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Methodology and Results

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Authors: Ben Savours and Maria Rodriguez
15th January 2023

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Introduction

The National Tutoring Programme (NTP) provides government funding to primary and secondary schools for targeted academic support, delivered by trained and experienced tutors and mentors. Started in 2020 and now in its fourth year, the NTP was originally conceived as a post-covid policy to mitigate the negative educational effects of school disruption on those most affected. Since its inception, students have taken part in approximately 5 million courses.

Public First have been commissioned to carry out an economic impact study of the NTP.
To do this we have pulled together the existing evidence base and combined it with publicly available delivery data, along with data specifically provided for this project by tuition providers. This has allowed us to estimate the economic impact of the tuition provided by the NTP in the academic years 2021/22 and 2022/23, and in particular:

- The total impact on attainment through improved grades;
- The aggregate economic impact in the form of additional lifetime earnings, and;
- Increased tax revenues associated with the additional earnings.

This report first outlines the method used to carry out this analysis before summarising the results of our findings.

Methodology

Estimating the impact of the NTP on attainment

Our analysis first seeks to understand the impact that the tuition provided as part of the NTP has on GCSE grades. To do this we make use of meta-analysis carried out by the Education Endowment Foundation (EEF), which provides a summary of research into the effectiveness of small group tuition. This includes estimates of impact on attainment from over 60 academic studies and an assessment of the robustness of each piece of research. This is provided by subject and by key stage allowing us to use the most appropriate effect sizes in our calculations[1].

The effect size is presented as a standardised mean difference. We convert first from standard mean difference to months of additional progress, and then to the 1-9 GCSE grade scoring system. We do this using conversion factors provided by the EEF[2]. We then convert from this grading system to the old A* - U GCSE grading system by assuming the 9 grades of the new system map evenly to the 8 grades of the old system. This provides us with an estimate of the proportion of an 'old' GCSE grade by which students are expected to improve.

To calculate the total number of students that improve by a grade we assume a continuous uniform distribution of scores between grades. As such our estimate is the same as our

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[1] Note: due to the limited number of KS4 maths studies we use a combined KS2 and KS4 estimate of maths impact
[2] Source:

estimate of the proportion of a GCSE grade by which students are expected to improve. We apply this proportion to the total number of students who received tuition to calculate the total numbers of students who improve by a grade.

Estimating the economic impact of the NTP through higher lifetime earnings

Next, we estimate the economic impact of improved attainment associated with the NTP in the form of additional lifetime earnings. To do this we apply estimated earnings returns contained in research carried out by the Department for Education[3]. This provides estimates of the marginal returns in discounted lifetime earnings associated with an improvement in GCSE grade, by subject. By applying this to the total number of grade improvements we estimate the aggregate return in discounted lifetime earnings[4].

Estimating the impact on the Exchequer through additional tax

Finally, we estimate the tax receipts that will be generated by the additional lifetime earnings. To do this we use HMRC receipts data that provides the total income tax, national insurance and VAT collected in 2021[5]. We then calculate each of these as a share of the total taxable income, data again provided by HMRC[6]. Finally, we apply these percentages to our estimates of additional discounted lifetime earnings to calculate additional tax.

Results

Impact on attainment

The economic modelling carried out as part of this report estimates that the NTP will lead to, or has already led to, a total of 390 thousand grade improvement due to tuition provided by the NTP in the academic years 2021/22 and 2022/23[7]. In total 2.96 million students received an average of 11 hours of tutoring, and 12.1% of students who received tuition have improved, or are expected to improve, by a grade[8]. This means that for every £1 million spent on the NTP over 580 students experience a grade improvement.

English tuition is responsible for 176 thousand grade improvements, or 46% of the total. This is higher than the 40% of tuition provided in this subject, which is explained by the higher average grade improvement made of English tuition. Chart 1 compares the number of

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[3] Source: GCSE attainment and lifetime earnings, DfE, 2021
[4] Note: Lifetime earnings are discounted by 3.5% as per HMT Greenbook guidance and estimates given in 2021 prices
[5] Source: Tax receipts and national insurance contributions for the UK, HMRC
[6] Source: Shares of total income and income tax for percentile groups, HMRC
[7] Note: KS4 students are likely to have already taken their GCSEs whereas KS2 students won't have
[8] Source: NTP delivery data, DfE

