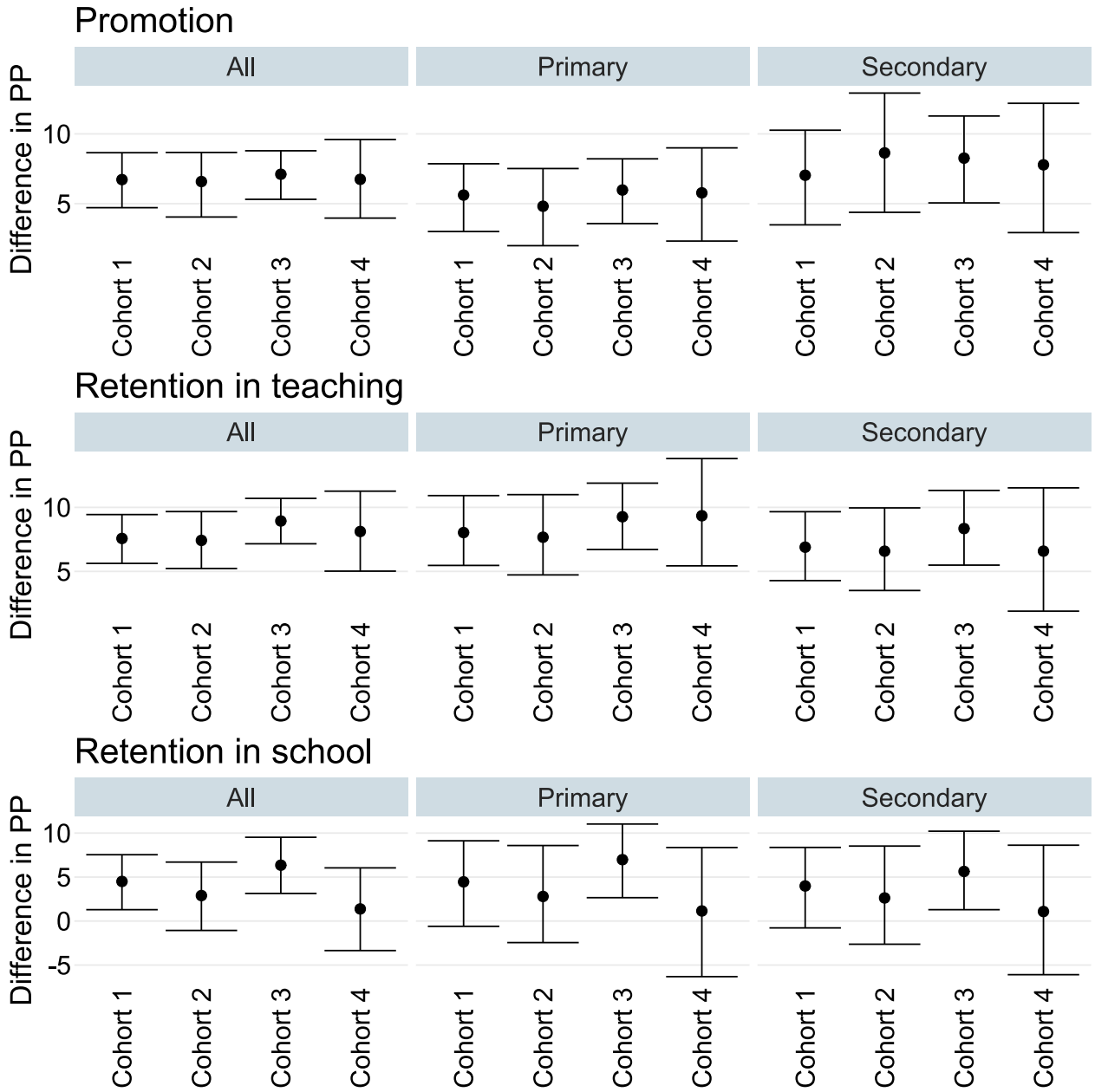
Table 45: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQSL – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	11pp (9pp, 13pp)	11pp (8pp, 14pp)	9pp (7pp, 11pp)	10pp (7pp, 13pp)
All	Retention teaching	12pp (10pp, 15pp)	13pp (10pp, 16pp)	13pp (11pp, 16pp)	14pp (10pp, 18pp)
All	Retention school	7pp (3pp, 11pp)	6pp (1pp, 10pp)	8pp (4pp, 11pp)	6pp (0pp, 12pp)
Primary	Promotion	11pp (8pp, 14pp)	11pp (8pp, 14pp)	9pp (6pp, 11pp)	9pp (5pp, 13pp)
Primary	Retention teaching	14pp (10pp, 18pp)	14pp (9pp, 18pp)	14pp (11pp, 18pp)	16pp (11pp, 22pp)
Primary	Retention school	8pp (2pp, 14pp)	5pp (-2pp, 12pp)	9pp (4pp, 14pp)	7pp (-1pp, 15pp)
Secondary	Promotion	11pp (7pp, 14pp)	10pp (6pp, 14pp)	9pp (6pp, 12pp)	10pp (5pp, 15pp)
Secondary	Retention teaching	11pp (7pp, 15pp)	11pp (6pp, 16pp)	12pp (8pp, 16pp)	12pp (6pp, 18pp)
Secondary	Retention school	6pp (0pp, 11pp)	6pp (-1pp, 13pp)	6pp (1pp, 12pp)	4pp (-4pp, 12pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

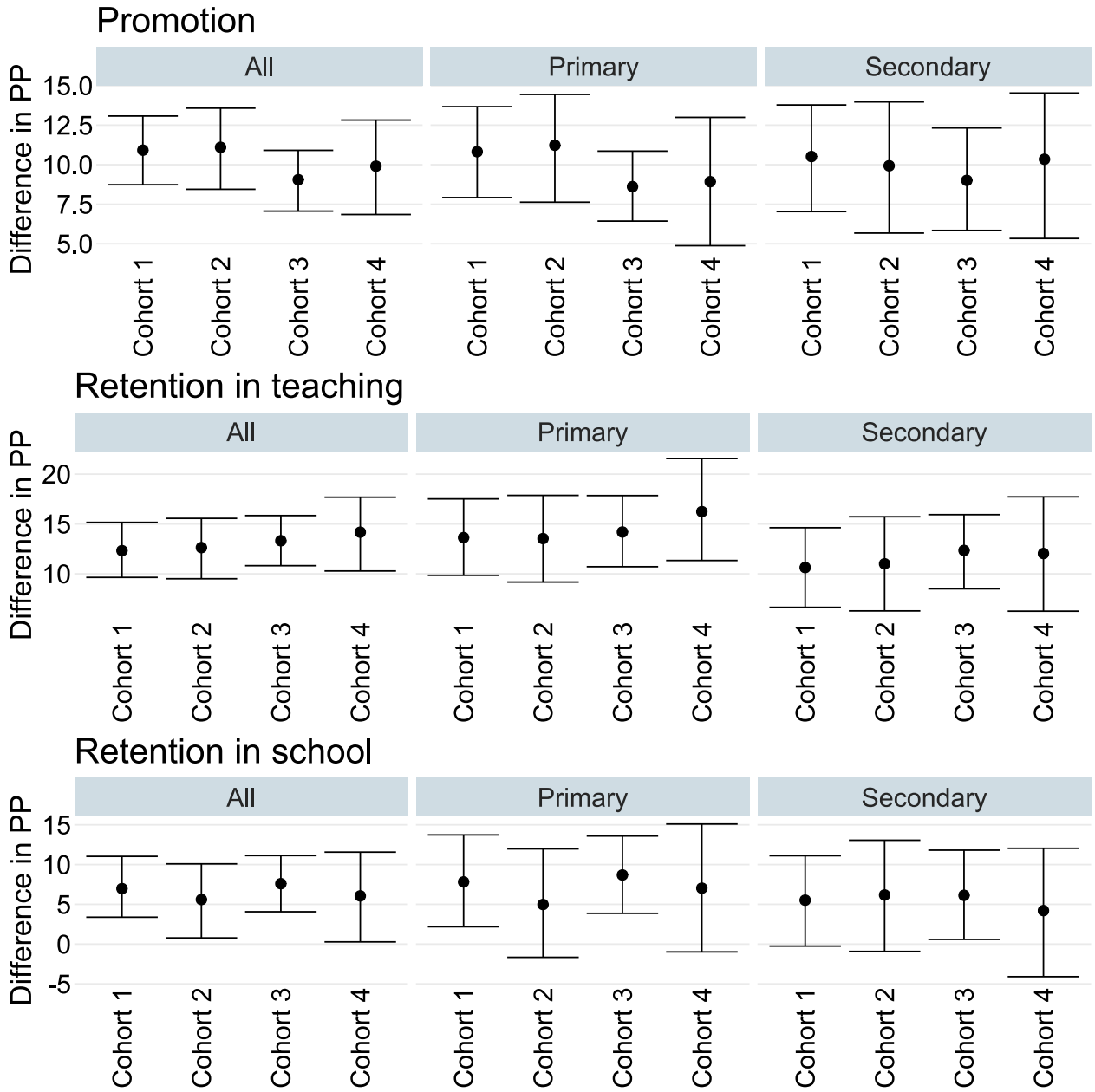
Figure 11: Estimated differences in outcomes for entrants and non-entrants, NPQSL – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

Figure 12: Estimated differences in outcomes for entrants and non-entrants, NPQSL – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

The difference for promotion was around 7 percentage points one year after starting NPQSL, consistent across cohorts, rising to around 9 to 11 percentage points two years after starting an NPQ. For retention in teaching, differences were around 7 to 9 percentage points one year after starting an NPQ and around 12 to 14 percentage points two years after starting an NPQ. For retention in the same school, differences were around 1 to 6 percentage points one year after starting an NPQ and around 6 to 8 percentage points two years after starting an NPQ.

NPQEYL

The table below shows the estimated impact of entering this NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Note that this qualification was introduced later than other 2021 NPQs so there were no entrants in Cohorts 1 or 2. Breakdowns by phase are not presented for this qualification as, because of the nature of the qualification, virtually all entrants were based in a primary phase institution.

Table 46: Estimated impact (odds ratios), NPQEYL entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	NA	NA	1.89 (0.66, 8.35)	1.29 (0.76, 2.31)
All	Retention teaching	NA	NA	10.30* (4.95, 33.38)	4.54* (3.10, 6.87)
All	Retention school	NA	NA	2.00* (1.33, 2.97)	1.43* (1.15, 1.76)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Table 47: Estimated impact (odds ratios), NPQEYL entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	NA	NA	3.04* (1.27, 12.49)	1.68* (1.09, 2.92)
All	Retention teaching	NA	NA	3.20* (2.07, 5.22)	4.54* (3.42, 6.35)
All	Retention school	NA	NA	1.64* (1.19, 2.29)	1.56* (1.27, 1.90)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Here there were some wide confidence intervals and inconclusive results, likely connected to the relatively low numbers of entrants to this qualification. In particular, for Cohort 3 NPQEYL, one year after starting an NPQ, there was an unusually high point

estimate along with an unusually wide interval. This may be related to particularly high levels of variation in retention in the cohort or the comparison group.

Unlike most other qualifications, the point estimates for promotion were lower than for both of the other outcomes one year after starting an NPQ, although the pattern for two years after was consistent with other qualifications.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 48 and 49 present modelled estimates of the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Finally, Tables 50 and 51 and Figures 13 and 14 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

Table 48: Estimated outcomes for entrants and non-entrants, NPQEYL – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	NA	NA	NA	NA	3%	2%	4%	3%
All	Retention teaching	NA	NA	NA	NA	99%	89%	97%	88%
All	Retention school	NA	NA	NA	NA	88%	79%	81%	76%

Source: NPQ MI, GIAS and SWC data

Table 49: Estimated outcomes for entrants and non-entrants, NPQEYL – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	NA	NA	NA	NA	5%	2%	5%	3%
All	Retention teaching	NA	NA	NA	NA	94%	82%	95%	81%
All	Retention school	NA	NA	NA	NA	78%	69%	73%	64%

Source: NPQ MI, GIAS and SWC data

Table 50: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQEYL – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	NA	NA	2pp (-2pp, 4pp)	1pp (-2pp, 3pp)
All	Retention teaching	NA	NA	10pp (6pp, 15pp)	9pp (5pp, 12pp)
All	Retention school	NA	NA	9pp (2pp, 17pp)	6pp (0pp, 11pp)

Source: NPQ MI, GIAS and SWC data

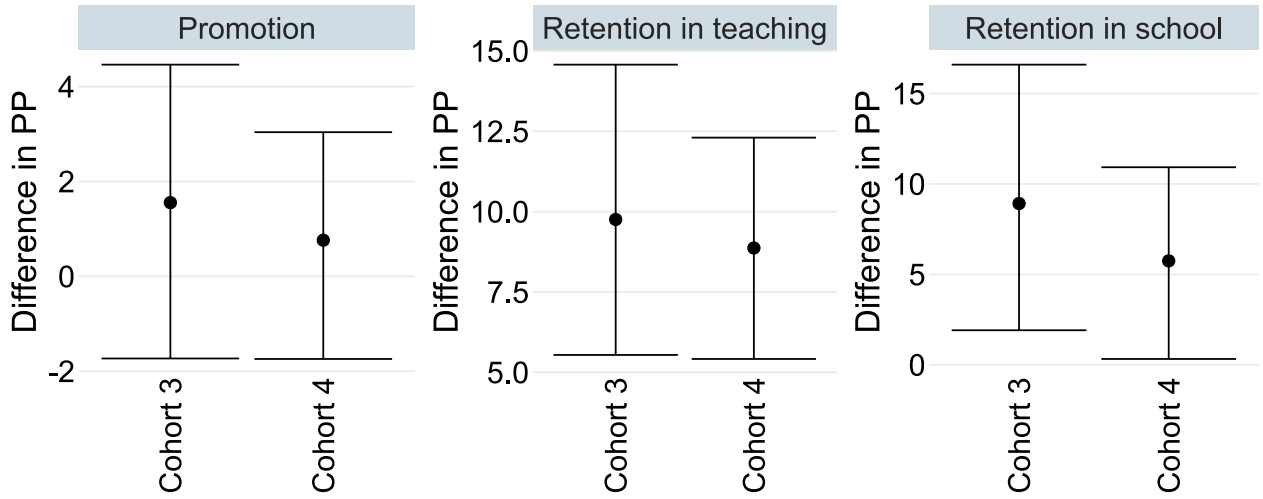
Table 51: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQEYL – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	NA	NA	3pp (0pp, 6pp)	2pp (-1pp, 5pp)
All	Retention teaching	NA	NA	11pp (5pp, 18pp)	14pp (10pp, 18pp)
All	Retention school	NA	NA	9pp (1pp, 19pp)	9pp (3pp, 15pp)

Source: NPQ MI, GIAS and SWC data

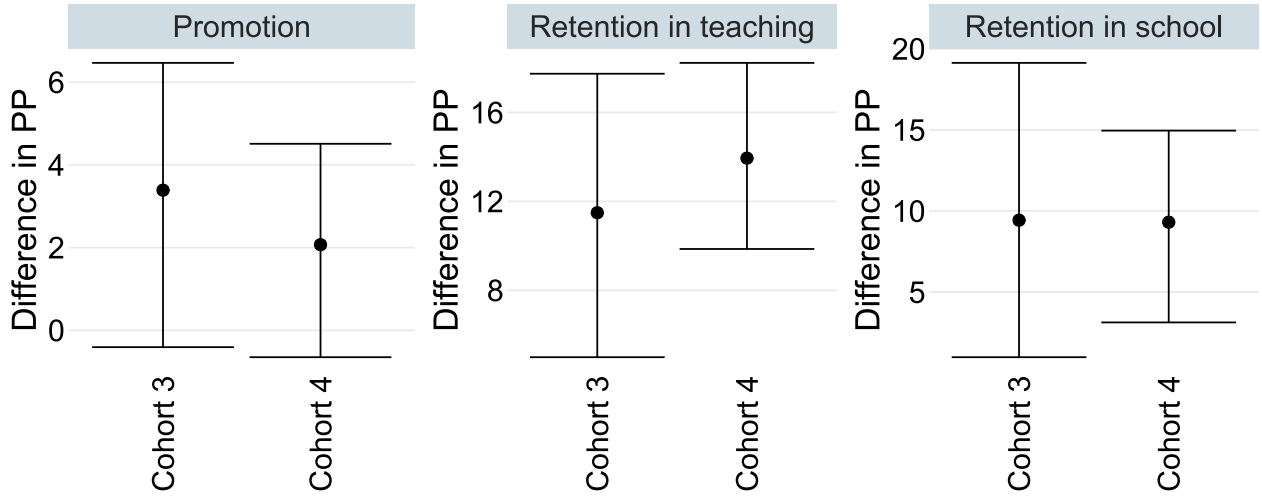
Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

Figure 13: Estimated differences in outcomes for entrants and non-entrants, NPQEYL – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Figure 14: Estimated differences in outcomes for entrants and non-entrants, NPQEYL – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

The difference for promotion was around 1 to 3 percentage points, and was not statistically significant. For retention in teaching, on the other hand, differences were statistically significant, at around 9 to 10 percentage points one year after starting an NPQ and around 11 to 14 percentage points two years after starting NPQEYL.

