Evaluation of The Access Project tuition on attainment at GCSE and A-Level, and progression to selective universities

2017/18 - 2019/20

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1. Executive summary

1.1 Main findings

- This report evaluates the effect of tuition and mentoring delivered as part of The Access Project (TAP) during the 2016/17-2019/20 academic years, as measured by attainment at GCSE and A-Level, and the likelihood of progressing to a selective university.
- It also looks at the impact on participants broken down into subgroups. For outcomes relating to GCSE and A-Level, this includes subgroups based on their level of engagement with the programme, by gender, and by subject in which tuition was given. For outcomes relating to higher education, it includes gender only.
- Six cohorts of TAP pupils are included in the evaluation: those who were in Year 11 between 2017/18 and 2019/20, and those who were in Year 13 between 2017/18 and 2019/20.
- As well as estimates of the impact for each cohort of TAP pupils, we produce a pooled estimate of the impact across all of the years covered by this evaluation.
- This report found evidence that the programme had a positive effect on GCSE attainment. We would estimate that participants would achieve between 0.34 and 0.95 grades higher than a matched non-participant in their tutored subject, on average.
- We also found evidence for a smaller positive effect on A-Level attainment. We would estimate that participants would achieve between 0.01 and 0.49 grades higher than a matched non-participant in their tutored subject, on average.
- We found evidence to suggest that TAP tuition has a positive effect on the likelihood of progressing to a top third university. Both the 2018 and 2019 cohorts were significantly more likely to do so.
- We also found evidence to suggest a positive effect on the 2019 cohort and when pooling results across all cohorts, but this was not conclusive. We note, however, that the results of a sensitivity analysis carried out using a different matching method did find statistically significant results for progression to a top third university for the 2019 cohort.
- We found evidence to suggest that the programme has a stronger impact on male participants than female participants, and that it has a stronger impact on those participants who attended a high number (>20) of sessions.
- We did not find conclusive evidence to suggest that the programme has a higher or lower impact on those tutored in any particular subject, or that the impact varies by the number of years over which participants receive tuition.

1.2 Methodology

- This evaluation follows a quasi-experimental design. We used pupil-level data from the National Pupil Database (NPD) to create a matched comparison group, similar to those pupils who participated in the programme with respect to a set of pupil and school level variables.
- Participants were matched to non-participants using on nearest neighbour matching based on propensity scores. In the appendix, we present results obtained from an alternative matching method.

- We then used regression models to compare the outcomes of the matched comparison group to participants, using both NPD data and data from the Higher Education Statistics Authority (HESA).
- The analysis of those who completed the relevant year in 2017/18 is based on that published as part of an earlier evaluation[1].

1.3 Limitations

- This evaluation uses a quasi-experimental design, which relies on creating a matched comparison group based on data from the NPD. This means that we are unable to control for factors not recorded in the NPD, for example parental occupation or levels of motivation.
- Some comparison pupils may have taken part in similar projects or received similar support from elsewhere. If this improved outcomes in comparison pupils, it may have led to underestimation of effects.
- Due to low sample sizes, we were unable to provide estimates of effect by subject for a number of subjects at both GCSE and A-Level.
- The fact that participants achieved higher A-Level grades than matched comparison pupils, on average, may explain some of the differences in likelihood to go on to enter a selective university, rather than the direct influence of the programme.
- This evaluation covers the period of the onset of the COVID-19 pandemic. It includes 2019/20, the first year in which public examinations were cancelled in England. This may have affected the impact of the programme on attainment at GCSE and A-Level.
- Progression to a selective university is a relatively rare event. This means that the minimum detectable effect size is smaller for a given sample size than for other outcomes, and means that inconclusive results are more likely.
- The analysis of this outcome may also be overly sensitive to the matching method used, perhaps partly as a consequence of the rarity of progression to a selective university mentioned above.
- This analysis may be highly sensitive to the definition of 'top third' or 'selective' universities. This may lead to difficulties when comparing this analysis with future evaluations if a different definition is used, or if and when some universities become more or less selective over time.

[1] *Evaluation of The Access Project tuition on attainment at GCSE and A-Level*, FFT Education Datalab (2020), accessed at https://ffteducationdatalab.org.uk/2020/09/the-access-project-evaluation-report/

2. Introduction

The Access Project (TAP) works with pupils from disadvantaged backgrounds, providing them with one-to-one tutoring from a trained volunteer to help them reach their potential, as well as other in-school support. The ultimate aim of the programme is to support students in gaining access to top universities, and the programme works with pupils who are studying for GCSEs and A-Levels.

In this evaluation, we looked at the impact of TAP tuition on three areas: attainment at GCSE, attainment at A-Level and progression to a top third university. We include six cohorts; those who completed KS4 between 2017/18 and 2019/20, and those who completed KS5 in the same years. The analysis of those who completed the relevant year in 2017/18 is based on that published as part of an earlier evaluation[2].

2.1 Methodology

This evaluation uses a quasi-experimental design. This involves comparing the outcomes of programme participants to those of a matched comparison group of pupils who are statistically similar. This approach tries to mimic what would be done in a formal experiment such as a randomised control trial.

We use 1:1 nearest neighbour matching based on propensity scores. Pupils in the matched comparison group are similar to participants with respect to the following matching variables.

Pupil characteristics

- Prior attainment at Key Stage 2 / 4
- Gender
- Ethnicity
- Whether they had English as an additional language (EAL)
- Measures of disadvantage (whether the pupil has been eligible for free school meals in the last six years, IDACI score)

School characteristics

- Region
- % of pupils eligible for FSM6
- % of EAL pupils
- Average KS2 / 4 prior attainment
- Gender
- Whether or not they had a sixth form

We then use regression models to compare outcomes for the participants to those in the matched comparison group. We control again for prior attainment variables and measures

[2] *Evaluation of The Access Project tuition on attainment at GCSE and A-Level*, FFT Education Datalab (2020), accessed at https://ffteducationdatalab.org.uk/2020/09/the-access-project-evaluation-report/

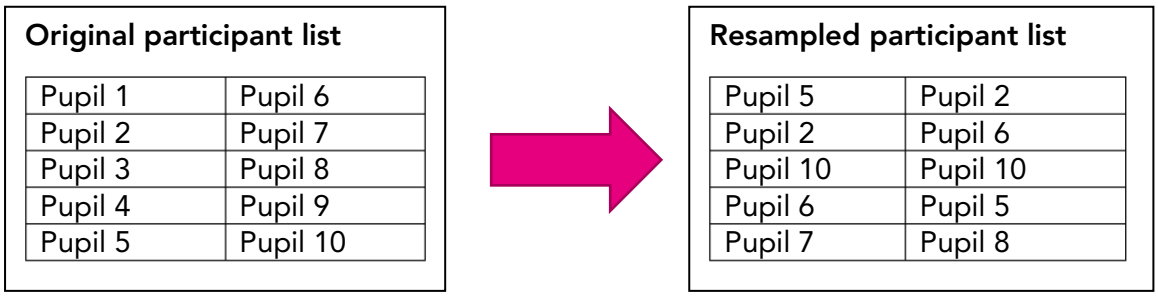
of disadvantage used for matching. Controlling again for matching variables is known as a doubly robust approach. In this case, we do not control again for all of the matching variables used to avoid overfitting our regression models. Rather, we control solely for prior attainment and disadvantage, which are the strongest predictors of attainment and progression.

Confidence intervals are estimated using bootstrapping. While it is possible to construct confidence intervals simply by using the standard errors estimated by the regression models, this method only accounts for the uncertainty around the estimate made by the regression model; it does not account for the uncertainty in the matching process. Therefore, confidence intervals created in this way are likely to underestimate the standard errors and produce artificially narrow confidence intervals.