students who received each type of tuition by subject and key stage with the number of grade improvements made. Although maths tuition at both key stages is more common than English, KS2 English provides the highest number of grade improvements. For every £1 million spent on KS2 English, an estimated 850 students improve their GCSE grade.
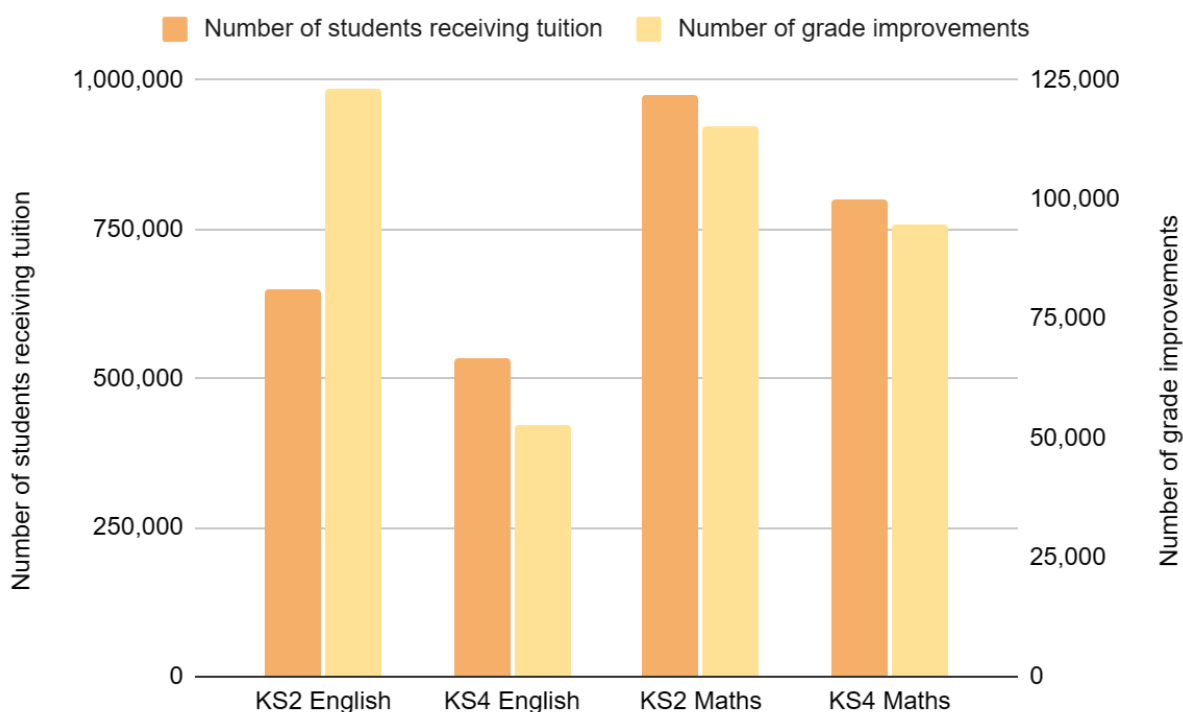

Chart 1: NUmber of students and grade improvements, by type of tuition

Impact on earnings

The additional discounted lifetime earnings resulting from tuition provided in 2021/22 and 2022/23 is estimated at £4.34 billion[9]. The funding during this period is estimated as £660 million which leads to a benefit cost ratio of 6.58[10]. The average cost of providing 11 hours of tuition for each student was £223 for an average return of £1,470.

The total additional earnings from maths tuition is £3.06 billion. This is 70% of the total additional earnings and is significantly higher than the share of students who received maths tuition, at 60%. This is due to the higher return in earnings for improvements in maths attainment; an additional grade in maths GCSE has a return in discounted lifetime earnings of £14,580 compared to £7,260 for English.[11] Chart 2 compares the results for English and maths tuition of: The total numbers of students; the total number of grade improvements; and the total additional lifetime earnings. This shows that although the high grades impact of English

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[9] Note: In 2021 prices and using a discount rate of 3.5%
[10] Source: UK Parliament written questions and answers
[11] Source: GCSE attainment and earnings, DfE, 2021

tuition leads to proportionally higher grade improvements, that the very high earnings returns to maths improvements ultimately leads to a higher return to maths tuition.
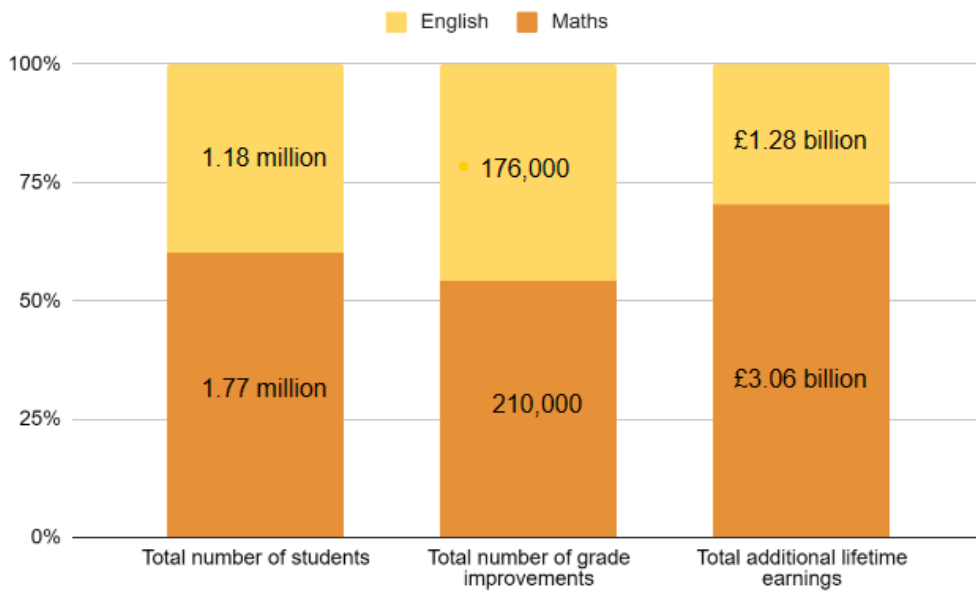

Chart 2: Total number of students, grade improvements and additional earnings, by subject

Impact on the Exchequer

Our estimate of the total additional tax collected by the Exchequer due to the increase in earnings is: £775 million in income tax; £554 million in national insurance, and an estimated £499 million in value added tax through additional consumer spending. This is a total gain to the Exchequer of approximately £1.83 billion, which more than covers the £660 million cost of the programme.