For retention in the same school, differences were around 6 to 9 percentage points, though the confidence intervals were wide and the lower confidence interval for Cohort 4 one year after starting an NPQ was close to zero.

NPQLBC

The table below shows the estimated impact of entering this NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Table 52: Estimated impact (odds ratios), NPQLBC entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	2.04* (1.19, 3.88)	1.77* (1.06, 3.35)	2.13* (1.28, 3.67)	2.65* (1.41, 5.59)
All	Retention teaching	7.67* (4.14, 19.09)	3.72* (2.27, 6.60)	5.82* (3.94, 9.48)	5.33* (3.09, 9.71)
All	Retention school	1.93* (1.41, 2.65)	1.56* (1.16, 2.21)	1.97* (1.55, 2.51)	1.51* (1.07, 2.04)

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
Primary	Promotion	2.30 (0.65, 25.79)	2.04 (0.57, 19.1)	2.42 (0.95, 8.95)	NA (CI > 100)
Primary	Retention teaching	6.79* (2.16, 47.64)	4.57* (2.09, 14.51)	5.58* (2.65, 14.16)	6.30* (2.51, 26.22)
Primary	Retention school	1.79 (0.99, 3.04)	1.37 (0.82, 2.27)	1.55* (1.04, 2.23)	1.35 (0.77, 2.37)
Secondary	Promotion	2.11* (1.12, 4.46)	1.79 (0.91, 3.85)	2.24* (1.19, 3.92)	2.74* (1.44, 7.36)
Secondary	Retention teaching	10.58* (4.21, 55.19)	3.07* (1.71, 6.11)	6.50* (3.64, 13.72)	5.19* (2.66, 12.65)
Secondary	Retention school	1.98* (1.27, 3.17)	1.59* (1.08, 2.34)	2.39* (1.71, 3.34)	1.65* (1.08, 2.43)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)

* Statistically significant (alpha = 0.017)

Table 53: Estimated impact (odds ratios), NPQLBC entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	2.42* (1.46, 4.58)	2.57* (1.58, 4.42)	2.12* (1.34, 3.50)	2.19* (1.14, 4.59)
All	Retention teaching	3.64* (2.57, 5.39)	3.55* (2.53, 5.16)	3.65* (2.73, 4.97)	4.50* (2.92, 6.97)
All	Retention school	1.73* (1.34, 2.23)	1.75* (1.36, 2.24)	1.66* (1.33, 2.05)	1.67* (1.25, 2.18)
Primary	Promotion	1.82 (0.53, 19.89)	2.23 (0.70, 16.42)	2.71* (1.04, 10.00)	2.81 (0.80, 65.66)
Primary	Retention teaching	5.28* (2.58, 13.65)	3.92* (2.03, 7.94)	3.57* (2.10, 5.91)	4.29* (2.22, 9.38)
Primary	Retention school	1.58 (0.99, 2.50)	1.62* (1.07, 2.60)	1.49* (1.07, 2.06)	1.43 (0.87, 2.31)
Secondary	Promotion	2.66* (1.47, 5.25)	2.64* (1.46, 5.65)	1.86* (1.11, 3.29)	2.09* (1.07, 4.73)
Secondary	Retention teaching	3.18* (1.90, 5.40)	3.30* (2.09, 5.27)	3.95* (2.65, 6.03)	4.62* (2.64, 8.63)

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
Secondary	Retention school	1.79* (1.29, 2.50)	1.72* (1.26, 2.34)	1.77* (1.32, 2.29)	1.81* (1.28, 2.56)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Overall, these results showed a significant positive impact on all three outcomes. The impact on retention in the same school was relatively small, and the impact on retention in teaching was the strongest. However, when broken down by phase, the effects on promotion and retention in the same school were in many cases not significant at primary level; the impact on these outcomes may be driven more by secondary phase entrants.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 54 and 55 present modelled estimates of the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Finally, Tables 56 and 57 and Figures 15 and 16 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

Table 54: Estimated outcomes for entrants and non-entrants, NPQLBC – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	6%	3%	6%	3%	6%	3%	8%	3%
All	Retention teaching	99%	91%	97%	91%	98%	89%	98%	89%
All	Retention school	89%	81%	87%	81%	86%	77%	83%	77%
Primary	Promotion	3%	2%	3%	2%	4%	2%	NA (CI > 100)	NA (CI > 100)
Primary	Retention teaching	99%	91%	98%	91%	98%	89%	98%	89%
Primary	Retention school	89%	82%	86%	82%	84%	77%	82%	77%
Secondary	Promotion	8%	4%	7%	4%	8%	4%	10%	4%
Secondary	Retention teaching	99%	92%	97%	92%	98%	89%	98%	89%
Secondary	Retention school	89%	81%	87%	81%	88%	77%	84%	77%

Source: NPQ MI, GIAS and SWC data

Table 55: Estimated outcomes for entrants and non-entrants, NPQLBC – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	8%	4%	8%	3%	7%	3%	7%	3%
All	Retention teaching	95%	83%	95%	84%	94%	82%	95%	82%
All	Retention school	78%	68%	79%	69%	75%	65%	75%	65%
Primary	Promotion	3%	2%	4%	2%	5%	2%	5%	2%
Primary	Retention teaching	96%	83%	95%	83%	94%	82%	95%	81%
Primary	Retention school	78%	69%	78%	69%	74%	66%	73%	66%
Secondary	Promotion	11%	4%	10%	4%	8%	5%	9%	4%
Secondary	Retention teaching	94%	84%	95%	84%	95%	82%	95%	82%
Secondary	Retention school	79%	68%	79%	69%	76%	64%	76%	64%

Source: NPQ MI, GIAS and SWC data

Table 56: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQLBC – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	3pp (0pp, 6pp)	2pp (-1pp, 5pp)	3pp (1pp, 6pp)	5pp (1pp, 8pp)
All	Retention teaching	8pp (5pp, 11pp)	6pp (3pp, 10pp)	9pp (6pp, 12pp)	9pp (5pp, 13pp)
All	Retention school	8pp (2pp, 14pp)	6pp (0pp, 12pp)	10pp (4pp, 14pp)	6pp (-1pp, 14pp)
Primary	Promotion	2pp (-3pp, 6pp)	2pp (-2pp, 5pp)	2pp (-1pp, 5pp)	NA (CI > 100)
Primary	Retention teaching	7pp (1pp, 14pp)	7pp (1pp, 13pp)	9pp (4pp, 14pp)	9pp (3pp, 17pp)
Primary	Retention school	7pp (-3pp, 17pp)	4pp (-5pp, 13pp)	6pp (-2pp, 14pp)	5pp (-7pp, 18pp)
Secondary	Promotion	4pp (-1pp, 9pp)	3pp (-1pp, 7pp)	4pp (0pp, 8pp)	6pp (1pp, 11pp)
Secondary	Retention teaching	8pp (3pp, 12pp)	5pp (1pp, 10pp)	9pp (5pp, 14pp)	9pp (4pp, 14pp)
Secondary	Retention school	8pp (1pp, 16pp)	6pp (-1pp, 13pp)	12pp (5pp, 18pp)	7pp (-1pp, 16pp)

Source: NPQ MI, GIAS and SWC data

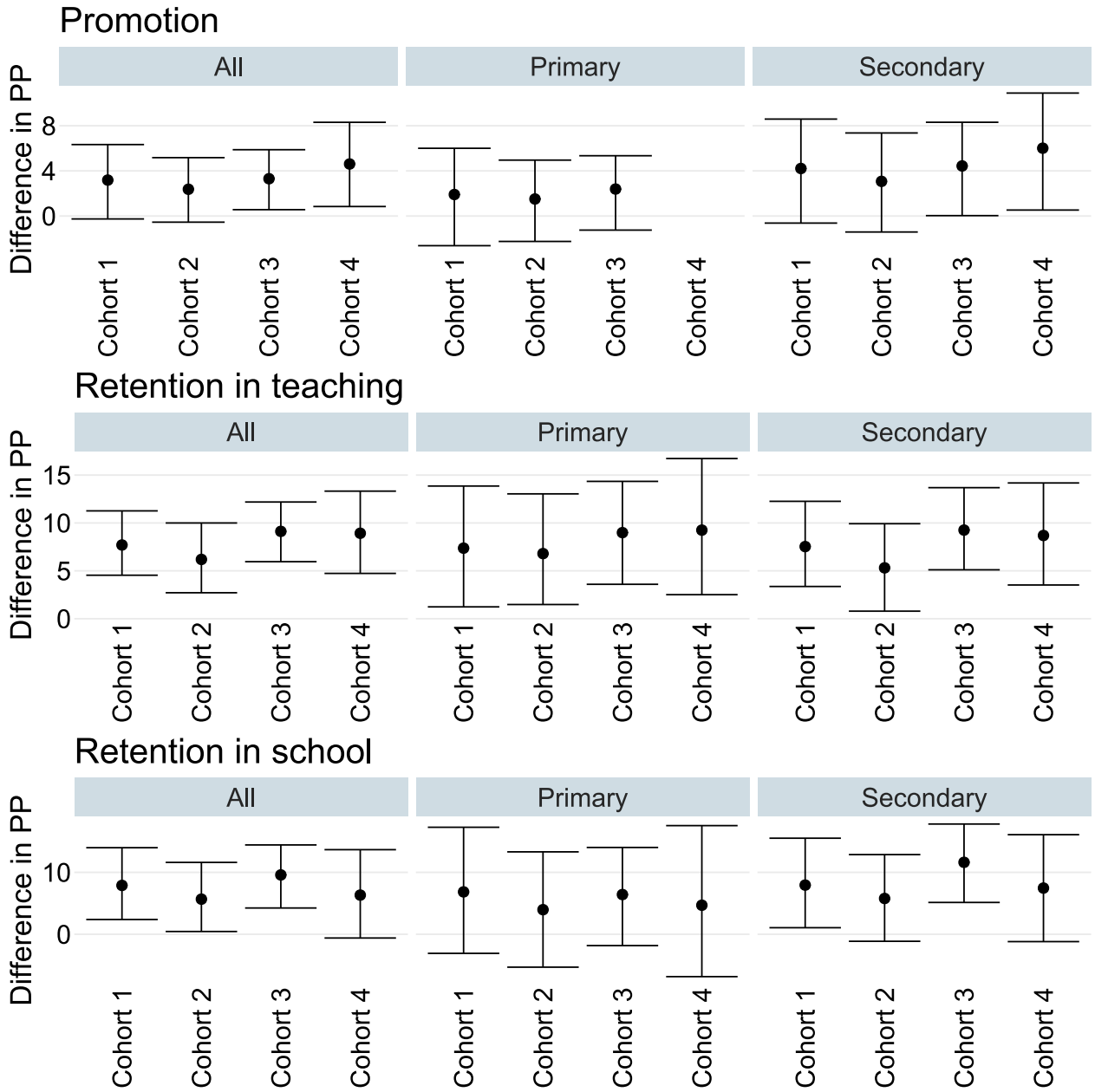
Table 57: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQLBC – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	5pp (1pp, 8pp)	5pp (1pp, 8pp)	4pp (1pp, 6pp)	4pp (0pp, 7pp)
All	Retention teaching	11pp (7pp, 17pp)	11pp (6pp, 16pp)	12pp (8pp, 17pp)	14pp (8pp, 19pp)
All	Retention school	10pp (3pp, 17pp)	10pp (4pp, 17pp)	10pp (4pp, 16pp)	10pp (3pp, 18pp)
Primary	Promotion	2pp (-3pp, 6pp)	2pp (-2pp, 6pp)	3pp (-1pp, 6pp)	3pp (-3pp, 8pp)
Primary	Retention teaching	13pp (5pp, 22pp)	12pp (4pp, 20pp)	12pp (5pp, 19pp)	13pp (5pp, 23pp)
Primary	Retention school	8pp (-3pp, 21pp)	9pp (-3pp, 20pp)	8pp (-2pp, 18pp)	7pp (-7pp, 21pp)
Secondary	Promotion	6pp (1pp, 11pp)	6pp (1pp, 11pp)	4pp (-1pp, 7pp)	4pp (-1pp, 10pp)
Secondary	Retention teaching	10pp (4pp, 17pp)	10pp (4pp, 16pp)	13pp (7pp, 18pp)	13pp (7pp, 20pp)
Secondary	Retention school	11pp (2pp, 20pp)	10pp (1pp, 18pp)	11pp (3pp, 19pp)	12pp (1pp, 22pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

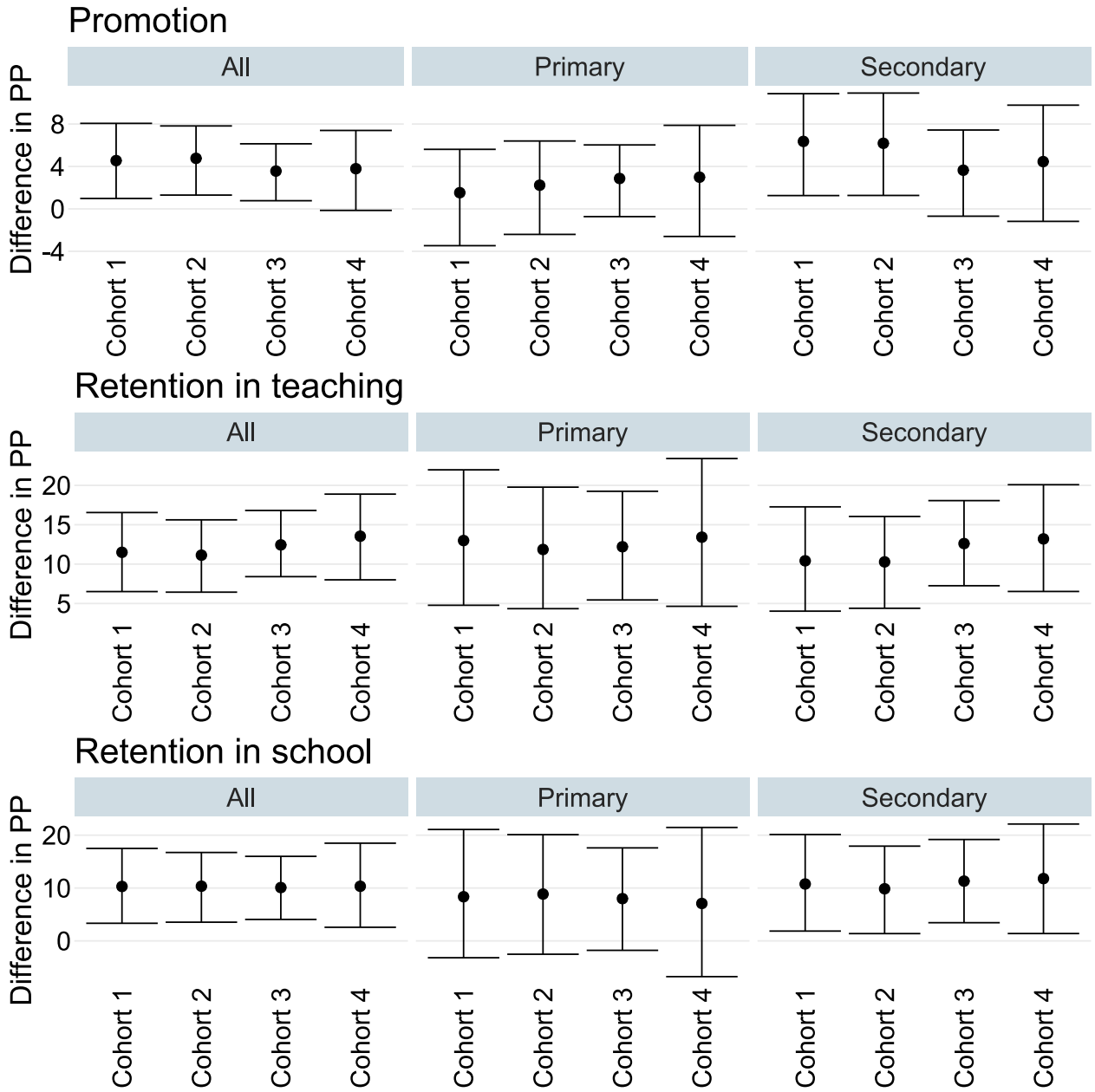
Figure 15: Estimated differences in outcomes for entrants and non-entrants, NPQLBC – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

Figure 16: Estimated differences in outcomes for entrants and non-entrants, NPQLBC – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

The difference for promotion was around 2 to 5 percentage points. For retention in teaching, differences were around 6 to 9 percentage points one year after starting an NPQ and around 11 to 14 percentage points two years after starting NPQLBC. For retention in the same school, differences were relatively large for a Specialist qualification, at around 6 to 10 percentage points one year after starting an NPQ and around 10 percentage points two years after starting an NPQ.