Bootstrapping allows us to take account of both sources of uncertainty. It involves repeatedly creating a new dataset by taking a random sample of participants from the original list, with replacement, then repeating the analysis using the fresh data. The random sample size will be the same as the size of the original list; if there were 100 participants in a given year, the random sample would also include 100 pupils, although some participants would be included in the resampled list more than once, and some not at all.

The figure below shows an example of a resampled participant list, drawn from an original list of ten participants.

Figure 1: Resampling example



We repeat the process of creating and analysing new datasets 1,000 times. Our point estimates are found by taking the average of these 1,000 estimates, and the 95% confidence intervals are simply the range in which 95% of the 1,000 estimates lie.

We present estimates of the impact of the programme on outcomes overall, and, for outcomes relating to GCSE and A-Level attainment, we also present outcomes broken down by the level and type of engagement with the programme. This includes estimates for length of participation (one/two years), level of engagement (very/low/mid/high, determined by proportion of sessions attended) and tutored subject, as well as estimates broken by gender.

For outcomes related to progression to university, we present estimates of the impact on the programme overall and broken down by gender. This is because progression to selective universities is a relatively rare event, and the sample size is not large enough to create reliable estimates of the impact on smaller subgroups.

We will also present estimates obtaining from the use of an alternative matching method as an appendix.

2.1.1 Pooling estimates

As well as producing an estimate of the impact of TAP tuition for each individual year, we produce a set of pooled estimates. These are a weighted average of the estimates for each year; each estimate is weighted by the inverse of the standard deviation of the estimates for the relevant year.

2.1.2 Classification of selective universities

We use a classification of higher education institutions (HEIs) based on their degree of 'selectivity'. This is defined based on a list of universities supplied by the Access Project, which identifies 51 universities as 'top third'. The top third is further divided into three tiers.

The three tiers, in decreasing order of selectivity, are classified as:

- Super selective
- Highly selective
- Selective

A full list of the universities defined as top third is included as an appendix.

2.2 Data

The Access Project provided a dataset consisting of information on all pupils who participated in the project between 2017/18 and 2019/20. This included student identifiers (name and date of birth, where available), the school they attended, and information on their participation in the programme, including the subject(s) in which they were tutored, the number of sessions attended, and the number of years over which they took part. This was linked to corresponding records in the National Pupil Database (NPD), data from the Higher Education Statistics Agency (HESA) and publicly available school and university level data.

The National Pupil Database is an administrative dataset maintained by the Department for Education, and includes records of achievements in national tests and examinations for all pupils who have been in state-funded education since 2002. For this evaluation, we used data on attainment at Key Stage 2, GCSE and A-Level entries, as well as some demographic variables.

The HESA student record is a dataset maintained by HESA / Jisc, and includes records of enrolments and achievements in UK universities. For this evaluation, we used data on enrolments linked to the NPD.

The original datasets supplied by TAP consisted of 1,940 pupils in total. Of these pupils, a small number received tuition in more than one subject, and some received support sessions but no tutoring. The rest received tuition in one subject. On linking the data to the NPD, we found that a small number of pupils from the original dataset could not be matched to pupils in the NPD who were in the relevant year group. In some cases, pupils could not be matched to exam results on the relevant subjects; this may indicate drop-out or late entry. We excluded these pupils, as well as any pupils from whom data on demographics or prior attainment was unavailable in the NPD.

3. Mitigation of confounding effects

This section begins with an overview of how the programme participants compared to other pupils before matching was carried out. It will go on to describe the matching process used and how successful it was in creating a group of similar pupils for comparison purposes.

This section describes the differences before matching, and the matching process, for pupils who completed the relevant Key Stage between 2018/19 and 2019/20. For a similar description for those who completed the relevant Key Stage in 2017/18, see our earlier published evaluation of TAP[3].

3.1 Differences between participants and other pupils before matching

In this section, we look at how similar TAP pupils were to their peers before any matching was carried out.

We'll look first at pupils who received tuition in their GCSEs. The vast majority (81%) of these TAP participants attended schools in London. Most (60%) were female. Reflecting the nature of the project, which targets disadvantaged pupils, more than half (58%) of participants had been eligible for free school meals in the last six years. A high proportion (54%) had English as an additional language, compared to 25% nationally.

Among pupils who received A-Level tuition, the profile of TAP participants was similar. 79% attended a school in London, and 62% were female. Nearly half (47%) were disadvantaged and most (58%) had English as an additional language.

TAP pupils tended to have relatively high prior attainment before joining the programme. Those tutored at KS4 achieved an average fine grade in English and maths of 5.18, compared to 4.84 for their peers. Those tutored at KS5 received an average Attainment 8 grade of 67.6, compared to 64.6 for their peers.

3.2 Extent of success in creating matched comparisons

The matching process is intended to create a group of non-participants who are similar to the participating pupils with respect to pupil and school characteristics. Any differences in the outcomes of this comparison group and the participating pupils can then be assumed to be due to the programme.

We used 1:1 nearest neighbour matching based on propensity scores to create a matched comparison group for participants in each cohort. Pupils were matched on the variables described in section 2.1.

The graphs in figure 1, known as love plots,[4] show how similar the treated and comparison pupils were to one another, before and after matching, using a measure called the standardised mean difference. The mean difference is simply the difference between the average value of the variable for the treated students, and the average value for the comparison students. Standardising this measure means that we can compare balance across different variables. Generally, a standardised mean difference of 0.2 or below is

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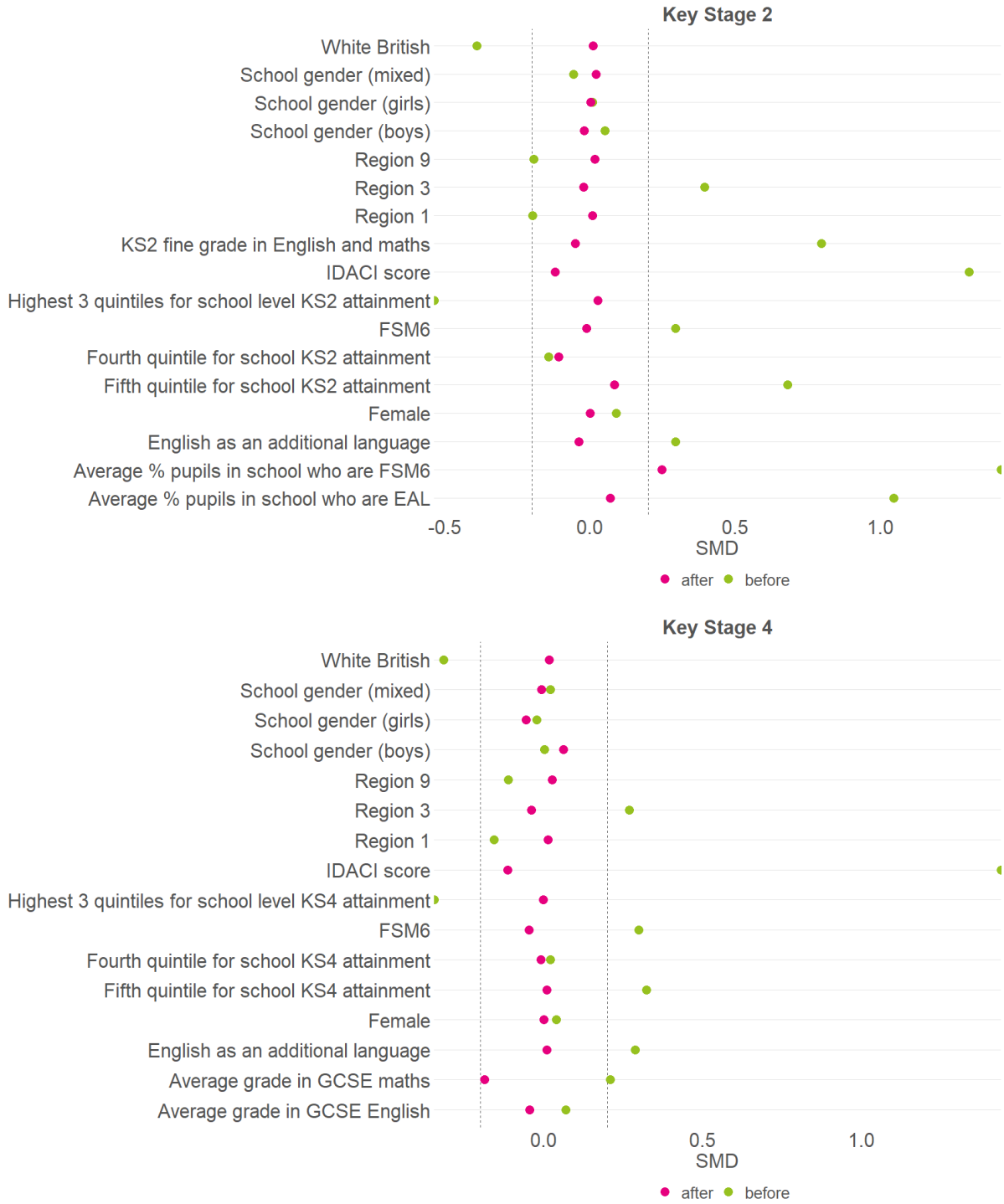
[3] *Evaluation of The Access Project tuition on attainment at GCSE and A-Level*, FFT Education Datalab (2020), accessed at https://ffteducationdatalab.org.uk/2020/09/the-access-project-evaluation-report/