NPQLTD

The table below shows the estimated impact of entering this NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Table 58: Estimated impact (odds ratios), NPQLTD entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	2.00* (1.29, 3.27)	1.66 (0.92, 3.17)	2.06* (1.28, 3.96)	2.11* (1.02, 5.38)
All	Retention teaching	8.47* (5.23, 14.86)	5.30* (3.16, 9.59)	4.05* (2.76, 6.36)	4.36* (2.32, 8.17)
All	Retention school	1.69* (1.34, 2.16)	1.37* (1.04, 1.84)	1.73* (1.32, 2.22)	1.35 (0.94, 1.9)
Primary	Promotion	2.69* (1.25, 7.64)	2.36 (0.83, 13.79)	2.28 (0.85, 8.93)	NA (CI > 100)
Primary	Retention teaching	6.31* (3.19, 14.43)	6.96* (3.03, 23.84)	4.93* (2.53, 10.08)	5.14* (2.01, 21.35)
Primary	Retention school	1.92* (1.36, 2.74)	1.54 (0.93, 2.48)	1.86* (1.24, 2.77)	1.18 (0.67, 2.08)
Secondary	Promotion	1.74* (1.11, 3.04)	1.41 (0.73, 3.10)	1.80 (0.94, 3.80)	1.70 (0.68, 5.92)
Secondary	Retention teaching	10.25* (4.90, 27.84)	4.99* (2.44, 12.74)	3.51* (2.07, 6.39)	3.65* (1.77, 8.69)
Secondary	Retention school	1.54* (1.13, 2.08)	1.28 (0.87, 1.85)	1.63* (1.15, 2.24)	1.54 (0.98, 2.54)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Table 59: Estimated impact (odds ratios), NPQLTD entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	2.87* (1.94, 4.51)	2.73* (1.66, 4.89)	2.30* (1.46, 4.00)	2.35* (1.20, 5.48)
All	Retention teaching	3.42* (2.65, 4.41)	3.45* (2.46, 4.99)	2.79* (2.07, 3.75)	3.76* (2.27, 6.04)

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Retention school	1.68* (1.39, 2.08)	1.51* (1.20, 1.96)	1.52* (1.24, 1.85)	1.62* (1.18, 2.27)
Primary	Promotion	4.65* (2.32, 11.06)	3.97* (1.52, 19.14)	3.58* (1.29, 16.74)	NA (CI > 100)
Primary	Retention teaching	4.21* (2.79, 6.76)	3.63* (2.17, 6.38)	3.98* (2.34, 7.00)	3.75* (1.79, 7.64)
Primary	Retention school	1.90* (1.46, 2.60)	1.54* (1.04, 2.20)	1.71* (1.17, 2.48)	1.31 (0.79, 2.11)
Secondary	Promotion	2.16* (1.37, 3.87)	2.05* (1.13, 4.47)	1.89* (1.09, 3.70)	1.58 (0.68, 4.32)
Secondary	Retention teaching	2.88* (2.01, 4.31)	3.28* (2.06, 5.52)	2.29* (1.56, 3.32)	3.58* (1.89, 6.72)
Secondary	Retention school	1.51* (1.19, 1.96)	1.49* (1.09, 2.06)	1.40* (1.08, 1.86)	1.98* (1.27, 3.02)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Overall, these results provide evidence of a significant positive effect on retention in the state-funded teacher workforce and retention in the same school, both one and two years after starting NPQLTD. The effect was strongest on retention in the state-funded teacher workforce and weakest on retention in the same school.

For promotion, there was a significant positive effect two years after starting NPQLTD, but one year after starting an NPQ results were mixed. Overall, the effect was significant for Cohorts 1, 3 and 4, but not for Cohort 2, and when broken down by phase estimates were significant only for Cohort 1.

When breaking results down by phase, significant positive effects were seen on retention in teaching and retention in the same school. Effects on promotion were mainly not significant one year after starting an NPQ, although they were mainly significant two years after starting an NPQ. Effects on promotion and retention in teaching tended to be stronger for primary than secondary entrants, although this was less pronounced for Cohorts 3 and 4 NPQLTD than for earlier cohorts.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 60 and 61 present modelled estimates of the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Finally, Tables 62 and 63 and Figures 17 and 18 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

Table 60: Estimated outcomes for entrants and non-entrants, NPQLTD – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	6%	3%	5%	3%	6%	3%	6%	3%
All	Retention teaching	99%	91%	98%	91%	97%	89%	97%	89%
All	Retention school	88%	82%	86%	82%	86%	78%	82%	78%
Primary	Promotion	4%	2%	4%	2%	4%	2%	NA (CI > 100)	NA (CI > 100)
Primary	Retention teaching	98%	91%	99%	91%	98%	89%	98%	89%
Primary	Retention school	90%	82%	88%	82%	87%	78%	80%	78%
Secondary	Promotion	7%	4%	6%	4%	7%	4%	6%	4%
Secondary	Retention teaching	99%	92%	98%	92%	97%	89%	97%	89%
Secondary	Retention school	87%	82%	86%	82%	85%	78%	84%	78%

Source: NPQ MI, GIAS and SWC data

Table 61: Estimated outcomes for entrants and non-entrants, NPQLTD – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	9%	3%	8%	3%	7%	3%	7%	3%
All	Retention teaching	95%	84%	95%	84%	93%	82%	94%	82%
All	Retention school	79%	70%	78%	70%	75%	66%	76%	66%
Primary	Promotion	9%	2%	7%	2%	6%	2%	NA (CI > 100)	NA (CI > 100)
Primary	Retention teaching	96%	84%	95%	83%	95%	82%	94%	82%
Primary	Retention school	81%	70%	78%	70%	77%	67%	72%	67%
Secondary	Promotion	9%	4%	8%	4%	8%	4%	7%	4%
Secondary	Retention teaching	94%	85%	95%	85%	91%	82%	94%	82%
Secondary	Retention school	78%	70%	77%	70%	72%	66%	78%	65%

Source: NPQ MI, GIAS and SWC data

Table 62: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQLTD – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	3pp (0pp, 5pp)	2pp (-1pp, 5pp)	3pp (0pp, 6pp)	3pp (-1pp, 7pp)
All	Retention teaching	7pp (5pp, 10pp)	7pp (4pp, 10pp)	8pp (5pp, 12pp)	8pp (3pp, 14pp)
All	Retention school	6pp (2pp, 10pp)	4pp (-1pp, 10pp)	8pp (2pp, 13pp)	5pp (-3pp, 13pp)
Primary	Promotion	3pp (0pp, 5pp)	2pp (-2pp, 5pp)	2pp (-1pp, 6pp)	NA (CI > 100)
Primary	Retention teaching	7pp (4pp, 11pp)	8pp (3pp, 12pp)	9pp (4pp, 14pp)	8pp (1pp, 16pp)
Primary	Retention school	7pp (2pp, 13pp)	5pp (-3pp, 14pp)	9pp (1pp, 17pp)	2pp (-10pp, 16pp)
Secondary	Promotion	3pp (-1pp, 6pp)	2pp (-3pp, 6pp)	3pp (-2pp, 7pp)	2pp (-4pp, 7pp)
Secondary	Retention teaching	7pp (4pp, 10pp)	6pp (2pp, 11pp)	8pp (3pp, 13pp)	8pp (1pp, 15pp)
Secondary	Retention school	5pp (0pp, 11pp)	3pp (-4pp, 11pp)	7pp (0pp, 14pp)	6pp (-4pp, 17pp)

Source: NPQ MI, GIAS and SWC data

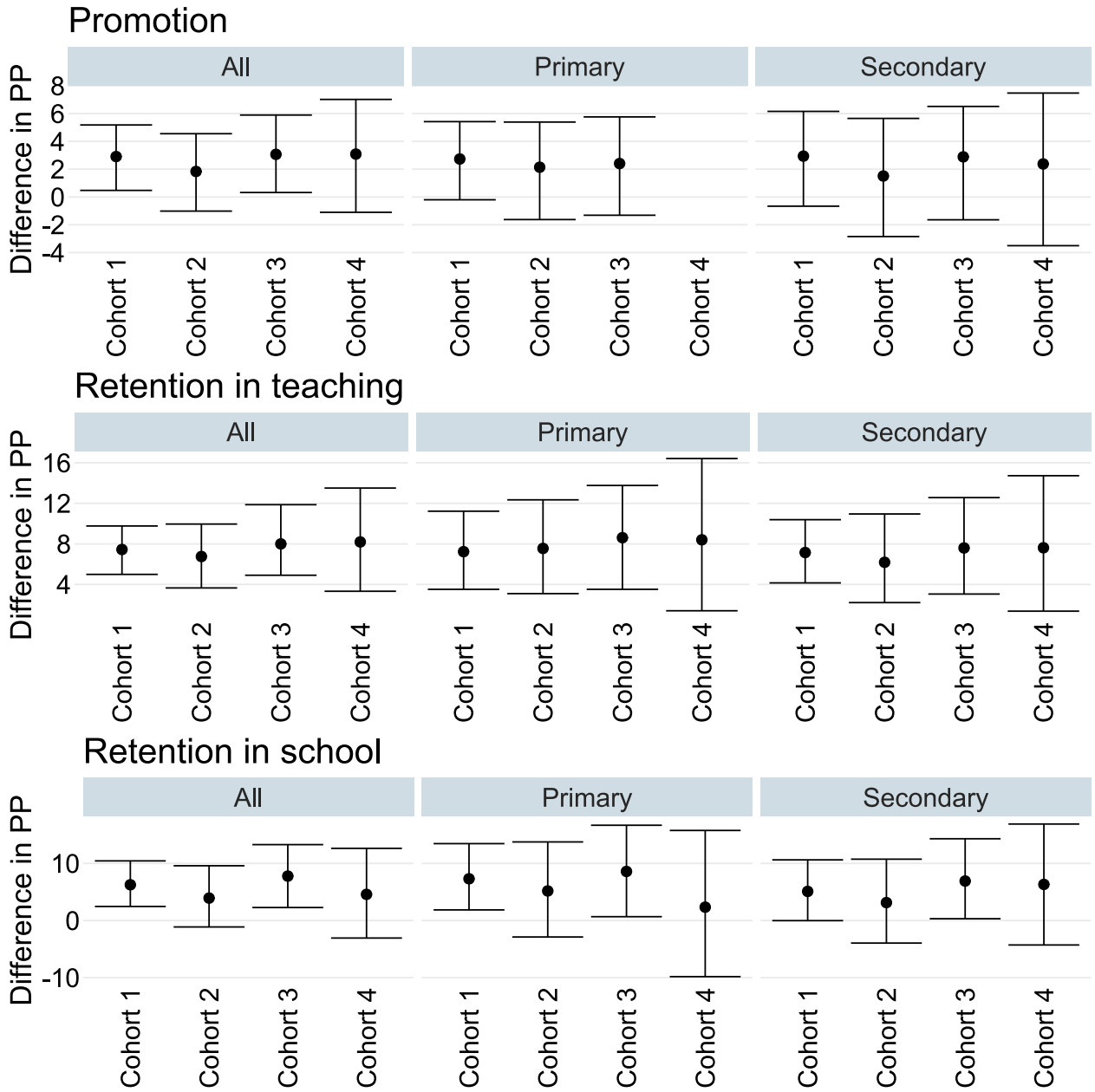
Table 63: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQLTD – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	5pp (3pp, 8pp)	5pp (2pp, 8pp)	4pp (1pp, 7pp)	4pp (0pp, 8pp)
All	Retention teaching	11pp (7pp, 15pp)	11pp (6pp, 15pp)	11pp (6pp, 15pp)	12pp (6pp, 19pp)
All	Retention school	9pp (5pp, 15pp)	8pp (1pp, 14pp)	9pp (2pp, 15pp)	9pp (1pp, 19pp)
Primary	Promotion	7pp (3pp, 10pp)	5pp (1pp, 9pp)	4pp (0pp, 8pp)	NA (CI > 100)
Primary	Retention teaching	12pp (7pp, 17pp)	12pp (5pp, 19pp)	13pp (6pp, 20pp)	12pp (3pp, 22pp)
Primary	Retention school	11pp (4pp, 18pp)	8pp (-2pp, 18pp)	10pp (1pp, 21pp)	6pp (-10pp, 20pp)
Secondary	Promotion	4pp (1pp, 8pp)	4pp (-1pp, 8pp)	4pp (-1pp, 8pp)	2pp (-4pp, 7pp)
Secondary	Retention teaching	9pp (5pp, 14pp)	10pp (4pp, 16pp)	9pp (3pp, 16pp)	12pp (4pp, 21pp)
Secondary	Retention school	8pp (1pp, 14pp)	7pp (-1pp, 16pp)	7pp (-1pp, 15pp)	13pp (1pp, 25pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

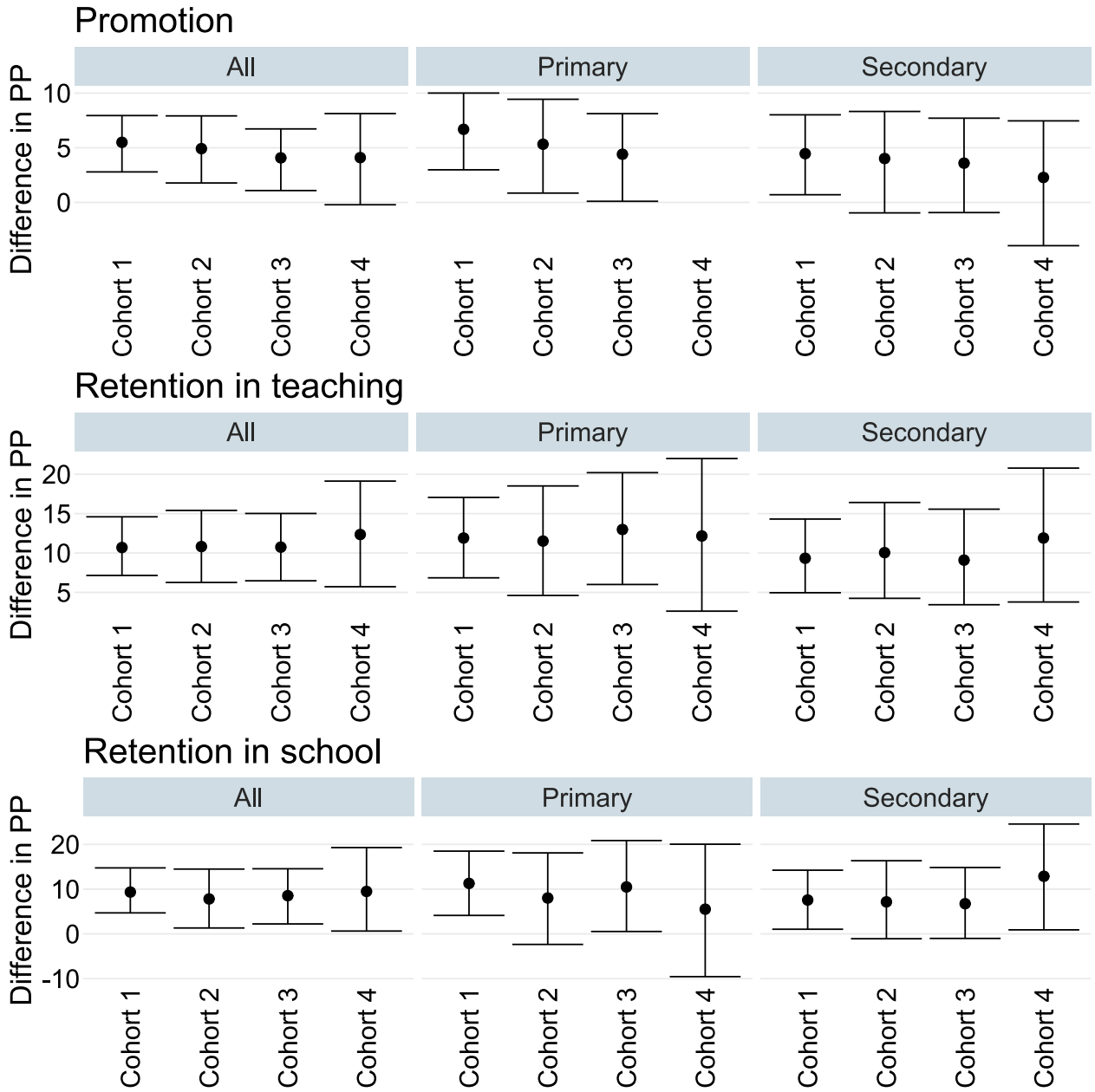
Figure 17: Estimated differences in outcomes for entrants and non-entrants, NPQLTD – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

Figure 18: Estimated differences in outcomes for entrants and non-entrants, NPQLTD – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

The difference for promotion was small, at around 2 to 3 percentage points. For retention in teaching, differences were around 7 to 8 percentage points one year after starting NPQLTD and around 11 to 12 percentage points two years after starting an NPQ. For retention in the same school, differences were around 4 to 8 percentage points one year after starting an NPQ and around 8 to 9 percentage points two years after starting an NPQ.

NPQLT

The table below shows the estimated impact of entering this NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Table 64: Estimated impact (odds ratios), NPQLT entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	1.51* (1.02, 2.29)	1.40 (0.91, 2.23)	1.42 (0.96, 2.16)	1.48 (0.61, 5.16)
All	Retention teaching	7.37* (4.96, 11.19)	5.27* (3.76, 7.79)	10.94* (7.57, 16.34)	5.60* (2.71, 13.78)
All	Retention school	1.53* (1.24, 1.84)	1.41* (1.13, 1.72)	1.99* (1.71, 2.35)	1.68* (1.11, 2.53)
Primary	Promotion	0.57 (0.21, 1.79)	0.93 (0.39, 3.03)	0.87 (0.38, 1.90)	1.00 (0.14, 11.72)
Primary	Retention teaching	6.10* (3.54, 11.99)	4.97* (2.90, 8.50)	11.96* (6.88, 24.24)	5.44* (2.28, 17.79)
Primary	Retention school	1.92* (1.38, 2.60)	1.65* (1.24, 2.26)	2.01* (1.56, 2.58)	1.70* (1.02, 2.91)
Secondary	Promotion	1.83* (1.17, 2.97)	1.60 (0.97, 2.72)	1.66* (1.10, 2.62)	1.99 (0.60, 17.57)
Secondary	Retention teaching	9.23* (5.15, 21.91)	5.62* (3.11, 10.75)	9.63* (6.05, 17.36)	NA (CI > 100)
Secondary	Retention school	1.24 (0.93, 1.61)	1.21 (0.87, 1.59)	1.90* (1.50, 2.39)	1.73 (0.82, 3.68)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)

* Statistically significant (alpha = 0.017)

Table 65: Estimated impact (odds ratios), NPQLT entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	1.99* (1.37, 3.08)	1.72* (1.15, 2.67)	1.99* (1.46, 2.85)	2.08* (1.02, 6.08)
All	Retention teaching	4.25* (3.25, 5.58)	4.42* (3.35, 5.78)	3.72* (3.03, 4.65)	7.31* (3.88, 14.85)

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Retention school	1.59* (1.35, 1.87)	1.69* (1.42, 2.01)	1.65* (1.43, 1.88)	2.15* (1.50, 3.17)
Primary	Promotion	1.46 (0.65, 3.29)	2.04 (0.97, 5.09)	2.30* (1.17, 5.27)	2.67 (0.73, 23.30)
Primary	Retention teaching	4.73* (3.13, 6.86)	5.22* (3.49, 7.96)	3.67* (2.68, 5.05)	7.19* (3.45, 19.99)
Primary	Retention school	1.93* (1.49, 2.45)	2.09* (1.63, 2.71)	1.68* (1.37, 2.07)	2.27* (1.38, 3.62)
Secondary	Promotion	2.15* (1.41, 3.76)	1.76* (1.11, 2.88)	1.89* (1.34, 2.88)	1.63 (0.56, 6.71)
Secondary	Retention teaching	3.78* (2.60, 5.54)	3.77* (2.52, 5.59)	3.63* (2.70, 4.75)	9.21* (3.25, 69.67)
Secondary	Retention school	1.29* (1.01, 1.63)	1.41* (1.10, 1.81)	1.56* (1.26, 1.86)	2.02* (1.08, 3.75)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Overall, these results showed a significant positive impact on all outcomes two years after starting an NPQ. The effect was strongest on retention in the state-funded teacher workforce and weakest on retention in the same school. However, the effect on promotion was not significant one year after starting an NPQ, with the exception of Cohort 1.

The effect on retention in the same school appeared to be stronger for primary phase entrants, particularly one year after starting an NPQ, where effects on secondary phase entrants were not significant for all but one cohort.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 66 and 67 present modelled estimates of the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Finally, Tables 68 and 69 and Figures 19 and 20 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

Table 66: Estimated outcomes for entrants and non-entrants, NPQLT – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	4%	3%	4%	3%	4%	3%	4%	2%
All	Retention teaching	99%	91%	98%	91%	99%	88%	98%	89%
All	Retention school	86%	80%	85%	80%	86%	76%	85%	78%
Primary	Promotion	1%	2%	1%	1%	1%	2%	2%	2%
Primary	Retention teaching	98%	90%	98%	91%	99%	89%	98%	89%
Primary	Retention school	88%	80%	87%	80%	86%	76%	86%	78%
Secondary	Promotion	8%	4%	6%	4%	6%	4%	7%	4%
Secondary	Retention teaching	99%	91%	98%	92%	99%	89%	NA (CI > 100)	NA (CI > 100)
Secondary	Retention school	83%	80%	84%	81%	85%	76%	86%	78%

Source: NPQ MI, GIAS and SWC data

Table 67: Estimated outcomes for entrants and non-entrants, NPQLT – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	6%	3%	5%	3%	8%	4%	7%	3%
All	Retention teaching	95%	83%	96%	83%	94%	81%	97%	82%
All	Retention school	76%	67%	78%	68%	74%	64%	81%	67%
Primary	Promotion	3%	2%	3%	2%	5%	2%	6%	2%
Primary	Retention teaching	96%	83%	96%	83%	94%	81%	97%	82%
Primary	Retention school	79%	67%	81%	67%	75%	64%	82%	67%
Secondary	Promotion	9%	4%	7%	4%	10%	5%	8%	5%
Secondary	Retention teaching	95%	83%	95%	84%	94%	82%	98%	83%
Secondary	Retention school	71%	66%	75%	68%	73%	63%	79%	66%

Source: NPQ MI, GIAS and SWC data

Table 68: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQLT – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	1pp (-1pp, 3pp)	1pp (-1pp, 3pp)	1pp (-1pp, 3pp)	1pp (-3pp, 5pp)
All	Retention teaching	8pp (6pp, 10pp)	7pp (5pp, 10pp)	10pp (8pp, 12pp)	9pp (3pp, 14pp)
All	Retention school	6pp (2pp, 9pp)	5pp (1pp, 9pp)	10pp (7pp, 14pp)	7pp (-1pp, 16pp)
Primary	Promotion	-1pp (-2pp, 1pp)	0pp (-2pp, 2pp)	0pp (-2pp, 1pp)	0pp (-4pp, 3pp)
Primary	Retention teaching	8pp (4pp, 11pp)	7pp (4pp, 11pp)	10pp (7pp, 13pp)	9pp (2pp, 15pp)
Primary	Retention school	8pp (2pp, 14pp)	7pp (1pp, 13pp)	10pp (5pp, 16pp)	8pp (-3pp, 18pp)
Secondary	Promotion	3pp (0pp, 6pp)	2pp (-1pp, 5pp)	2pp (0pp, 5pp)	3pp (-5pp, 11pp)
Secondary	Retention teaching	8pp (5pp, 11pp)	7pp (4pp, 10pp)	10pp (7pp, 13pp)	NA (CI > 100)
Secondary	Retention school	3pp (-2pp, 9pp)	2pp (-3pp, 8pp)	9pp (5pp, 14pp)	7pp (-6pp, 22pp)

Source: NPQ MI, GIAS and SWC data

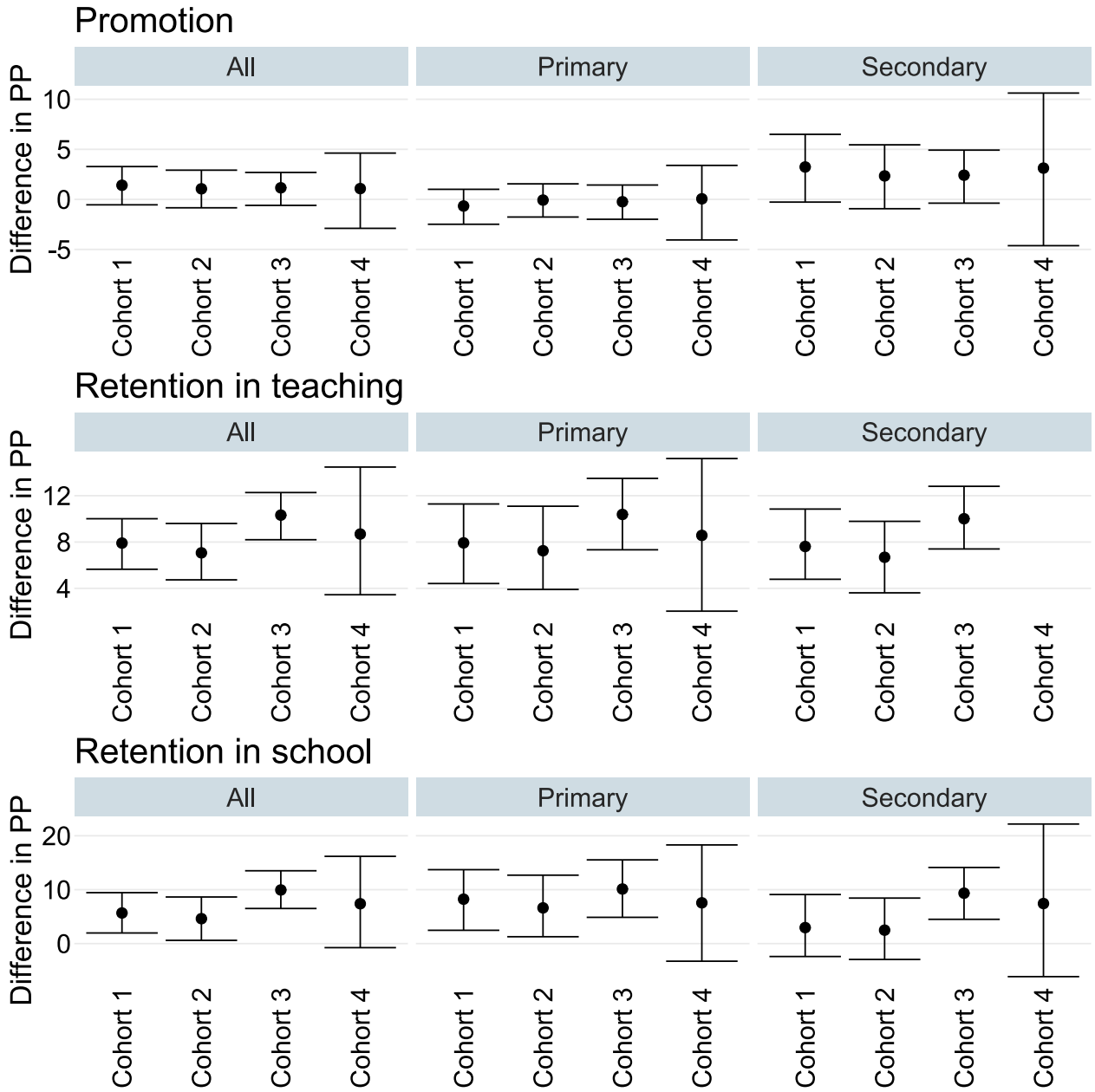
Table 69: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQLT – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	3pp (1pp, 5pp)	2pp (0pp, 4pp)	3pp (1pp, 5pp)	3pp (-1pp, 7pp)
All	Retention teaching	12pp (9pp, 16pp)	12pp (9pp, 16pp)	13pp (10pp, 16pp)	15pp (8pp, 21pp)
All	Retention school	9pp (4pp, 13pp)	10pp (5pp, 15pp)	10pp (6pp, 14pp)	14pp (4pp, 23pp)
Primary	Promotion	1pp (-2pp, 3pp)	2pp (-1pp, 4pp)	2pp (0pp, 4pp)	3pp (-2pp, 7pp)
Primary	Retention teaching	13pp (8pp, 18pp)	13pp (9pp, 18pp)	13pp (8pp, 17pp)	15pp (7pp, 23pp)
Primary	Retention school	12pp (6pp, 19pp)	14pp (7pp, 20pp)	11pp (4pp, 17pp)	15pp (2pp, 27pp)
Secondary	Promotion	5pp (1pp, 8pp)	3pp (-1pp, 6pp)	4pp (1pp, 7pp)	3pp (-6pp, 11pp)
Secondary	Retention teaching	12pp (7pp, 16pp)	11pp (6pp, 16pp)	13pp (9pp, 16pp)	15pp (5pp, 26pp)
Secondary	Retention school	5pp (-2pp, 12pp)	7pp (0pp, 14pp)	9pp (3pp, 15pp)	13pp (-3pp, 29pp)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

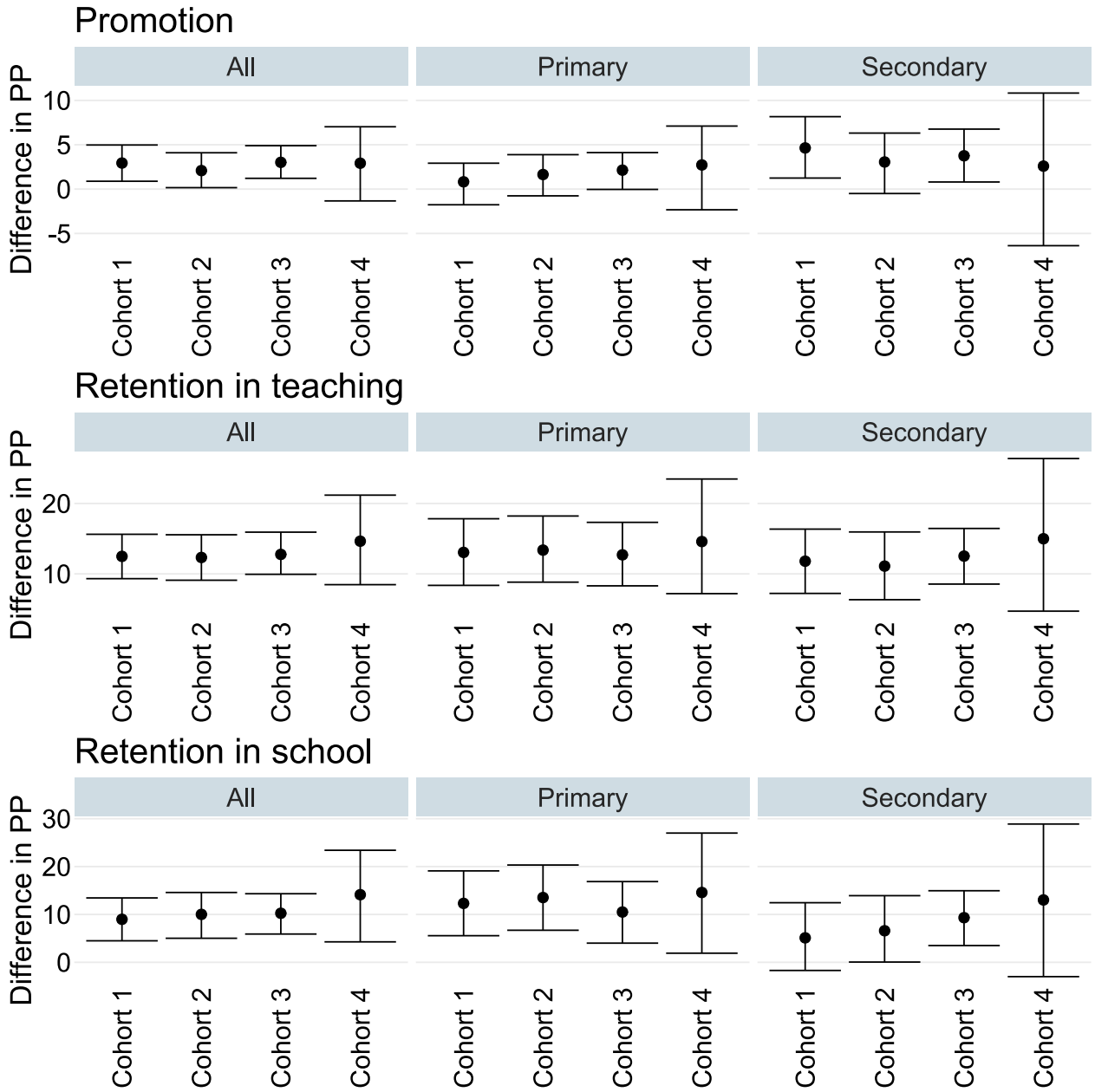
Figure 19: Estimated differences in outcomes for entrants and non-entrants, NPQLT – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

Figure 20: Estimated differences in outcomes for entrants and non-entrants, NPQLT – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

The difference for promotion was close to zero (around 1 percentage point) one year after starting NPQLT, rising to around 3 percentage points two years after starting an NPQ. For entrants in primary schools the difference was around zero, while for secondary schools it was slightly higher.