[4] Loveplots are named for Professor Thomas E. Love, who first developed them along with colleagues (https://academic.oup.com/eurheartj/article/27/12/1431/647407)

considered to indicate good balance. This threshold is shown on the graphs as a dotted line.

As shown in figure 1, the matching process successfully created a well-matched comparison group. The +-0.2 boundaries are shown on the chart as dotted lines.

Figure 1: Standardised mean differences between participants and non-participants, before and after matching



4. Results

Results are given in several different forms: estimated impact, odds ratios, predicted probabilities, effect size, and months of progress.

In this report, we look at outcomes in five areas:

- GCSE grade in tutored subject
- A-Level grade in tutored subject
- Attainment 8 score
- Score in best 3 A-Levels
- Likelihood of progressing to a selective university

The estimated impact on GCSE grades in the tutored subject are reported in grades; an estimated impact of one would suggest that we'd expected a programme participant to achieve one grade higher than a matched non-participant. Similarly, A-Level grades are shown here as point scores ranging from 0-6. These relate to letter grades as follows: A* - 6, A - 5, B - 4, C - 3, D - 2, E - 1.

The estimated impact on Attainment 8 score is reported as a raw score. An estimated impact of one would suggest that we'd expected a programme participant to achieve a score one mark higher than a matched non-participant. Best three A-Level grades are shown as point scores ranging from 0-18; these are simply the sum of a student's point score for their best three A-Levels.

We also include estimates of effect size for these outcomes. Effect size is a standardised version of the estimated impact. That is, it is the estimated impact divided by the standard deviation in the outcome measure. Because it is a standardised measure, it can be compared across different outcomes, so may be useful for comparing the magnitude of the programme's impact with that of other projects that have different outcomes.

However, effect sizes can be difficult to interpret; it is not immediately obvious whether an effect size of, for example, 0.5 is large or small. Months of progress are a measure used in education research to try and help with this. In this report, effect sizes were translated into equivalent months of progress using guidance developed by the Education Endowment Foundation, as shown in table 3.[5] In our example, an effect size of 0.5 would be the equivalent of six months of additional progress; expressed using the months of progress measure, it is clear that this is a large effect.

Table 3: Effect sizes and equivalent months of progress

Effect size from	To	Months of progress
-0.04	0.04	0
0.05	0.09	1
0.10	0.18	2
0.19	0.26	3
0.27	0.35	4

[5] https://educationendowmentfoundation.org.uk/projects-and-evaluation/evaluation/evaluation-guidance-and-resources/reporting-templates, *Evaluation report template*, accessed May 2023

0.36	0.44	5
0.45	0.52	6
0.53	0.61	7
0.62	0.69	8
0.70	0.78	9
0.79	0.87	10
0.88	0.95	11

The final outcome, the likelihood of progressing to a selective university, is binary; either a student enters a qualifying university or they do not. We report the estimated effect on this outcome using odds ratios. These ratios tell us the relative odds of a pupil entering a relevant university, depending on whether they took part in the programme or not. An odds ratio of one would mean that a programme participant had exactly the same odds of entering as a comparison pupil. An odds ratio above one means that a participant is more likely to enter, and an odds ratio of below one means that they are less likely.

As with effect sizes, odds ratios are not always easy to interpret. To aid with interpretation, we have also included the predicted probability of a participant going on to enter a relevant university and the predicted probability of a matched comparison pupil doing so, for comparison.

All counts shown in this section have been rounded to the nearest 5 pupils.

Key Stage 4

All counts shown in this section have been rounded to the nearest 5 pupils.

Overall

Estimates of the impact of TAP tuition on attainment at GCSE in the tutored subject, and on overall Attainment 8 score, are shown in the tables below, with 95% confidence intervals (all to two decimal places). Also included in the tables are estimates of effect size and equivalent months of progress.

Table 1: Estimated effect of TAP tuition on attainment in the tutored GCSE subject

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	0.41	0.65	0.89	0.33	4	570
2019	0.17	0.53	0.88	0.26	3	680
2020	0.36	0.79	1.24	0.40	5	800
Pooled	0.34	0.64	0.95	0.32	4	2050

Table 2: Estimated effect of TAP tuition on Attainment 8 score

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	4.93	6.70	8.50	0.37	5	570
2019	2.38	5.49	8.48	0.30	4	680
2020	6.42	9.00	11.60	0.50	6	800
Pooled	4.86	7.12	9.38	0.39	5	2050

These results provide evidence that TAP tuition had a positive effect on GCSE attainment in the tutored subject for all of the cohorts covered in this evaluation. The estimated impact is slightly lower for the 2019 cohort and higher for the 2020 cohort. The pooled estimate across all three cohorts is 0.64; we would estimate that a TAP pupil would achieve 0.64 of a grade higher in their tutored subject, on average, than a matched pupil.

The estimated impact on Attainment 8 follows a similar pattern, and is slightly higher than the estimated impact on attainment in the tutored subject. This suggests that, as well as achieving a higher grade in the tutored subject, TAP pupils also achieve higher grades in other subjects, on average, than matched comparison pupils.

The pooled estimate across all three cohorts is 7.12, the equivalent of roughly 0.71 of a grade in each of the subjects that make up the Attainment 8 score.

Gender

Estimates of the impact of TAP tuition on attainment at GCSE in the tutored subject, broken down by gender, are shown in the tables below, with 95% confidence intervals (all to two decimal places). Also included in the tables are estimates of effect size and equivalent months of progress.

Table 3: Estimated effect of TAP tuition on attainment in the tutored GCSE subject, male pupils

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	0.53	0.93	1.33	0.45	6	225
2019	-0.11	0.60	1.34	0.29	4	270
2020	0.36	0.90	1.49	0.45	6	330
Pooled	0.38	0.86	1.38	0.42	5	820

Table 4: Estimated effect of TAP tuition on attainment in the tutored GCSE subject, female pupils

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	0.33	0.60	0.88	0.30	4	350
2019	-0.07	0.37	0.80	0.18	2	410
2020	0.10	0.66	1.25	0.34	4	470
Pooled	0.20	0.55	0.91	0.28	4	1230

These results provide evidence that TAP tuition had a positive effect on GCSE attainment for both male and female pupils – with the exception of the 2019 cohort, for whom the estimated impact on both genders is inconclusive.

In every year, the estimated impact on male pupils is higher than the estimated impact on female pupils. The pooled estimate for male pupils is 0.86 of a grade while the pooled estimate for female pupils is 0.55, the equivalent of just over half a grade.

We see a similar picture when looking at Attainment 8.

Table 5: Estimated effect of TAP tuition on Attainment 8 score, male pupils

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	6.82	9.94	12.85	0.54	7	225
2019	1.82	7.68	13.06	0.41	5	270
2020	6.34	10.72	15.44	0.59	7	330
Pooled	5.84	9.77	13.58	0.53	7	820

Table 6: Estimated effect of TAP tuition on Attainment 8 score, female pupils

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	3.30	5.43	7.55	0.30	4	350
2019	-0.14	3.66	7.40	0.20	3	410
2020	4.02	7.36	10.56	0.42	5	470
Pooled	2.84	5.59	8.29	0.31	4	1230

These results provide evidence that TAP tuition has a positive effect on Attainment 8 score for both male and female pupils, with the exception of female pupils in 2019, for whom the result is inconclusive.

Again, the estimated impact on male pupils is higher than that on female pupils. The pooled estimate for male pupils is 9.77, roughly the equivalent of just under a grade in each of the subjects that make up the Attainment 8 score, while for female pupils it is 5.59, the equivalent of just over half a grade in each of the subjects.

Years

Estimates of the impact of TAP tuition on attainment at GCSE in the tutored subject, broken down by years of participation, are shown in the tables below, with 95% confidence intervals (all to two decimal places). Also included in the tables are estimates of effect size and equivalent months of progress.

Table 7: Estimated effect of TAP tuition on attainment in the tutored GCSE subject

Year	Years	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	One	0.22	0.51	0.79	0.26	3	315
	Two	0.42	0.85	1.28	0.43	5	255
2019	One	-0.16	1.10	2.42	0.53	7	115
	Two	0.02	0.43	0.82	0.21	3	565
2020	One	-0.34	0.49	1.32	0.25	3	170
	Two	0.45	0.91	1.39	0.46	6	625
Pooled	One	0.14	0.53	0.92	0.27	4	605
	Two	0.28	0.71	1.14	0.35	4	1445

These results provide evidence of a positive impact for pupils who took part in the programme for two years, and some evidence of a positive impact for those who took part for one year, also results in both 2019 and 2020 are inconclusive for this group.

For the 2018 and 2020 cohorts, and in the pooled estimates, the impact on those who took part for two years is higher than for those who took part for one year. In 2019, the point estimate for those who took part for one year is higher than for those who took part over two years, although the confidence interval for this group is very wide.

On balance, and based on the pooled estimates, these results suggest that the impact is higher on those who took part over two years than on those who took part for just one year.

The estimated impact on Attainment 8 score follows the same pattern.

Table 8: Estimated effect of TAP tuition on Attainment 8 score

Year	Years	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	One	3.28	5.51	7.73	0.30	4	315
	Two	5.50	8.62	12.22	0.47	6	255
2019	One	-0.24	10.14	21.58	0.55	7	115
	Two	1.06	4.54	7.80	0.25	3	565
2020	One	0.39	6.06	12.04	0.34	4	170
	Two	7.27	9.93	12.98	0.56	7	625

Pooled	One	2.77	5.75	8.80	0.31	4	605
	Two	4.91	7.95	11.23	0.44	5	1445

Again, in 2019 the estimated impact for those who took part over one year is higher than for those who took part over two, but it has a very wide confidence interval. On balance, the impact on those who took part over two years appears to be higher than for those who took part for just one year.

Dosage

Estimates of the impact of TAP tuition on attainment at GCSE in the tutored subject, broken down by dosage, are shown in the tables below, with 95% confidence intervals (all to two decimal places). Also included in the tables are estimates of effect size and equivalent months of progress.

Dosage is here defined as the number of tuition sessions attended by a pupil during Year 11, categorised into very low (nine sessions or less) low (between ten and fourteen sessions), medium (between fifteen and twenty sessions and high (twenty-one sessions or more).

Table 9: Estimated effect of TAP tuition on attainment in the tutored GCSE subject

Year		Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	Very low	0.05	0.63	1.21	0.32	4	140
	Low	-0.42	0.07	0.53	0.03	0	140
	Med	0.30	0.74	1.19	0.38	5	160
	High	0.52	1.06	1.56	0.54	7	135
2019	Very low	-0.50	0.28	1.05	0.13	2	170
	Low	-0.37	0.94	2.24	0.46	6	100
	Med	-0.31	0.25	0.80	0.12	2	200
	High	0.32	0.94	1.62	0.46	6	205
2020	Very low	-0.04	0.45	1.03	0.23	3	330
	Low	0.25	0.89	1.58	0.45	6	185
	Med	0.19	0.93	1.68	0.47	6	180
	High	0.44	1.25	2.09	0.63	8	100
Pooled	Very low	-0.11	0.47	1.10	0.24	3	640
	Low	-0.19	0.42	1.04	0.22	3	425
	Med	0.09	0.62	1.16	0.31	4	540
	High	0.44	1.05	1.68	0.53	7	440

These results provide evidence that TAP tuition has a positive impact on those pupils in the high dosage group – that is, those who attended more than twenty sessions. For this group, the pooled estimate is 1.05, or just over a grade in the tutored subject.

The pooled estimate for those in the medium dosage group is also significant, the equivalent of 0.62 of a grade. However, these results don't provide conclusive evidence for an impact on those in the lower dosage groups.

Turning to Attainment 8, we also see positive impacts.

Table 10: Estimated effect of TAP tuition on Attainment 8 score

Year		Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	Very low	4.37	8.67	13.25	0.47	6	140
	Low	-2.24	1.64	5.47	0.09	1	140
	Med	4.04	7.77	11.84	0.42	5	160
	High	5.76	10.15	14.38	0.56	7	135
2019	Very low	-3.55	2.53	9.30	0.14	2	170
	Low	0.69	9.74	19.02	0.53	7	100
	Med	0.40	5.12	9.74	0.28	4	200
	High	2.43	7.79	13.13	0.42	5	205
2020	Very low	4.80	8.48	12.70	0.47	6	330
	Low	5.44	10.58	15.61	0.59	7	185
	Med	3.92	9.02	13.44	0.50	6	180
	High	7.55	13.76	20.24	0.77	9	100
Pooled	Very low	3.18	7.50	12.30	0.41	5	640
	Low	0.67	5.50	10.30	0.3	4	425
	Med	2.92	7.33	11.67	0.4	5	540
	High	5.06	10.14	15.19	0.56	7	440

The pooled estimates provide evidence for a positive effect at all dosage levels, although the highest impact is on those in the high dosage group. For these pupils, the estimated impact is 10.14, the equivalent of just over a grade in each of the subjects that make up Attainment 8.

Subject

Estimates of the impact of TAP tuition on attainment at GCSE in the tutored subject, broken down by subject, are shown in the tables below, with 95% confidence intervals (all to two decimal places). Also included in the tables are estimates of effect size and equivalent months of progress.

We excluded any subject for which data on less than thirty treated students was available; these sample sizes are too low to carry out meaningful analysis. English and maths were the only two subjects that met this condition.