For retention in teaching, differences were around 7 to 10 percentage points one year after starting an NPQ and around 12 to 15 percentage points two years after starting NPQLT. For retention in the same school, differences were around 5 to 10 percentage

points one year after starting an NPQ and around 9 to 14 percentage points two years after starting an NPQ.

NPQLL

The table below shows the estimated impact of entering this NPQ on all outcomes, one and two years after starting an NPQ. Statistically significant estimates are marked with an asterisk, indicating that the result is unlikely to have occurred by chance (alpha = 0.017).

Note that this qualification was introduced later than other 2021 NPQs so there were no entrants in Cohorts 1 or 2.

Table 70: Estimated impact (odds ratios), NPQLL entrants – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	NA	NA	1.59 (0.85, 3.46)	2.11 (0.68, 8.75)
All	Retention teaching	NA	NA	5.79* (3.30, 11.89)	7.50* (3.23, 23.05)
All	Retention school	NA	NA	1.84* (1.36, 2.58)	1.55 (0.98, 2.48)
Primary	Promotion	NA	NA	1.79 (0.63, 9.02)	1.94 (0.66, 11.07)
Primary	Retention teaching	NA	NA	9.72* (4.12, 32.91)	8.88* (3.62, 32.53)
Primary	Retention school	NA	NA	2.06* (1.29, 3.21)	1.53 (0.99, 2.36)
Secondary	Promotion	NA	NA	1.36 (0.57, 4.24)	NA (CI > 100)
Secondary	Retention teaching	NA	NA	3.91* (1.88, 9.63)	NA (CI > 100)
Secondary	Retention school	NA	NA	1.64* (1.04, 2.66)	NA (CI > 100)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Table 71: Estimated impact (odds ratios), NPQLL entrants – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	NA	NA	1.61 (0.85, 3.81)	1.97 (0.64, 10.23)
All	Retention teaching	NA	NA	3.28* (2.25, 5.00)	6.14* (3.39, 13.1)
All	Retention school	NA	NA	1.72* (1.31, 2.27)	1.85* (1.26, 2.64)
Primary	Promotion	NA	NA	2.12 (0.75, 10.33)	1.98 (0.6, 10.11)
Primary	Retention teaching	NA	NA	4.86* (2.80, 9.02)	6.42* (3.50, 12.91)
Primary	Retention school	NA	NA	1.97* (1.29, 2.81)	1.77* (1.22, 2.54)
Secondary	Promotion	NA	NA	1.37 (0.57, 3.74)	NA (CI > 100)
Secondary	Retention teaching	NA	NA	2.32* (1.32, 4.01)	NA (CI > 100)
Secondary	Retention school	NA	NA	1.49* (1.01, 2.20)	NA (CI > 100)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

A similar pattern was seen as for other NPQs: strong significant effects on retention in teaching, weaker but significant effects on retention in the same school, and point estimates for promotion that were between the two, but for which the confidence intervals were wider and estimates not always significant.

It is difficult to draw firm conclusions by phase for this qualification, as several estimates, particularly for secondary entrants, could not be shown owing to very wide confidence intervals. Where estimates were available, they suggested a stronger impact for primary than for secondary entrants.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 72 and 73 present modelled estimates of the percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Finally, Tables 74 and 75 and Figures 21 and 22 show the estimated difference in percentage points between NPQ entrants and their matched comparators, with confidence intervals.

Table 72: Estimated outcomes for entrants and non-entrants, NPQLL – one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	NA	NA	NA	NA	4%	3%	3%	2%
All	Retention teaching	NA	NA	NA	NA	98%	89%	98%	90%
All	Retention school	NA	NA	NA	NA	87%	78%	86%	80%
Primary	Promotion	NA	NA	NA	NA	3%	2%	3%	2%
Primary	Retention teaching	NA	NA	NA	NA	99%	90%	99%	90%
Primary	Retention school	NA	NA	NA	NA	89%	80%	86%	80%
Secondary	Promotion	NA	NA	NA	NA	5%	4%	NA (CI > 100)	NA (CI > 100)
Secondary	Retention teaching	NA	NA	NA	NA	97%	89%	NA (CI > 100)	NA (CI > 100)
Secondary	Retention school	NA	NA	NA	NA	84%	77%	NA (CI > 100)	NA (CI > 100)

Source: NPQ MI, GIAS and SWC data

Table 73: Estimated outcomes for entrants and non-entrants, NPQLL – two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Promotion	NA	NA	NA	NA	5%	3%	3%	2%
All	Retention teaching	NA	NA	NA	NA	94%	82%	97%	82%
All	Retention school	NA	NA	NA	NA	77%	67%	80%	69%
Primary	Promotion	NA	NA	NA	NA	4%	2%	3%	2%
Primary	Retention teaching	NA	NA	NA	NA	96%	83%	97%	83%
Primary	Retention school	NA	NA	NA	NA	81%	69%	80%	69%
Secondary	Promotion	NA	NA	NA	NA	6%	4%	NA (CI > 100)	NA (CI > 100)
Secondary	Retention teaching	NA	NA	NA	NA	91%	82%	NA (CI > 100)	NA (CI > 100)
Secondary	Retention school	NA	NA	NA	NA	73%	65%	NA (CI > 100)	NA (CI > 100)

Source: NPQ MI, GIAS and SWC data

Table 74: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQLL – one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	NA	NA	2pp (-1pp, 4pp)	2pp (-2pp, 5pp)
All	Retention teaching	NA	NA	9pp (4pp, 13pp)	9pp (4pp, 14pp)
All	Retention school	NA	NA	8pp (2pp, 15pp)	6pp (-3pp, 14pp)
Primary	Promotion	NA	NA	1pp (-2pp, 5pp)	2pp (-2pp, 5pp)
Primary	Retention teaching	NA	NA	9pp (4pp, 15pp)	9pp (4pp, 14pp)
Primary	Retention school	NA	NA	9pp (1pp, 19pp)	6pp (-3pp, 14pp)
Secondary	Promotion	NA	NA	1pp (-4pp, 6pp)	NA (CI > 100)
Secondary	Retention teaching	NA	NA	8pp (1pp, 15pp)	NA (CI > 100)
Secondary	Retention school	NA	NA	7pp (-3pp, 16pp)	NA (CI > 100)

Source: NPQ MI, GIAS and SWC data

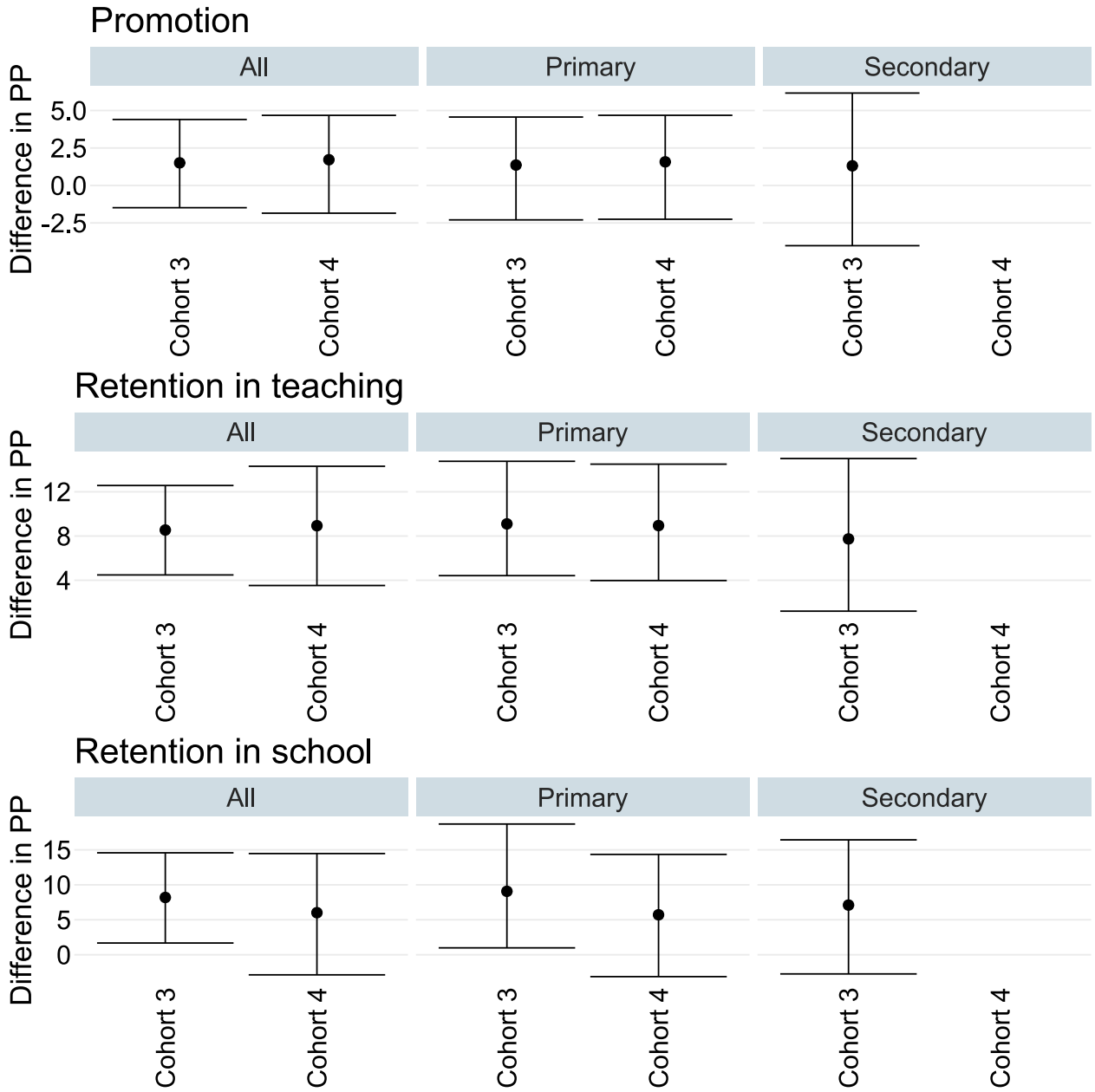
Table 75: Estimated difference in outcomes (percentage points) for entrants and non-entrants, NPQLL – two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Promotion	NA	NA	2pp (-2pp, 5pp)	2pp (-2pp, 5pp)
All	Retention teaching	NA	NA	11pp (6pp, 17pp)	14pp (8pp, 21pp)
All	Retention school	NA	NA	10pp (3pp, 18pp)	11pp (1pp, 21pp)
Primary	Promotion	NA	NA	2pp (-2pp, 5pp)	2pp (-2pp, 5pp)
Primary	Retention teaching	NA	NA	13pp (6pp, 20pp)	14pp (8pp, 21pp)
Primary	Retention school	NA	NA	12pp (2pp, 22pp)	10pp (0pp, 20pp)
Secondary	Promotion	NA	NA	1pp (-4pp, 6pp)	NA (CI > 100)
Secondary	Retention teaching	NA	NA	9pp (0pp, 18pp)	NA (CI > 100)
Secondary	Retention school	NA	NA	8pp (-4pp, 20pp)	NA (CI > 100)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: median difference in percentage points (lower confidence interval, upper confidence interval)

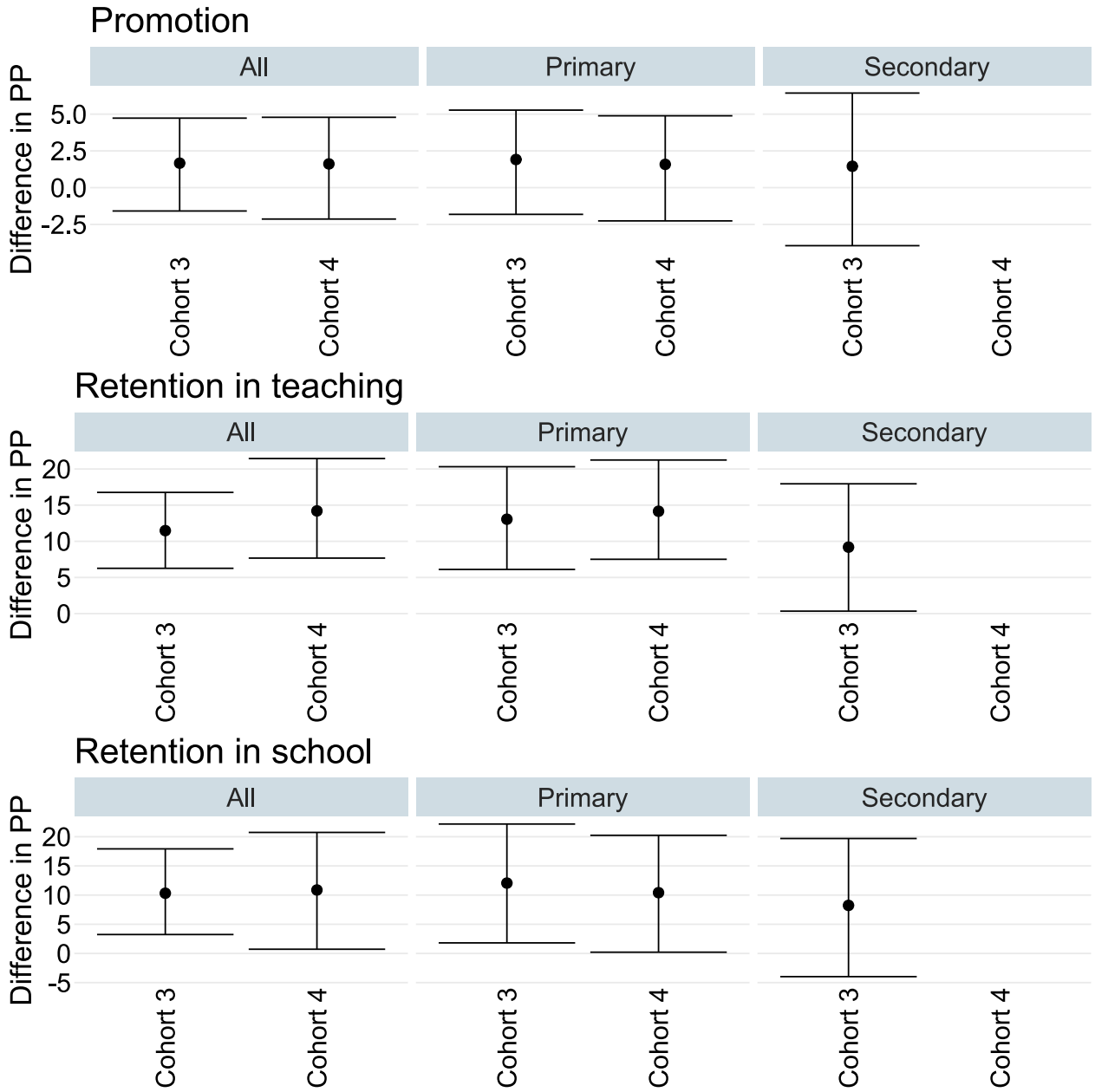
Figure 21: Estimated differences in outcomes for entrants and non-entrants, NPQLL – one year after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

Figure 22: Estimated differences in outcomes for entrants and non-entrants, NPQLL – two years after starting an NPQ



Source: NPQ MI, GIAS and SWC data

Note that estimated differences are omitted from charts where the estimated confidence intervals in odds ratios contain figures >100

The difference for promotion was around 2 percentage points. For retention in teaching, differences were around 9 percentage points one year after starting NPQLL and around 11 to 14 percentage points two years after starting an NPQ.

For retention in the same school, differences were around 6 to 8 percentage points one year after starting an NPQ and around 10 to 11 percentage points two years after starting NPQLL, though some estimates - particularly for secondary schools – included very wide confidence intervals.

4. School level outcomes

4.1 Methodology

The methodology for this impact evaluation was determined based on an unpublished feasibility study completed by the report authors in January 2026.