Table 11: Estimated effect of TAP tuition on attainment in the tutored GCSE subject

Year	Years	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils

2018	English	0.23	0.70	1.17	0.50	6	120
	Maths	0.04	0.39	0.77	0.30	4	240
2019	English	-0.80	-0.04	0.71	-0.02	0	145
	Maths	0.11	0.62	1.13	0.30	4	300
2020	English	-0.11	0.55	1.15	0.31	4	160
	Maths	0.18	0.96	1.52	0.48	6	355
Pooled	English	-0.08	0.51	1.07	0.34	4	425
	Maths	0.08	0.54	0.99	0.33	4	895

These results provide evidence of a positive impact for those tutored in maths, but the results for those tutored in English are inconclusive.

For the 2018 cohort, the estimated impact is higher for those tutored in English. For the 2019 and 2020 cohorts, it is the other way around, although the confidence intervals for the estimates overlap considerably.

The pooled estimates for English and maths are very similar, at just over half a grade for each subject.

Looking at Attainment 8 scores, we see a similar pattern.

Table 12: Estimated effect of TAP tuition on Attainment 8 score

Year	Years	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	English	3.65	9.13	14.66	0.39	5	120
	Maths	2.62	5.56	8.32	0.19	3	240
2019	English	-0.90	5.20	11.56	0.28	4	145
	Maths	1.78	6.32	10.78	0.34	4	300
2020	English	2.82	8.90	15.31	0.49	6	160
	Maths	6.09	9.92	14.01	0.55	7	355
Pooled	English	1.99	7.85	13.90	0.38	5	425
	Maths	3.38	6.89	10.36	0.32	4	895

Again, the impact on those tutored in English is higher than those tutored in maths in 2018, but slightly lower in subsequent years. The pooled estimates for English are maths are similar.

Key Stage 5

All counts shown in this section have been rounded to the nearest 5 students.

Overall

Estimates of the impact of TAP tuition on attainment at A-Level in the tutored subject, are shown in the tables below, with 95% confidence intervals (all to two decimal places). Also included in the tables are estimates of effect size and equivalent months of progress.

A-Level grades are shown here as point scores ranging from 0-6. These relate to letter grades as follows: A* - 6, A - 5, B - 4, C - 3, D - 2, E - 1. Best three grades are also shown as

point scores ranging from 0-18; these are simply the sum of a student's point score for their best three A-Levels.

Table 13: Estimated effect of TAP tuition on attainment in the tutored A-Level subject

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	-0.03	0.21	0.44	0.15	2	430
2019	0.00	0.25	0.52	0.18	2	540
2020	0.04	0.26	0.50	0.2	3	600
Pooled	0.01	0.24	0.49	0.18	2	1570

Table 14: Estimated effect of TAP tuition on Best 3 score

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	0.13	0.83	1.53	0.19	3	430
2019	0.59	1.23	1.89	0.31	4	540
2020	0.19	0.81	1.42	0.21	3	600
Pooled	0.30	0.95	1.60	0.24	3	1570

These results provide evidence that TAP tuition had a positive impact on grade in the tutored A-Level subject. The estimated impact in 2018 is inconclusive, but in both 2019 and 2020 the lower confidence interval is above zero.

The pooled estimate is 0.24, or just under a quarter of an A-Level grade.

The results also provide evidence that TAP tuition had a positive impact on score across a student's best 3 A-Levels. The pooled estimate is 0.95, the equivalent of just over a third of a grade in each of their best 3 A-Levels.

Gender

Estimates of the impact of TAP tuition on attainment at A-Level in the tutored subject, broken down by gender, are shown in the tables below, with 95% confidence intervals (all to two decimal places). Also included in the tables are estimates of effect size and equivalent months of progress.

A-Level grades are shown here as point scores ranging from 0-6. These relate to letter grades as follows: A* - 6, A - 5, B - 4, C - 3, D - 2, E - 1.

Table 15: Estimated effect of TAP tuition on attainment in the tutored A-Level subject, male pupils

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	0.08	0.43	0.80	0.30	4	180
2019	-0.25	0.23	0.69	0.15	2	210
2020	-0.04	0.32	0.70	0.23	3	270
Pooled	-0.04	0.34	0.74	0.24	3	650

Table 16: Estimated effect of TAP tuition on attainment in the tutored A-Level subject, female pupils

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	-0.22	0.07	0.36	0.05	1	250
2019	-0.11	0.20	0.49	0.14	2	345
2020	-0.11	0.16	0.45	0.13	2	340
Pooled	-0.15	0.14	0.43	0.10	2	930

These results do not provide evidence of a positive impact on A-Level grade for either male or female pupils; the results for both genders are inconclusive. However, the estimated impact on male pupils is higher than that on female pupils.

When we look at score in best 3 A-Levels, however, we do find some evidence of a positive impact. Best three grades are shown as point scores ranging from 0-18; they are simply the sum of a student's point score for their best three A-Levels.

Table 17: Estimated effect of TAP tuition on Best 3 score, male pupils

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	0.48	1.53	2.62	0.34	4	180
2019	0.13	1.36	2.59	0.32	4	210
2020	0.00	1.07	2.18	0.27	4	270
Pooled	0.21	1.31	2.45	0.31	4	650

Table 18: Estimated effect of TAP tuition on Best 3 score, female pupils

Year	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	-0.52	0.28	1.11	0.07	1	250
2019	0.28	1.07	1.87	0.28	4	345
2020	-0.16	0.54	1.25	0.14	2	340
Pooled	-0.13	0.63	1.40	0.16	2	930

While the estimated impact on female pupils is inconclusive, these results do provide evidence of a positive impact for male pupils. The pooled estimate for male pupils is 1.31, the equivalent of 0.38 of a grade in each of their best 3 A-Levels.

Dosage

Estimates of the impact of TAP tuition on attainment at A-Level in the tutored subject, broken down by dosage, are shown in the tables below, with 95% confidence intervals (all to two decimal places). Also included in the tables are estimates of effect size and equivalent months of progress.

A-Level grades are shown here as point scores ranging from 0-6. These relate to letter grades as follows: A* - 6, A - 5, B - 4, C - 3, D - 2, E - 1.

Dosage is here defined as the number of tuition sessions attended by a pupil during Year 13, categorised into very low (nine sessions or less) low (between ten and fourteen

sessions), medium (between fifteen and twenty sessions and high (twenty-one sessions or more).

Table 19: Estimated effect of TAP tuition on attainment in the tutored A-Level subject

Year		Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	Very low	-0.38	0.19	0.71	0.14	2	110
	Low	-0.18	0.14	0.46	0.1	2	120
	Med	-0.45	0.02	0.52	0.01	0	110
	High	0.24	0.72	1.21	0.52	6	90
2019	Very low	-0.28	0.30	0.88	0.21	3	130
	Low	-0.59	0.07	0.70	0.05	1	80
	Med	-0.49	0.01	0.55	0	0	125
	High	0.03	0.46	0.86	0.32	4	200
2020	Very low	-0.20	0.15	0.48	0.11	2	210
	Low	-0.15	0.23	0.63	0.17	2	165
	Med	-0.05	0.37	0.81	0.28	4	140
	High	-0.45	0.13	0.69	0.1	2	90
Pooled	Very low	-0.26	0.19	0.62	0.14	2	450
	Low	-0.22	0.17	0.56	0.12	2	365
	Med	-0.29	0.17	0.65	0.11	2	375
	High	-0.01	0.47	0.94	0.34	4	380

These results do not provide conclusive evidence of an impact at any of the dosage levels. In 2018 and 2019, the estimates for the high dosage group are positive and significant, but in 2020 the estimate for this group is inconclusive.

This pattern is repeated when looking at the impact on score in best 3 A-Levels, although for this outcome, the pooled estimate for the high dosage group is significant. Best three grades are shown as point scores ranging from 0-18; they are simply the sum of a student's point score for their best three A-Levels.

Table 20: Estimated effect of TAP tuition on attainment on Best 3 score

Year		Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	Very low	-0.23	1.08	2.48	0.25	3	110
	Low	0.03	1.11	2.12	0.26	3	120
	Med	-1.30	0.26	1.69	0.06	1	110
	High	0.76	2.05	3.37	0.47	6	90
2019	Very low	-0.87	0.61	2.04	0.15	2	130
	Low	-0.53	1.30	2.95	0.33	4	80
	Med	-0.88	0.61	2.10	0.15	2	125

	High	0.87	1.99	3.08	0.5	6	200
2020	Very low	-0.64	0.33	1.31	0.08	1	210
	Low	0.17	1.16	2.22	0.3	4	165
	Med	0.01	1.20	2.32	0.31	4	140
	High	-1.49	0.13	1.65	0.03	0	90
Pooled	Very low	-0.58	0.60	1.79	0.15	2	450
	Low	0.00	1.16	2.29	0.29	4	365
	Med	-0.57	0.79	2.10	0.19	3	375
	High	0.29	1.58	2.84	0.39	5	380

These results provide evidence that of a positive effect on the high dosage group, the equivalent of around half a grade in each of their best three A-Levels. There is also evidence of an effect on the low dosage group, although the confidence interval for these group is only just above zero.

Years

Estimates of the impact of TAP tuition on attainment at A-Level in the tutored subject, broken down by years of participation, are shown in the tables below, with 95% confidence intervals (all to two decimal places). Also included in the tables are estimates of effect size and equivalent months of progress.

A-Level grades are shown here as point scores ranging from 0-6. These relate to letter grades as follows: A* - 6, A - 5, B - 4, C - 3, D - 2, E - 1.

Table 21: Estimated effect of TAP tuition on attainment in the tutored A-Level subject

Year	Years	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	One	-0.26	0.09	0.41	0.06	1	245
	Two	0.01	0.35	0.69	0.25	3	180
2019	One	-0.74	0.02	0.72	0.01	0	100
	Two	-0.11	0.25	0.58	0.17	2	440
2020	One	-0.17	0.41	1.03	0.31	4	90
	Two	-0.19	0.06	0.30	0.04	0	515
Pooled	One	-0.31	0.15	0.58	0.1	2	430
	Two	-0.11	0.19	0.48	0.13	2	1140

These results do not provide conclusive evidence of an effect on either group; estimate for both groups are positive, but not statistically significant.

In 2018 and 2019, the estimated impact for those who took part over two years is higher than for those who took part for just one year, but in 2020, this is reversed.

The pooled estimate for students who took part over two years is slightly higher than for those who took part for just one year.

When looking at best 3 scores, the results are even less conclusive. Best three grades are shown as point scores ranging from 0-18; they are simply the sum of a student's point score for their best three A-Levels.

Table 22: Estimated effect of TAP tuition on Best 3 score

Year	Years	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	One	0.07	1.00	1.93	0.23	3	245
	Two	-0.41	0.69	1.70	0.16	2	180
2019	One	-1.58	0.33	2.14	0.08	1	100
	Two	0.12	1.08	1.94	0.27	4	440
2020	One	-0.97	0.83	2.47	0.21	3	90
	Two	-0.46	0.23	0.86	0.06	1	515
Pooled	One	-0.41	0.86	2.07	0.2	3	430
	Two	-0.28	0.58	1.35	0.14	2	1140

For the 2018 and 2020 cohorts, the impact is slightly higher for those who took part for just one year, while for the 2019 cohort it is the other way around. The pooled estimate for those who took part for one year is higher than for those who took part for two, but neither estimate is conclusive.

Subject

Estimates of the impact of TAP tuition on attainment at A-Level in the tutored subject, broken down by subject, are shown in the tables below, with 95% confidence intervals (all to two decimal places). Also included in the tables are estimates of effect size and equivalent months of progress.

A-Level grades are shown here as point scores ranging from 0-6. These relate to letter grades as follows: A* - 6, A - 5, B - 4, C - 3, D - 2, E - 1.

We excluded any subject for which data on less than thirty treated students was available; these sample sizes are too low to carry out meaningful analysis. Biology and maths were the only two subjects that met this condition.

Table 23: Estimated effect of TAP tuition on attainment in the tutored A-Level subject

Year	Years	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	Biology	NA	NA	NA	Na	NA	NA
	Maths	-0.07	0.44	0.93	0.28	4	110
2019	Biology	-0.42	0.16	0.74	0.1	2	125
	Maths	-0.24	0.26	0.76	0.19	3	160
2020	Biology	-0.79	0.05	0.86	0.03	0	110
	Maths	-0.53	-0.08	0.40	-0.05	0	170
Pooled	Biology	-0.54	0.13	0.78	0.07	1	235
	Maths	-0.29	0.19	0.68	0.13	2	440

These results so not provide conclusive evidence of a positive impact for those tutored in biology or maths. The estimated impact in both subjects is much lower for the 2020 cohort, albeit with wide confidence intervals. While the pooled estimate in maths is higher than that in biology, the confidence intervals overlap considerably and it is difficult to draw any conclusions on which subject is associated with the highest impact.

Again, we see a similar picture when we look at the impact on score across best 3 A-Level subjects. Best three grades are shown as point scores ranging from 0-18; they are simply the sum of a student's point score for their best three A-Levels.

Table 24: Estimated effect of TAP tuition on Best 3 score

Year	Years	Lower CI	Estimate	Upper CI	Effect size	Months of progress	No. pupils
2018	Biology	NA	NA	NA	Na	NA	NA
	Maths	0.53	1.87	3.31	0.45	6	110
2019	Biology	-0.59	1.08	2.59	0.27	4	125
	Maths	-0.65	0.69	2.03	0.19	3	160
2020	Biology	-1.23	0.98	3.13	0.23	3	110
	Maths	-1.35	-0.22	0.92	-0.06	0	170
Pooled	Biology	-0.81	1.04	2.78	0.26	3	235
	Maths	-0.56	0.69	1.98	0.18	2	440

These results do not provide any conclusive evidence for an impact on best 3 A-Level scores for those tutored in biology or maths. The pooled point estimate for biology is higher than that for maths, but neither are conclusive and the confidence intervals overlap considerably.

Higher education

All counts shown in this section have been rounded to the nearest 5 students.

Overall

Estimates of the impact of TAP tuition on progression to a selective university are shown in the tables below, with 95% confidence intervals (all to two decimal places).

We report the estimated effect on this outcome using odds ratios. These ratios tell us the relative odds of a pupil entering a relevant university, depending on whether they took part in the programme or not. An odds ratio of one would mean that a programme participant had exactly the same odds of entering as a comparison pupil. An odds ratio above one means that a participant is more likely to enter, and an odds ratio of below one means that they are less likely.

Table 25: Estimated effect of TAP tuition on likelihood of progressing to a selective university

Year		Lower CI	Estimate	Upper CI	No. students
2018	Super selective	1.52	2.85	5.69	425
	Highly selective	1.29	2.06	3.46	425
	Any top third	1.05	1.57	2.39	425
2019	Super selective	0.60	1.34	3.05	620
	Highly selective	0.67	0.99	1.57	620
	Any top third	0.81	1.29	2.03	620
2020	Super selective	0.81	1.41	2.70	655
	Highly selective	0.90	1.35	2.11	655
	Any top third	1.18	1.77	2.70	655
Pooled	Super selective	0.82	1.55	3.15	1700
	Highly selective	0.80	1.21	1.93	1700
	Any top third	0.99	1.52	2.33	1700

These results provide evidence to support the hypothesis that TAP tuition has a positive impact on the likelihood of progressing to a top third university.

For both the 2018 and 2020 cohort, the estimated odds ratios are above one – indicating that TAP students are more likely than their matched peers to progress to a top third university – and the lower confidence intervals are also above one, indicating that the result can be considered statistically significant.