The usual approach for an evaluation at school level would be similar to that used for the evaluation of teacher level outcomes: that is, creating a comparison group of schools which are similar to schools with NPQ entrants, then comparing the outcomes using regression models.

However, in this case, a very substantial proportion of schools had NPQ entrants, especially secondary schools. This posed problems with creating a suitable comparison group; the pool of schools for matching would be very small. A different approach was therefore taken, based around ‘dosage’, that is, the proportion of teachers in a school who entered an NPQ. The outcomes of high dosage schools were compared (those in which a high proportion of teachers entered an NPQ) to the outcomes of low dosage schools (those in which a low proportion of teachers entered an NPQ).

High and low dosage were defined for each cohort separately. As a first step, schools with fewer than 10 teachers were removed from the evaluation. This avoided extreme dosage values from schools with a small number of teachers.

Several approaches for creating high and low dosage groups were considered. A statistical measure of dosage would be the percentage of teachers entered for an NPQ. Schools could then be split into groups based on their position along the distribution of this measure; for example, the lowest tercile could form the low dosage group and the highest tercile the high dosage group. However, this approach was complicated by the fact that the distribution of this measure was very much skewed towards the lower end.

A more complex approach was therefore taken, intended to balance the need to separate the high and low dosage groups, the need to maintain a reasonable sample size, and the need to have a reasonable ratio of high dosage to low dosage schools. Schools were grouped so as to meet the following criteria:

- The low dosage group includes schools in which the percentage of teachers entered for NPQs was below the median for the relevant phase, and the high dosage group above the median
- The percentage of teachers entered for NPQs was at least twice as high in the high dosage group as in the low dosage group
- The low dosage group contained at least 1.5 times more schools than the high dosage group, to ensure there were reasonable numbers for matching purposes

- Where there are several options that meet the above criteria, the option with the highest number of high dosage schools was selected

The resulting dosage boundaries are shown in the table below. Note that these were not consistent across cohorts, which will make direct cross-cohort comparisons difficult.

Table 76: Dosage boundaries by cohort and phase

Cohort	Phase	Low	Medium	High
Cohort 1	Primary	<=7%	>7% and <15%	>=15%
	Secondary	<=4%	>4% and <8%	>=8%
	Special	<=7%	>7% and <14%	>=14%
	AP	<=7%	>7% and <14%	>=14%
	TOTAL	<=6%	>6% and <12%	>=12%
Cohort 2	Primary	<=7%	>7% and <15%	>=15%
	Secondary	<=3%	>3% and <6%	>=6%
	Special	<=6%	>6% and <12%	>=12%
	AP	<=7%	>7% and <14%	>=14%
	TOTAL	<=5%	>5% and <10%	>=10%
Cohort 3	Primary	<=8%	>8% and <17%	>=17%
	Secondary	<=4%	>4% and <8%	>=8%
	Special	<=8%	>8% and <16%	>=16%
	AP	<=8%	>8% and <17%	>=17%
	TOTAL	<=8%	>8% and <16%	>=16%
Cohort 4	Primary	<=7%	>7% and <15%	>=15%
	Secondary	<=2%	>2% and <5%	>=5%
	Special	<=6%	>6% and <13%	>=13%
	AP	<=7%	>7% and <15%	>=15%
	TOTAL	<=5%	>5% and <10%	>=10%

Source: NPQ MI and GIAS data

As for the teacher level evaluation, results are presented both for all schools, and results broken down by phase. For results broken down by phase, phases were matched and modelled separately. However, due to small numbers, special schools and AP centres were excluded from breakdowns by phase.

4.2 Limitations

4.2.1 Definition of high and low dosage

For the school level evaluation, there were considerable difficulties in creating a suitable comparison group because of the small number of schools with no entrants to NPQs. Rather than comparing the effect of entrants to non-entrants, the alternative method is therefore used of comparing the impact of low and high dosage schools. This approach relies on defining high and low dosage. If these groups are not well-defined and clearly distinct from one another, the results will not be meaningful. This was mitigated as far as possible by requiring, among other criteria, that the percentage of teachers entered for NPQs was at least twice as high in the high dosage schools as in the low dosage schools, and that the low dosage group contained at least 1.5 times more schools than the high dosage group.

As dosage groups were defined separately for each cohort, direct comparison between cohorts should be approached with caution, and there may be issues with following a similar approach in future evaluations if, for example, the distribution of entrants across schools changes.

4.2.2 Timeframe of evaluation

The timeframe of this evaluation is relatively short, looking at outcomes one and two years after starting an NPQ. It is therefore not possible to capture longer-term impact. This is perhaps particularly relevant for the school level evaluation: while school level attainment was of particular interest, it was not selected as the outcome for evaluation. This is for two reasons related to timeframe.

Firstly, data on historic school level attainment from 2020 or 2021 is not available due to the cancellation of public exams during the pandemic. This means it would not be possible to match schools based on historical values for attainment within parts of the analytical timeframe.

Secondly, as NPQs are qualifications for teachers rather than direct interventions aimed at pupils, impact on attainment might also be expected to be observed over a long period, which may not be captured robustly within the time series or cohorts available for the evaluation at this stage.

Future evaluations could look at longer term impact and, if doing so, could consider including additional outcomes at the school level.

4.3 Descriptive statistics

4.3.1 Overview

The table below shows the number of schools in which at least one staff member entered an NPQ, broken down by school phase.

Table 77: Number of schools with NPQ entrants, Cohorts 1 to 4

Cohort	Phase	Schools with entrants (n)	Schools with entrants (%)
Cohort 1 (autumn 21)	Primary	4,178	25%
	Secondary	2,257	67%
	Special	440	44%
	AP	124	41%
	TOTAL	6,999	33%
Cohort 2 (spring 21)	Primary	3,866	23%
	Secondary	2,145	63%
	Special	361	35%
	AP	95	30%
	TOTAL	6,467	30%
Cohort 3 (autumn 22)	Primary	6,407	38%
	Secondary	2,607	77%
	Special	534	52%
	AP	133	42%
	TOTAL	9,681	45%
Cohort 4 (spring 22)	Primary	3,849	23%
	Secondary	1,944	58%
	Special	306	30%
	AP	65	21%
	TOTAL	6,164	29%

Source: NPQ MI and GIAS data

Roughly a third of state-funded schools in England had at least one teacher entered for an NPQ in Cohort 1. This was lower for primary schools (25%), and higher for special (44%), AP (41%) and especially secondary schools (67%).

Some more detailed descriptive statistics are considered next. To do so, a small number of schools for whom relevant data is unavailable were removed. This included newly opened schools, which will not have any information on historical values of the outcomes, as well as those for which data on any of the other matching variables, or the outcome, is missing for any reason. This included schools that closed before the point of evaluation.

4.3.2 School characteristics

This section shows how school characteristics varied by NPQ participation. The tables included in the main body of the report focus on Cohort 1; for full descriptive statistics on all four cohorts, see the appendix spreadsheet.

Tables in this section show figures for all schools, all schools with Cohort 1 entrants, and schools by dosage group.

Table 78: School characteristics, schools with Cohort 1 entrants vs all schools

Characteristic	Level	Low dose	Med dose	High dose	All Cohort 1	All schools
Region	East Midlands	8%	10%	7%	9%	9%
	East of England	12%	10%	10%	11%	12%
	London	18%	15%	17%	15%	12%
	North East	5%	6%	8%	6%	5%
	North West	13%	16%	20%	16%	15%
	South East	17%	14%	11%	15%	15%
	South West	9%	9%	7%	9%	11%
	West Midlands	10%	11%	13%	11%	11%
	Yorkshire and The Humber	9%	9%	7%	9%	10%
Average no. pupils		579	451	441	467	325
Average % EAL pupils		21%	20%	21%	19%	16%
Average % FSM6 pupils		20%	22%	25%	22%	19%
Average % staff retained in school		87%	86%	85%	86%	87%
Average % teachers promoted		4%	4%	4%	4%	3%

Source: NPQ MI, GIAS and SWC data

There were no striking regional differences, although schools in London made up a slightly higher than expected proportion of those with NPQ entrants. Schools with NPQ entrants were larger than all schools, on average, although this was probably because of the higher proportion of secondary schools, which tend to be larger. They had slightly higher percentages of both disadvantaged pupils and pupils with EAL than all schools, and similar levels of staff retention and promotions.

Schools in London and the North West were somewhat more likely to fall into the high dosage group than those in other regions.

Although the detailed figures shown here relate specifically to Cohort 1, all of those findings hold true across all four cohorts.

4.3.3 Historical attainment

The table below shows breakdowns by historic values of Ofsted ratings and attainment and progress data by group.

Table 79: Historical attainment, schools with Cohort 1 entrants vs all schools

Characteristic	Level	Low dose	Med dose	High dose	All Cohort 1	All schools
Ofsted rating (overall)	Outstanding	23%	22%	18%	21%	19%
	Good	64%	64%	63%	65%	68%
	Requires improvement	10%	10%	12%	10%	9%
	Inadequate	3%	4%	5%	4%	3%
	None recorded	0%	0%	1%	0%	0%
Ofsted rating (leadership and management)	Outstanding	28%	26%	23%	25%	23%
	Good	61%	62%	61%	62%	66%
	Requires improvement	8%	8%	10%	9%	8%
	Inadequate	3%	4%	5%	3%	3%
	None recorded	0%	0%	1%	0%	0%
Average P8, 2019	Mainstream	0.04	-0.03	-0.07	0.00	-0.01
Average P8, 2019	Special	-1.67	-1.93	-1.83	-1.79	-1.83
Average % of pupils achieving expected KS2 standard, 2019	Mainstream	65%	65%	64%	64%	66%
Average % of pupils achieving expected KS2 standard, 2019	Special	0%	1%	1%	0%	1%

Source: NPQ MI and publicly available school level data

Schools with NPQ entrants were slightly more likely to have both an outstanding Ofsted rating and a less than good Ofsted rating than schools overall. Attainment was similar at both KS2 and KS4 to schools overall, although Progress 8 was lower than average in

medium and high dose schools. Again, although the detailed figures shown in the table above relate specifically to Cohort 1, this holds true across all four cohorts.

4.3.4 Raw differences in outcome

This section shows the outcome, retention rate in the same school, for schools with Cohort 1 entrants and for all schools, broken down by school phase. These include primary, secondary, special and AP; regression results for special and AP schools are omitted from the breakdowns shown in the results section due to relatively small sample sizes.

Table 80: Raw differences in retention rates within the same school – one year after starting an NPQ

Phase	Low dose	Med dose	High dose	All Cohort 1	All schools
All	85%	84%	84%	84%	84%
Primary	85%	84%	84%	84%	84%
Secondary	85%	84%	84%	85%	85%
Special	86%	84%	84%	85%	83%
AP	82%	83%	76%	80%	80%

Source: NPQ MI and publicly available school level data

Table 81: Raw differences in retention rates within the same school – two years after starting an NPQ

Phase	Low dose	Med dose	High dose	All Cohort 1	All schools
All	92%	91%	89%	91%	91%
Primary	91%	91%	90%	91%	91%
Secondary	91%	91%	87%	90%	90%
Special	95%	94%	91%	94%	93%
AP	89%	90%	94%	90%	89%

Source: NPQ MI and publicly available school level data

Schools with Cohort 1 entrants had very similar levels of retention to all schools, although schools in the low dosage group tended to have slightly higher levels of retention than those in the high dosage group.

4.4 Matching

As described above, 1:1 nearest neighbour matching was used based on propensity scores to match schools in the high dosage groups to those in the low dosage groups.

The matches were assessed based on standardised mean difference (SMD), and a good match was considered to be one in which the SMD is within the (-0.2, 0.2) range for every matching variable.

In almost every case, it was possible to create very good matches, with the balance well within the 0.2 threshold. The exceptions were Cohort 2, in which 95% of variables were matched to within the threshold, and Cohort 4, in which 80% were matched to within the threshold. However, these are considered satisfactory, especially as primary and secondary schools were very well matched for both cohorts.

Table 82: Percentage of matching variables matched to within 0.2 threshold

Phase	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	100%	95%	100%	80%
Primary	100%	100%	100%	100%
Secondary	100%	100%	100%	100%

Source: NPQ MI and GIAS data

A sensitivity analysis was also completed using a different matching method for Cohort 1 entrants (weighting based on covariate balancing propensity scores). The results are included as appendix 6.1.2. They did not suggest that the results were overly sensitive to the method used. That is, similar results would be expected regardless of the matching method.

4.5 Results

Regression models were fitted to the matched data, controlling again for selected variables (number of pupils, % EAL and FSM, historical levels of retention). Bootstrapping was used to create confidence intervals that take into account both the uncertainty from the matching process and the uncertainty from the modelling process.

Results are now presented for one and two years after Cohort 1 entry. A point estimate and a 95% upper and lower confidence interval are included. These results show the estimated difference in percentage points between the low and high dosage groups.

Table 83: Estimated impact of high dosage vs low dosage, percentage of teachers retained in the same school

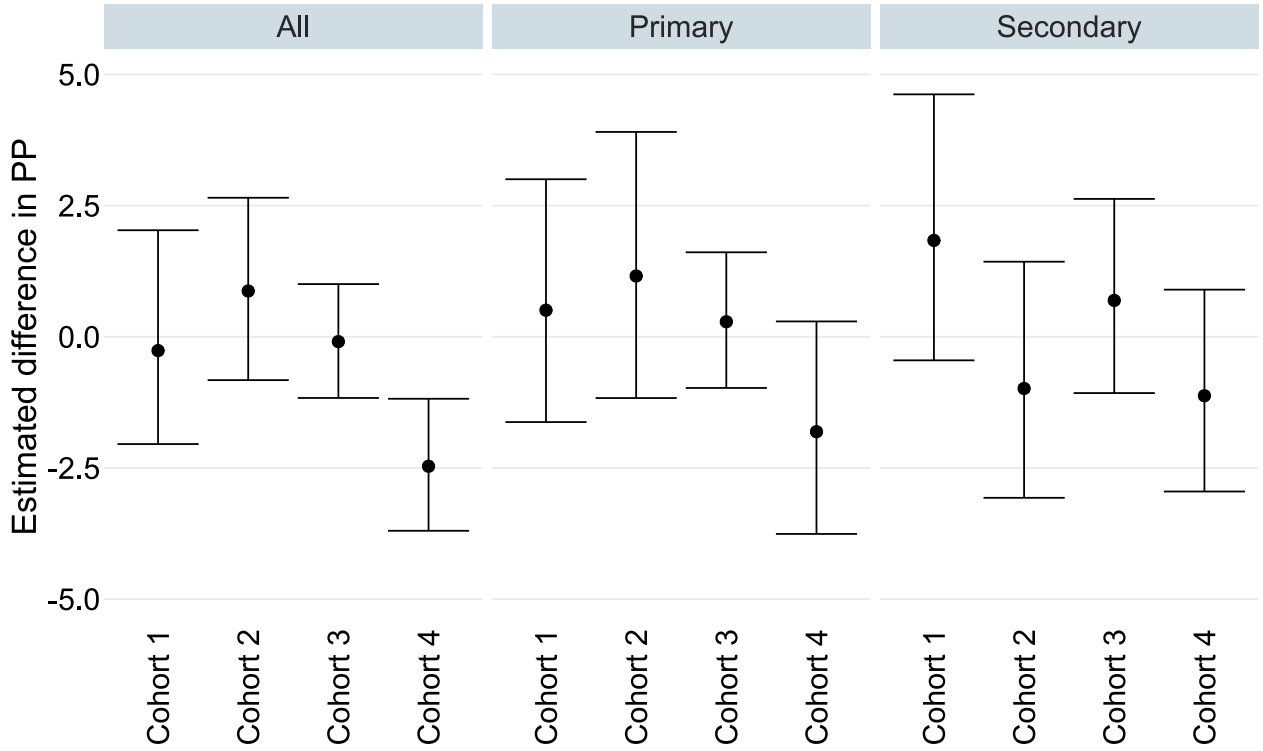
Year	Phase	Cohort 1	Cohort 2	Cohort 3	Cohort 4
One year after	All	-0.26 (-2.04, 2.03)	0.87 (-0.83, 2.65)	-0.09 (-1.17, 1.00)	-2.47* (-3.70, -1.18)
One year after	Primary	0.51 (-1.63, 3.00)	1.16 (-1.17, 3.90)	0.29 (-0.98, 1.61)	-1.81 (-3.76, 0.29)
One year after	Secondary	1.84 (-0.45, 4.62)	-0.99 (-3.07, 1.43)	0.69 (-1.07, 2.63)	-1.12 (-2.95, 0.90)
Two years after	All	-1.81* (-2.88, -0.57)	-0.83 (-2.05, 0.56)	-1.03 (-2.80, 0.65)	-1.75* (-3.18, -0.15)
Two years after	Primary	-0.51 (-2.14, 0.97)	1.83 (-0.05, 4.01)	-0.97 (-2.82, 1.20)	-0.44 (-2.98, 2.61)
Two years after	Secondary	-1.93 (-3.98, 0.37)	-0.81 (-2.77, 1.69)	-0.89 (-3.05, 1.72)	-0.13 (-2.68, 2.67)

Source: NPQ MI and publicly available school level data
Results are shown in the form: estimated impact (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

These results did not provide evidence for a stronger impact on high dosage schools compared to low dosage schools. Most of the results were not significant – the confidence intervals all contained zero – and the point estimates were all very close to zero, at under two and a half percentage points.

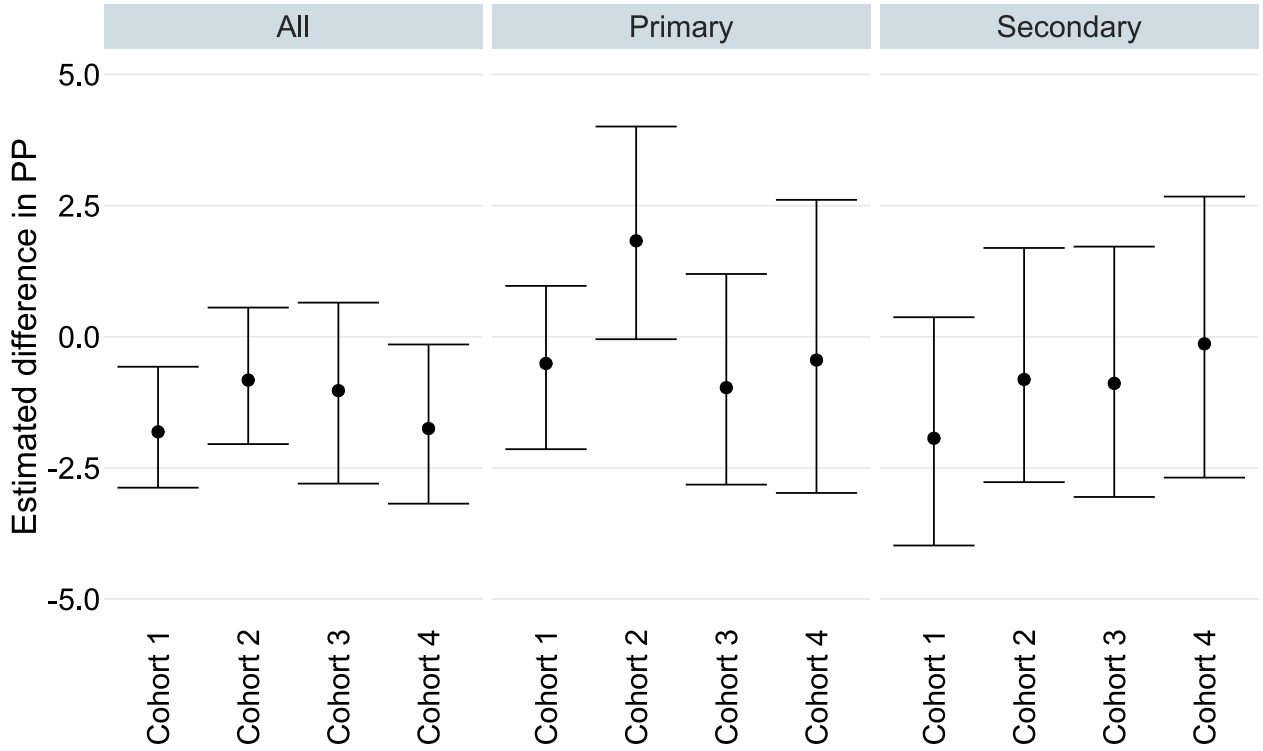
Finally, charts of the estimates are presented, with confidence intervals.

Figure 23: Estimated impact of high dosage vs low dosage, percentage of teachers retained in the same school – one year after starting an NPQ



Source: NPQ MI and publicly available school level data

Figure 24: Estimated impact of high dosage vs low dosage, percentage of teachers retained in the same school – two years after starting an NPQ



Source: NPQ MI and publicly available school level data

5. Conclusions

5.1 Findings

5.1.1 Teacher level outcomes

5.1.1.1 Overall findings

Across all four cohorts, the teacher level evaluation found evidence of a positive impact on all three outcomes, both one and two years after starting the qualifications. The impact on these outcomes is reported as odds ratios in the main body of the report, but to get a sense of how they translate into actual differences in outcomes, this report also presents modelled estimates of the median percentage of teachers who would be promoted or retained if they were either all NPQ entrants, or all non-entrants. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Retention in the state-funded teacher workforce was the most strongly impacted of the three outcomes, with odds ratios ranging from 3.74 to 4.37 two years after starting an NPQ, followed by promotion (odds ratios from 2.78-3.19), with a relatively low impact on retention in the same school (odds ratios from 1.42-1.49).

The estimated percentage of teachers retained in the state-funded teacher workforce one year after starting an NPQ was 7 to 9 percentage points higher for NPQ entrants than non-entrants, and 11 to 13 percentage points higher two years after starting. The difference in the estimated percentage receiving a promotion one year after starting an NPQ was 5 to 6 percentage points higher for NPQ entrants than non-entrants, and 6 to 7 percentage points higher two years after starting. For the estimated percentage remaining in the same school, the difference was 3 to 7 percentage points higher one year after starting an NPQ and 7 to 8 two years after starting an NPQ.

5.1.1.2 Differences by qualification type

When breaking results down by qualification type, significant positive effects were found on all three outcomes for both Leadership and Specialist NPQs. The effects on promotions were higher for Leadership NPQs than for Specialist, with odds ratios from 3.43 to 4.29 for Leadership NPQs two years after starting an NPQ and from 1.95 to 2.37 for Specialist. The effects on retention in the state-funded teacher workforce were similar (3.87-4.61 vs 3.41-4.58), while the effects on retention in the same school were lower for Leadership NPQs (1.25-1.39 vs 1.63-1.66).

This translated into a difference of 8 to 11 percentage points in promotion for Leadership qualifications compared to 3 to 4 for Specialist, 11 to 13 percentage points in retention in the state-funded teacher workforce for Leadership compared to 12 to 14 for Specialist,

and 4 to 7 in retention in the same school for Leadership compared to 9 to 10 for Specialist.

When broken down by qualification, results broadly reflected the breakdowns by type: NPQH and NPQSL tended to have higher estimated effects on promotion than the individual Specialist NPQs.

There were, however, some exceptions. No positive effect on promotion was found for NPQEL, and no consistent evidence of a significant positive effect was found on retention in the same school for NPQH. Unlike most other qualifications, the point estimates for promotion for the NPQEYL were lower than for the other outcomes one year after starting an NPQ, although the pattern for two years after was consistent with other qualifications. This inconsistency may perhaps reflect the relatively low numbers entering the qualification, or the fact that, unlike NPQs in general, entrants are almost exclusively based in the primary sector.

For NPQLTD, the effect on promotion varied: there was a significant positive effect two years after starting an NPQ, but one year after starting an NPQ results were mixed. Overall, the effect was significant for Cohorts 1, 3 and 4, but not for Cohort 2, and when broken down by phase estimates were significant only for Cohort 1. For NPQLT, no consistent positive effect on promotion was found one year after starting an NPQ, although the effect was significant two years after starting an NPQ.

5.1.1.3 Differences by phase

When looking at results overall and for Leadership and Specialist qualifications results were broken down into three phases: primary, secondary and special schools.[11] Due to sample size issues, this was not possible when looking at individual qualifications, and here results were broken down into primary and secondary only.

When looking across all NPQs, a broadly similar pattern was seen when breaking results down by phase: a significant positive impact on all three outcomes, with the strongest impact on retention in the state-funded teacher workforce, then promotion, and the weakest impact on retention in the same school.

The programme's effect on promotion varied by phase, with the strongest impacts observed in special schools and the weakest in secondary schools. However, the estimated impact for special schools had very wide confidence intervals indicating issues with sample size. Two years after starting an NPQ, the difference in estimated percentages for Cohort 4 entrants was 9 in special schools, 6 in primary schools and 5 in secondary schools. The same pattern held for retention in the state-funded teacher workforce: the difference in estimated percentages for Cohort 4 entrants two years after

[11] Due to sample size issues, breakdowns for AP centres were not included in this evaluation.

starting an NPQ was 15 in the special phase, 14 in the primary phase and 12 in the secondary phase.

For retention in the same school, the picture was mixed. While point estimates for the special phase tended to be higher, the estimated impact for Cohort 2 was insignificant. For some cohorts, the impact on primary was higher than on secondary, and for some vice versa. For Cohort 4, the difference in estimated percentages two years after starting an NPQ was 13 in the special phase, 7 in the primary phase and 8 in the secondary phase.

When looking at breakdowns by phase and qualification, a similar pattern was generally seen, with some exceptions. For NPQLBC, the impact on promotion and retention in the same school was not significant in the primary phase for most cohorts, although overall and for the secondary phase they were, suggesting that the impact on these outcomes may be driven more by secondary phase entrants. For NPQLT, the effect on retention in the same school appeared to be stronger for primary phase entrants, particularly one year after starting an NPQ, where effects on secondary phase entrants were not significant for all but one cohort.

5.1.1.4 Differences by cohort

While the patterns described above were broadly consistent across all four cohorts, the effects on both retention in the state-funded teacher workforce and retention in the same school one year after starting an NPQ tended to be stronger for Cohorts 1 and 3: the cohorts that started their qualifications in autumn as opposed to spring. These differences translated into relatively small differences in estimated percentages between NPQ entrants and non-entrants: for teachers retained in the state-funded teacher workforce, the differences one year after starting an NPQ, for Cohorts 1 and 3 were 7 and 9 percentage points, compared to 7 and 8 for Cohorts 2 and 4. For teachers retained in the same school, the differences for Cohorts 1 and 3 were 5 and 7 percentage points, compared to 3 and 3 for Cohorts 2 and 4.

However, the effects for two years after starting an NPQ were more similar across all four cohorts: for teachers retained in the state-funded teacher workforce, differences in estimated percentages two years after starting an NPQ, for Cohorts 1 and 3 were 11 and 12, compared to 12 and 13 for Cohorts 2 and 4. For teachers retained in the same school, the differences for Cohorts 1 and 3 were 8 and 8 percentage points, compared to 7 and 7 for Cohorts 2 and 4.

These differences by cohort may simply reflect the fact that spring entrants started their qualifications later, so there was less time for the impact to take effect.

5.1.2 School level outcomes

In the school level evaluation, no clear evidence was found of an impact on teacher retention in the same school for high dosage schools compared to low dosage schools for schools with NPQ entrants. All estimates were inconclusive or negative; that is, none were both statistically significant and positive. This applies to all breakdowns by phase and to all four cohorts.

6. Appendices

See also the accompanying spreadsheet ‘Appendix – descriptive statistics.xlsx’.

6.1 Sensitivity analysis

To test whether the results are sensitive to the matching method used, sensitivity analyses were carried out for both the teacher level and school level evaluations of Cohort 1. These involved repeating the evaluation using a different matching method to create the comparison group, then comparing the results to those obtained in the main evaluation. Any large differences would be cause for concern.

Both the teacher and school level sensitivity analyses produced results similar to those in the main analysis when looking at all NPQs and all schools. This indicated that the results were not overly sensitive to the matching method used. That is, similar results would be expected regardless of the matching method. However, there were some differences in the breakdowns by school phase, particularly in the breakdowns by phase and qualification, and for special schools.

6.1.1 Teacher level

Here the evaluation was repeated using a method known as coarsened exact matching (CEM). This method exactly matches treated units on all factor levels. It splits continuous matching variables into groups – here each was split into three groups – then matches each treated unit to a comparison unit in the same group. Any treated or comparison units with no exact matches available are discarded.

CEM therefore generally results in a reduced sample size compared to methods that do not discard any units. The reduced sample size can mean a reduction in power, which may result in wider confidence intervals. If the teachers that are discarded include a disproportionate number with certain characteristics, the characteristics of the sample may also change compared to the full sample. Here, less than 5% of teachers were discarded when matching across all qualifications. When matching across Leadership and Specialist qualifications again less than 5% were discarded, with the exception of those based in the special phase, in which around 10% were discarded.

The estimated effects obtained from CEM matching are shown below, with the estimated effects from the main body of the report for comparison. In most cases, point estimates and ranges were similar.

Table 84: Teacher level sensitivity analysis, all qualifications

Year	Phase	Outcome	PS LCI	PS Est	PS UCI	CEM LCI	CEM Est	CEM UCI
One year after	All	Promotion	2.29	2.74*	3.28	3.30	3.55*	3.84
One year after	All	Retention teaching	5.71	6.89*	8.33	5.78	6.87*	8.17
One year after	All	Retention school	1.33	1.47*	1.64	1.37	1.46*	1.55
One year after	Primary	Promotion	2.38	3.21*	4.43	3.27	3.75*	4.24
One year after	Primary	Retention teaching	5.17	6.85*	9.35	5.64	7.14*	9.36
One year after	Primary	Retention school	1.35	1.55*	1.76	1.41	1.55*	1.72
One year after	Secondary	Promotion	1.83	2.31*	2.92	2.95	3.31*	3.71
One year after	Secondary	Retention teaching	5.14	7.13*	9.6	5.46	7.15*	9.36
One year after	Secondary	Retention school	1.2	1.39*	1.59	1.32	1.43*	1.58
One year after	Special	Promotion	2.33	4.45*	13.85	2.85	4.16*	6.27
One year after	Special	Retention teaching	2.74	5.51*	12.74	3.24	5.98*	14.17
One year after	Special	Retention school	1.07	1.64*	2.49	1.21	1.65*	2.28
Two years after	All	Promotion	2.73	3.19*	3.77	2.97	3.21*	3.46
Two years after	All	Retention teaching	3.40	3.83*	4.30	3.42	3.81*	4.18
Two years after	All	Retention school	1.37	1.49*	1.62	1.39	1.46*	1.54
Two years after	Primary	Promotion	2.97	3.84*	5.00	3.44	3.87*	4.37
Two years after	Primary	Retention teaching	3.78	4.55*	5.52	4.08	4.66*	5.52

Year	Phase	Outcome	PS LCI	PS Est	PS UCI	CEM LCI	CEM Est	CEM UCI
Two years after	Primary	Retention school	1.41	1.56*	1.75	1.43	1.54*	1.67
Two years after	Secondary	Promotion	2.21	2.74*	3.45	2.26	2.5*	2.80
Two years after	Secondary	Retention teaching	2.67	3.21*	3.84	2.88	3.25*	3.73
Two years after	Secondary	Retention school	1.22	1.39*	1.55	1.32	1.41*	1.51
Two years after	Special	Promotion	2.23	4.06*	9.76	2.58	3.92*	5.77
Two years after	Special	Retention teaching	3.12	5.15*	9.28	3.74	6.13*	11.1
Two years after	Special	Retention school	1.29	1.85*	2.61	1.48	1.88*	2.43

Source: NPQ MI, GIAS and SWC data

LCI = lower confidence interval, Est = Estimate, UCI = upper confidence interval, PS = propensity score matching, CEM = coarsened exact matching

Table 85: Teacher level sensitivity analysis, Leadership NPQs

Year	Phase	Outcome	PS LCI	PS Est	PS UCI	CEM LCI	CEM Est	CEM UCI
One year after	All	Promotion	2.92	3.74*	4.96	3.97	4.43*	4.95
One year after	All	Retention teaching	4.63	6.18*	8.29	4.93	6.26*	8.13
One year after	All	Retention school	1.14	1.31*	1.5	1.2	1.31*	1.44
One year after	Primary	Promotion	2.9	4.08*	6.19	4.07	4.83*	5.69
One year after	Primary	Retention teaching	5.14	7.84*	12.42	5.66	8.20*	12.87
One year after	Primary	Retention school	1.06	1.30*	1.6	1.16	1.32*	1.53
One year after	Secondary	Promotion	2.26	3.2*	4.83	3.66	4.33*	5.15