For the 2018 cohort, the odds ratios of progressing to a super selective university, or to either a highly selective or super selective university, are also both above one and significant. TAP students in this cohort were significantly more likely than comparison pupils to progress to a highly selective or super selective university.

However, although the majority of the other estimated odds ratio were above one, none were statistically significant, meaning that we cannot be confident that TAP tuition has an impact on progression to selective universities for the 2019 cohort, or for the pooled cohorts.

The table below shows the predicted probabilities of TAP students and matched comparison students going on to enter a selective university. These probabilities may be easier to interpret than odds ratios.

Table 26: Predicted probabilities of TAP students and matched comparison students progressing to a selective university

		Predicted probability		No. students	
Year		Treated	Comparison	Treated	Comparison
2018	Super selective	20%	10%	215	215
	Highly selective	37%	27%	215	215
	Any top third	66%	58%	215	215
2019	Super selective	15%	11%	310	310
	Highly selective	33%	34%	310	310
	Any top third	65%	60%	310	310
2020	Super selective	16%	13%	325	325
	Highly selective	34%	28%	325	325
	Any top third	67%	54%	325	325
Pooled	Super selective	16%	11%	850	850
	Highly selective	34%	29%	850	850
	Any top third	66%	57%	850	850

Reflecting the fact that the estimated odds ratios are above one, the predicted probabilities of progression are higher for TAP students than for matched comparison students. Based on the pooled estimates, our models predict that 16% of TAP students will progress to a super selective university, compared to 11% of similar comparison students, and that 66% will progress to a top third university, compared to 57% of comparison students.

Gender

Estimates of the impact of TAP tuition on progression to a selective university, broken down by gender, are shown in the tables below, with 95% confidence intervals (all to two decimal places).

We report the estimated effect on this outcome using odds ratios. These ratios tell us the relative odds of a pupil entering a relevant university, depending on whether they took part in the programme or not. An odds ratio of one would mean that a programme participant had exactly the same odds of entering as a comparison pupil. An odds ratio above one means that a participant is more likely to enter, and an odds ratio of below one means that they are less likely.

Table 27: Estimated effect of TAP tuition on likelihood of progressing to a selective university, male students

Year		Lower CI	Estimate	Upper CI	No. students
2018	Super selective	1.14	2.50	6.02	180
	Highly selective	1.13	2.20	4.77	180
	Any top third	1.50	2.95	6.61	180
2019	Super selective	0.39	1.43	5.42	175
	Highly selective	0.82	2.07	4.80	175
	Any top third	0.81	2.04	4.83	175
2020	Super selective	0.75	1.74	4.72	270
	Highly selective	0.85	1.68	3.38	270
	Any top third	0.93	1.71	3.35	270
Pooled	Super selective	0.84	2.00	5.44	625

	Highly selective	0.93	1.90	4.04	625
	Any top third	0.98	1.96	4.15	625

Table 28: Estimated effect of TAP tuition on likelihood of progressing to a selective university, female students

Year		Lower CI	Estimate	Upper CI	No. students
2018	Super selective	1.08	3.15	9.89	245
	Highly selective	0.99	1.95	3.85	245
	Any top third	0.95	1.67	2.99	245
2019	Super selective	0.46	1.33	3.92	445
	Highly selective	0.46	0.75	1.35	445
	Any top third	0.60	1.03	1.79	445
2020	Super selective	0.53	1.22	3.14	385
	Highly selective	0.67	1.19	2.21	385
	Any top third	1.07	1.85	3.24	385
Pooled	Super selective	0.53	1.35	3.72	1075
	Highly selective	0.54	0.93	1.71	1075
	Any top third	0.77	1.33	2.33	1075

These results provide some evidence to support the hypothesis that TAP tuition has a positive impact on the likelihood of progressing to a top third university for male students.

As for all students, the results for the 2018 cohort are statistically significant for male students, indicating that male TAP students are more likely than their matched peers to be accepted to a top third, highly selective or super selective university.

However, for the other cohorts and for the pooled cohort, this evidence is not conclusive. Although the estimated odds ratios are all above one – indicating that TAP students are more likely than their matched peers to progress to a selective university – the lower confidence intervals are below one. This means that the estimated impact is not statistically significant.

For female students, there is also some evidence to support the hypothesis, although this is less clear. In general, the estimated impact on female students is lower than on male students.

Female TAP students from the 2018 cohort were significantly more likely to attend a super selective university, but not significantly more likely to attend a top third university then their matched peers. Female TAP students from the 2020 cohort were significantly more likely to attend a top third university, but not to attend a highly or super selective university. Estimates for other outcomes and cohorts are not significant, although the majority are above one. The pooled estimate for progressing to highly selective universities is below one, while the estimates for other selectivity levels are well above one.

The table below shows the predicted probabilities of TAP students and matched comparison students going on to enter a selective university. These probabilities may be easier to interpret than odds ratios.

Table 29: Predicted probabilities of TAP students and matched comparison students progressing to a selective university, male students

		Predicted probability		No. students	
Year		Treated	Comparison	Treated	Comparison
2018	Super selective	30%	18%	90	90
	Highly selective	48%	36%	90	90
	Any top third	72%	53%	90	90
2019	Super selective	16%	9%	85	85
	Highly selective	36%	20%	85	85
	Any top third	68%	50%	85	85
2020	Super selective	20%	13%	135	135
	Highly selective	37%	27%	135	135
	Any top third	68%	56%	135	135
Pooled	Super selective	21%	14%	310	310
	Highly selective	39%	28%	310	310
	Any top third	69%	54%	310	310

Table 30: Predicted probabilities of TAP students and matched comparison students progressing to a selective university, female students

		Predicted probability		No. students	
Year		Treated	Comparison	Treated	Comparison
2018	Super selective	12%	7%	125	125
	Highly selective	29%	22%	125	125
	Any top third	61%	51%	125	125
2019	Super selective	14%	11%	225	225
	Highly selective	31%	40%	225	225
	Any top third	63%	65%	225	225
2020	Super selective	14%	12%	190	190
	Highly selective	32%	29%	190	190
	Any top third	66%	52%	190	190
Pooled	Super selective	13%	8%	540	540
	Highly selective	31%	29%	540	540
	Any top third	64%	56%	540	540

The predicted probability of a male TAP student progressing to a top third university is 569, compared to 54% for a comparison student. For female students, the predicted probabilities are slightly lower: 64% for a TAP student compared to 56% for a comparison student.

For both genders, the predicted probabilities of a TAP student progressing to a selective university is higher than for a comparison student for almost every category.

5. Conclusions

5.1 Overview

We found evidence that the programme has a positive impact on both GCSE and A-Level grade in the tutored subject. We also found evidence of a slightly higher positive impact on Attainment 8 scores and scores across a student's best 3 A-Level subjects, suggesting that the programme has an impact on grades in subjects other than the tutored subject.

We would estimate that participants would achieve between 0.34 and 0.95 grades higher than a matched non-participant in their tutored GCSE subject, on average, and between 0.01 and 0.49 grades higher than a matched non-participant in their tutored A-Level subject, on average.

We found evidence to suggest that the programme has a stronger impact on male participants than female participants, and that it has a stronger impact on those participants who attended a high number (>20) of sessions. However, we did not find conclusive evidence to suggests that the programme has a higher or lower impact on those tutored in any particular subject, or that the impact varies by the number of years over which participants receive tuition.

The estimated impact varied somewhat across the years covered by the report, although there was no clear trend for impact either increasing or decreasing over time. The fact that the evaluation includes 2020, the first year in which public examinations were cancelled due to the pandemic, may have affected estimates for in that year.