Year	Phase	Outcome	PS LCI	PS Est	PS UCI	CEM LCI	CEM Est	CEM UCI
One year after	Secondary	Retention teaching	3.35	5.10*	7.9	4.02	5.46*	8.25
One year after	Secondary	Retention school	1.03	1.28*	1.56	1.21	1.41*	1.64
One year after	Special	Promotion	2.82	6.75*	27.74	3.21	5.50*	10.08
One year after	Special	Retention teaching	1.68	4.49*	14.36	2.13	4.47*	16.69
One year after	Special	Retention school	0.75	1.35	2.41	0.8	1.22*	1.85
Two years after	All	Promotion	3.24	4.05*	5.11	3.75	4.27*	4.75
Two years after	All	Retention teaching	3.27	3.87*	4.67	3.42	3.94*	4.62
Two years after	All	Retention school	1.19	1.34*	1.49	1.26	1.36*	1.47
Two years after	Primary	Promotion	3.38	4.59*	6.67	3.96	4.64*	5.46
Two years after	Primary	Retention teaching	3.52	4.61*	5.92	3.93	4.83*	6.09
Two years after	Primary	Retention school	1.15	1.35*	1.58	1.24	1.37*	1.52
Two years after	Secondary	Promotion	2.57	3.59*	5.19	2.79	3.36*	3.95
Two years after	Secondary	Retention teaching	2.45	3.16*	4.11	2.76	3.32*	4.16
Two years after	Secondary	Retention school	1.07	1.29*	1.49	1.25	1.40*	1.58
Two years after	Special	Promotion	2.09	4.52*	13.96	2.05	3.75*	7.5
Two years after	Special	Retention teaching	2.57	5.64*	14.91	3.52	6.76*	17.3
Two years after	Special	Retention school	1.01	1.56*	2.56	1.01	1.50*	2.11

Source: NPQ MI, GIAS and SWC data
LCI = lower confidence interval, Est = Estimate, UCI = upper confidence interval, PS = propensity score matching, CEM = coarsened exact matching

Table 86: Teacher level sensitivity analysis, Specialist NPQs

Year	Phase	Outcome	PS LCI	PS Est	PS UCI	CEM LCI	CEM Est	CEM UCI
One year after	All	Promotion	1.41	1.78*	2.36	2.53	2.95*	3.38
One year after	All	Retention teaching	5.95	7.78*	10.37	5.85	7.44*	9.65
One year after	All	Retention school	1.44	1.66*	1.88	1.48	1.60*	1.76
One year after	Primary	Promotion	0.96	1.64	3.02	2.12	2.80*	3.64
One year after	Primary	Retention teaching	4.18	6.14*	9.31	4.34	6.04*	8.9
One year after	Primary	Retention school	1.53	1.91*	2.39	1.65	1.87*	2.18
One year after	Secondary	Promotion	1.41	1.83*	2.5	2.47	2.90*	3.43
One year after	Secondary	Retention teaching	6.55	9.86*	16.84	6.83	9.61*	15.51
One year after	Secondary	Retention school	1.23	1.47*	1.79	1.34	1.48*	1.66
One year after	Special	Promotion	NA	NA	NA	1.94	4.13*	9.86
One year after	Special	Retention teaching	2.51	7.80*	56.37	3.23	8.74*	53.49
One year after	Special	Retention school	1.21	2.18*	4.23	1.54	2.38*	4.14
Two years after	All	Promotion	1.84	2.37*	3.05	2.51	2.82*	3.17
Two years after	All	Retention teaching	3.24	3.80*	4.49	3.3	3.72*	4.21
Two years after	All	Retention school	1.48	1.65*	1.84	1.48	1.60*	1.71

Year	Phase	Outcome	PS LCI	PS Est	PS UCI	CEM LCI	CEM Est	CEM UCI
Two years after	Primary	Promotion	1.65	2.61*	4.29	2.18	2.67*	3.31
Two years after	Primary	Retention teaching	3.49	4.53*	6.02	3.85	4.71*	5.83
Two years after	Primary	Retention school	1.56	1.87*	2.21	1.6	1.79*	2
Two years after	Secondary	Promotion	1.68	2.24*	3.03	1.87	2.19*	2.54
Two years after	Secondary	Retention teaching	2.63	3.29*	4.15	2.84	3.37*	4.05
Two years after	Secondary	Retention school	1.26	1.47*	1.75	1.41	1.53*	1.71
Two years after	Special	Promotion	1.33	4*	38.88	2.02	3.87*	7.32
Two years after	Special	Retention teaching	2.24	4.94*	12.22	2.99	5.33*	13.29
Two years after	Special	Retention school	1.36	2.39*	4.2	1.74	2.51*	3.66

Source: NPQ MI, GIAS and SWC data

LCI = lower confidence interval, Est = Estimate, UCI = upper confidence interval, PS = propensity score matching, CEM = coarsened exact matching

6.1.2 School level

For the teacher level evaluation, CEM was used for the sensitivity analysis. CEM is not suitable for the school level evaluation because of its tendency to drop units from the evaluation pool where exact matches are absent; as the sample size is already relatively low, losing more units is not a viable option.

Instead, weighting based on covariate balancing propensity scores was used (CBPS). This method assigns weights to all treated and comparison schools to optimise balance both in propensity scores and in the covariates that make up the propensity score.

The estimated effects obtained from CBPS weighting are shown below, with the estimated effects from the main body of the report for comparison.

Table 87: School level sensitivity analysis

Year	Phase	PS LCI	PS Est	PS UCI	CBPS LCI	CBPS Est	CBPS UCI
One year after	All	-2.04	-0.26	2.03	-1.34	-0.46	0.31
One year after	Primary	-1.63	0.51	3.00	-1.05	-0.02	1.17
One year after	Secondary	-0.45	1.84	4.62	0.35	1.42*	2.47
Two years after	All	-2.88	-1.81*	-0.57	-1.98	-1.29*	-0.62
Two years after	Primary	-2.14	-0.51	0.97	-1.64	-0.69	0.12
Two years after	Secondary	-3.98	-1.93	0.37	-3.51	-1.96*	-0.66

Source: NPQ MI, GIAS and SWC data

LCI = lower confidence interval, Est = Estimate, UCI = upper confidence interval, PS = propensity score matching, CBPS = covariate balancing propensity score

The estimates from CBPS were similar to those in the main report. The largest difference was in the impact on primary schools one year after starting an NPQ, but in both cases the point estimate was very close to zero (0.51 percentage points vs -0.02 percentage points) and the result was not statistically significant.

6.2 Selection effects sensitivity tests

One of the main limitations of this evaluation, in common with most quasi-experimental evaluations, is the risk that results may be impacted by unobserved selection effects. For example, teachers who enter NPQs may be more motivated to progress in their careers and more committed to teaching than those who do not take the qualifications, and those unobserved differences may partly account for some of the effects seen on the outcomes.

Here, sensitivity tests were carried out to get a sense of the extent to which this is the case. These tests involved repeating the evaluation based on data from before NPQ entrants entered their NPQ. Entrants from Cohort 1 only were included.

Table 88: Outcome years for testing

	Standard evaluation	Sensitivity test
Matched based on data from	2020	2018
Year of NPQ 'entry'	2021	2019
Outcome year 1 (1 year after 'entry')	2022	2020
Outcome year 2 (2 years after 'entry')	2023	2021

Source: FFT analysis

Note that, while the standard evaluation looked at outcomes both one and two years after starting an NPQ, this sensitivity test was limited to outcomes one year after starting an NPQ. This was done to maximise the sample size included in the sensitivity test, which necessarily required excluding any teachers who were not working in schools during 2018 to 2020.

To account for these exclusions, the standard evaluation was also repeated, with outcome years in 2022 and 2023, for just the subset of entrants included in the sensitivity test. Results from this group are included along with results from the sensitivity test for comparison.

It is not possible to include the retention in teaching outcome because the nature of the test means only teachers who remained in teaching are included and went on to enter an NPQ. Potential comparison teachers who were not still in teaching in autumn 2021 were also excluded. As the time series for the sensitivity test overlaps with the standard test, the sensitivity test may be affected by anticipation effects; that is, the outcomes seen in the sensitivity test may have been affected by the fact that the teachers included were planning to enter NPQs.

The tables below include results for Cohort 1 entrants in all NPQs, Specialist and Leadership NPQs. Asterisks indicate results that are statistically significant.

Table 89: Selection effects sensitivity test, odds ratios

Type	Outcome	Test	Lower CI	Estimate	Upper CI
All	Promotion	Standard	2.49	2.94*	3.54
All	Promotion	Sensitivity	1.85	2.20*	2.75
All	Retention school	Standard	1.24	1.38*	1.54

Type	Outcome	Test	Lower CI	Estimate	Upper CI
All	Retention school	Sensitivity	0.76	0.85*	0.94
Leadership	Promotion	Standard	2.98	3.75*	4.77
Leadership	Promotion	Sensitivity	2.12	2.71*	3.47
Leadership	Retention school	Standard	1.08	1.25*	1.43
Leadership	Retention school	Sensitivity	0.71	0.82*	0.94
Specialist	Promotion	Standard	1.65	2.13*	2.85
Specialist	Promotion	Sensitivity	1.24	1.65*	2.15
Specialist	Retention school	Standard	1.34	1.58*	1.83
Specialist	Retention school	Sensitivity	0.75	0.88	1.04

Source: NPQ MI, GIAS and SWC data
LCI = lower confidence interval, Est = Estimate, UCI = upper confidence interval

The results from the sensitivity tests show positive effects on promotion for all qualification types. However, they do not show positive effects on retention in the same school.

The results from the standard test show positive impacts similar to those seen in the main body of the report: relatively strong impact on promotion and a weaker effect on retention in the same school. The effects on promotion shown in the sensitivity test are smaller than those from the standard test.

6.3 Alternative promotion measure

As described in section 3.1, the definition of promotion used in the main body of the report is based on either a change to a higher-level role or an increase in Teaching and Learning Responsibility (TLR) payments of at least 20%, provided the total TLR payment after the increase was greater than the annual maximum amount payable as a TLR3 payment in the relevant year.

This section shows figures for promotion based around an alternative definition: a change to a higher-level role, with no account taken of TLR payments.

Based on this definition, unsurprisingly, fewer teachers were classed as promoted.

Table 90: Promotion under the alternative definition, one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Original	8%	8%	9%	9%
Primary	Original	7%	7%	8%	8%
Secondary	Original	9%	9%	10%	10%
Special	Original	11%	8%	9%	10%
AP	Original	9%	12%	7%	9%
All	Alternative	5%	5%	6%	6%
Primary	Alternative	6%	4%	7%	7%
Secondary	Alternative	6%	4%	5%	6%
Special	Alternative	7%	5%	8%	8%
AP	Alternative	7%	6%	14%	9%

Source: NPQ MI, GIAS and SWC data

Table 91: Promotion under the alternative definition, two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Original	11%	10%	10%	10%
Primary	Original	10%	10%	9%	8%
Secondary	Original	12%	10%	11%	10%
Special	Original	14%	14%	12%	13%
AP	Original	11%	14%	16%	11%
All	Alternative	8%	8%	7%	7%
Primary	Alternative	8%	8%	8%	7%
Secondary	Alternative	9%	6%	7%	6%
Special	Alternative	8%	7%	9%	11%
AP	Alternative	10%	12%	4%	11%

Source: NPQ MI, GIAS and SWC data

Teachers who were classed as promoted based on the original definition but not this alternative were slightly more likely to be male than those who were classed as promoted under both definitions. They were also likely to be slightly younger, with a somewhat lower salary and less time in both their school and their current role, more likely to be a classroom teacher, and less likely to have been promoted in the last three years.

Table 92: Characteristics of teachers classed as promoted under both definitions compared with the original definition only

Characteristic	Both definitions	Original only
Sex – female	70%	66%
Sex - male	30%	34%
Average age	36	33
Average % of FSM6 pupils	22%	21%
Average % of EAL pupils	21%	21%
Average % of staff promoted in last 3 years	4%	5%
Average % of staff retained in last 3 years	82%	81%
Role - Classroom teacher/other[12]	70%	99%
Role - Deputy or Assistant Head	29%	1%
Role - Head or Exec Head	1%	0%
Promoted in last 3 years	28%	14%
Average salary	£47,194	£38,440
Average time in school[13]	5.7	4.4
Average time in role	3.3	2.6

Source: NPQ MI, GIAS and SWC data

This section shows the results of modelling for all qualifications using the original and alternative methods.

Table 93: Estimated impact on promotion (odds ratios) under the original and alternative definitions, all qualifications, one year after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Original	2.74* (2.29, 3.28)	2.70* (2.21, 3.36)	2.78* (2.40, 3.31)	2.86* (2.27, 3.66)
Primary	Original	3.21* (2.38, 4.43)	3.47* (2.52, 4.77)	3.11* (2.43, 4.04)	3.35* (2.28, 5.24)

[12] This includes classroom teachers, leading practitioners, advanced skills teachers and advisory teachers.
[13] Refers to the average continuous number of years working in the same school. Similarly, average time in role refers to the average continuous number of years working in their current positions, i.e. in the same role in the same school.

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
Secondary	Original	2.31* (1.83, 2.92)	2.20* (1.73, 2.90)	2.48* (2.02, 3.13)	2.52* (1.84, 3.47)
Special	Original	4.45* (2.33, 13.85)	3.58* (1.43, 26.09)	3.15* (1.61, 7.34)	3.12* (1.13, 17.82)
AP	Original	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)
All	Alternative	3.09* (2.47, 3.92)	3.41* (2.65, 4.58)	3.05* (2.48, 3.76)	3.43* (2.59, 4.7)
Primary	Alternative	3.14* (2.28, 4.45)	3.60* (2.54, 5.20)	3.13* (2.35, 4.23)	3.50* (2.35, 5.83)
Secondary	Alternative	2.79* (1.97, 4.24)	2.97* (1.93, 4.68)	2.80* (2.09, 3.96)	3.26* (2.05, 5.51)
Special	Alternative	4.74* (2.04, 17.23)	3.36* (1.18, 33.42)	3.05* (1.49, 8.86)	3.22 (0.99, 28.73)
AP	Alternative	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)

Source: NPQ MI, GIAS and SWC data
Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)
* Statistically significant (alpha = 0.017)

Table 94: Estimated impact on promotion (odds ratios) under the original and alternative definitions, all qualifications, two years after starting an NPQ

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
All	Original	3.19* (2.73, 3.77)	3.19* (2.65, 3.86)	2.98* (2.55, 3.50)	2.78* (2.23, 3.47)
Primary	Original	3.84* (2.97, 5.00)	4.12* (2.99, 5.81)	4.02* (3.11, 5.30)	3.56* (2.53, 5.55)
Secondary	Original	2.74* (2.21, 3.45)	2.49* (1.97, 3.26)	2.30* (1.90, 2.81)	2.24* (1.73, 3.01)
Special	Original	4.06* (2.23, 9.76)	4.64* (2.23, 17.24)	4.53* (2.24, 11.00)	4.62* (1.74, 48.8)
AP	Original	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)
All	Alternative	4.10* (3.38, 5.10)	4.13* (3.36, 5.29)	3.90* (3.12, 4.83)	3.63* (2.74, 5.00)

Phase	Outcome	Cohort 1	Cohort 2	Cohort 3	Cohort 4
Primary	Alternative	4.13* (3.12, 5.97)	4.42* (3.08, 6.47)	4.23* (3.14, 5.76)	3.80* (2.54, 6.21)
Secondary	Alternative	4.12* (2.99, 5.89)	3.65* (2.56, 5.54)	3.52* (2.71, 4.76)	3.43* (2.19, 5.52)
Special	Alternative	4.09* (2.09, 10.29)	5.15* (2.32, 21.15)	4.42* (1.94, 14.59)	NA (CI > 100)
AP	Alternative	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)	NA (CI > 100)

Source: NPQ MI, GIAS and SWC data

Results are shown in the form: odds ratio (lower confidence interval, upper confidence interval)

* Statistically significant (alpha = 0.017)

Using the alternative definition of promotion, the point estimates were generally somewhat higher than using the original definition, although the confidence intervals tended to be wider.

To get a sense of how odds ratios translate into actual differences in outcomes, Tables 95 and 96 present modelled estimates of the median percentage of teachers who would be promoted or retained if they were either all entrants, or all non-entrants, for entrants from all phases. As for the odds ratios, these estimates are based on bootstrapping; the median is the median value of the estimate from 1,000 bootstrapped models.

Table 95: Estimated promotion for entrants and non-entrants under the alternative definition, one year after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Original	8%	3%	8%	3%	9%	3%	9%	3%
All	Alternative	5%	2%	5%	2%	7%	2%	7%	2%

Source: NPQ MI, GIAS and SWC data

Table 96: Estimated promotion for entrants and non-entrants under the alternative definition, two years after starting an NPQ

Phase	Outcome	Cohort 1 Entrant	Cohort 1 Non-entrant	Cohort 2 Entrant	Cohort 2 Non-entrant	Cohort 3 Entrant	Cohort 3 Non-entrant	Cohort 4 Entrant	Cohort 4 Non-entrant
All	Original	11%	4%	10%	4%	10%	4%	9%	4%
All	Alternative	8%	2%	8%	2%	8%	2%	7%	2%

Source: NPQ MI, GIAS and SWC data

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