However, broadly speaking, the findings in this report are similar to those in an earlier analysis that focuses on pupils who completed the relevant Key Stage in 2017/18.[6] Perhaps the biggest difference is that the earlier report did not find evidence of a significant impact on A-Level grade, while this report did, albeit with a lower confidence interval just barely above zero (0.01).

The outcomes relating to progression to university were not included in the earlier evaluation. In this analysis, we found evidence to suggest that TAP tuition has a positive effect on the likelihood of progressing to a top third university. Both the 2018 and 2020 cohorts were significantly more likely to do so. This effect was particularly strong for male students. However, we did not find significant effects on the 2019 cohort or when pooling results across all three cohorts.

We would note, however, that the results of a sensitivity analysis carried out using a different matching method did find statistically significant results for progression to a top third university for the 2019 cohort, albeit with the lower confidence interval only slightly above one. Therefore, this outcome may be particularly sensitive to the matching method used. The results obtained from the alternative method are included in an appendix.

5.2 Limitations

This evaluation uses a quasi-experimental design; it relies on creating a matched comparison group that is statistically similar to the programme participants, based on data from the NPD. Creating a comparison group in this way means that we are unable to

[6] *Evaluation of The Access Project tuition on attainment at GCSE and A-Level*, FFT Education Datalab (2020), accessed at https://ffteducationdatalab.org.uk/2020/09/the-access-project-evaluation-report/

control for factors not recorded in the NPD, for example pupil motivation, social class or parental occupation.

This evaluation looks at the outcomes separately. However, the fact that participants achieved higher A-Level grades than matched comparison pupils, on average, may explain some of the differences in likelihood to go on to enter a selective university, rather than the direct influence of the programme.

The timeframe of the evaluation includes the onset of the COVID-19 pandemic. This affected the way that grades were awarded in 2019/20. This may mean that pooled estimates, and estimates of the effect of the programme based on 2019/20, may not reflect the impact of the programme under normal circumstances. However, this is a limitation common to most evaluations of programmes delivered during this period.

Due to low sample sizes, we were unable to provide estimates of effect by subject for a number of subjects at both GCSE and A-Level.

Progression to a selective university is a relatively rare event. This means that the minimum detectable effect size is smaller for a given sample size than for other outcomes, and means that inconclusive results are more likely. Perhaps partly as a consequence of this, the analysis of this outcome may also be overly sensitive to the matching method used.

Finally, the analysis of progression to university may be highly sensitive to the definition of 'top third' or 'selective' universities. This may lead to difficulties when comparing this analysis with future evaluations if a different definition is used, or if and when some universities become more or less selective over time.

6. Appendices

6.1 Sensitivity analysis

In this section, we present results obtained for the 2019 cohort on the higher education outcomes using an alternative matching method. This is intended to be used as a robustness check to indicate whether the results are sensitive to the matching method used. In this instance, we used nearest neighbour matching as in the main body of the report, but based on Mahalanobis distance rather than on propensity scores.

The point estimates obtained using this method were fairly similar to those obtained in the main body of the report. However, the confidence intervals were narrower, resulting in the estimates for progression to selective and highly selective universities being statistically significant. The outcomes were not statistically significant using the methodology in the main analysis.

We also see some differences in the analysis broken down by gender. Under both the alternative and original matching methods, none of the results are conclusive, and in both, a higher impact is observed on male students. However, the difference between male and female students is lower under the alternative method; under this method, the observed impact on male students is lower, and the impact on female students higher.

These differences may indicate that this outcome is particularly sensitive to the matching method used, which means that results may be less reliable.

The table below shows the estimated effects obtained using this method. All counts shown in this section have been rounded to the nearest 5 students.

Overall

Table 31: Estimated effect of TAP tuition on likelihood of progressing to a selective university

Type		Lower CI	Estimate	Upper CI
Original	Super selective	0.60	1.34	3.05
	Highly selective	0.67	0.99	1.57
	Selective	0.81	1.29	2.03
Alternative	Super selective	0.69	1.12	1.74
	Highly selective	1.01	1.38	1.95
	Selective	1.03	1.41	1.90

Table 32: Predicted probabilities of TAP students and matched comparison students progressing to a selective university

		Predicted probability	
Type		Treated	Comparison
Original	Super selective	15%	11%
	Highly selective	33%	34%
	Selective	65%	60%
Alternative	Super selective	15%	13%
	Highly selective	33%	26%
	Selective	65%	57%

Gender

Table 33: Estimated effect of TAP tuition on likelihood of progressing to a selective university, male students

Type		Lower CI	Estimate	Upper CI
Original	Super selective	0.39	1.43	5.42
	Highly selective	0.82	2.07	4.80
	Selective	0.81	2.04	4.83
Alternative	Super selective	0.37	0.89	1.90
	Highly selective	0.78	1.42	2.58
	Selective	0.93	1.68	2.86

Table 34: Estimated effect of TAP tuition on likelihood of progressing to a selective university, female students

Type		Lower CI	Estimate	Upper CI
Original	Super selective	0.46	1.33	3.92
	Highly selective	0.46	0.75	1.35
	Selective	0.60	1.03	1.79
Alternative	Super selective	0.68	1.23	2.30
	Highly selective	0.90	1.37	2.10
	Selective	0.90	1.31	1.93

Table 35: Predicted probabilities of TAP students and matched comparison students progressing to a selective university, male students

		Predicted probability	
Type		Treated	Comparison
Original	Super selective	16%	9%
	Highly selective	36%	20%
	Selective	68%	50%
Alternative	Super selective	16%	9%
	Highly selective	36%	20%
	Selective	68%	50%

Table 36: Predicted probabilities of TAP students and matched comparison students progressing to a selective university, female students

		Predicted probability	
Type		Treated	Comparison
Original	Super selective	14%	11%
	Highly selective	31%	40%
	Selective	63%	65%
Alternative	Super selective	14%	11%
	Highly selective	31%	25%
	Selective	63%	57%

6.2 Selective university list

The list of universities defined as top third, and their tier, is shown below.

Table 37: Full list of top third universities by tier

University	Tier
Imperial College of Science, Technology and Medicine	Super Selective
London School of Economics and Political Science	Super Selective
University College London	Super Selective
University of Bath	Super Selective
University of Bristol	Super Selective
University of Cambridge	Super Selective
University of Durham	Super Selective
University of Oxford	Super Selective
University of St Andrews	Super Selective
University of Warwick	Super Selective
Courtland Institute of Art	Highly Selective
Glasgow School of Art	Highly Selective
Kings College London	Highly Selective
Newcastle University	Highly Selective
Royal Veterinary College	Highly Selective
St George's Medical School	Highly Selective
University of Birmingham	Highly Selective
University of Edinburgh	Highly Selective
University of Exeter	Highly Selective
University of Lancaster	Highly Selective
University of Leeds	Highly Selective
University of Manchester	Highly Selective
University of Nottingham	Highly Selective
University of Sheffield	Highly Selective
University of Southampton	Highly Selective
University of York	Highly Selective
Aston University	Selective
Cardiff University	Selective
Central School of Speech and Drama	Selective
City University	Selective
Goldsmiths College	Selective
Guildhall School of Speech and Drama	Selective
Herriot Watt University	Selective
Queen Mary University	Selective
Queens University of Belfast	Selective
Royal Academy of Music	Selective
Royal College of Music	Selective
Royal Conservatoire of Scotland	Selective
Royal Holloway	Selective
School of Oriental and African Students (SOAS)	Selective
University of Aberdeen	Selective
University of East Anglia	Selective

University of Glasgow	Selective
University of Kent	Selective
University of Leicester	Selective
University of Liverpool	Selective
University of Loughborough	Selective
University of Reading	Selective
University of Strathclyde	Selective
University of Surrey	Selective
University of Sussex	Selective