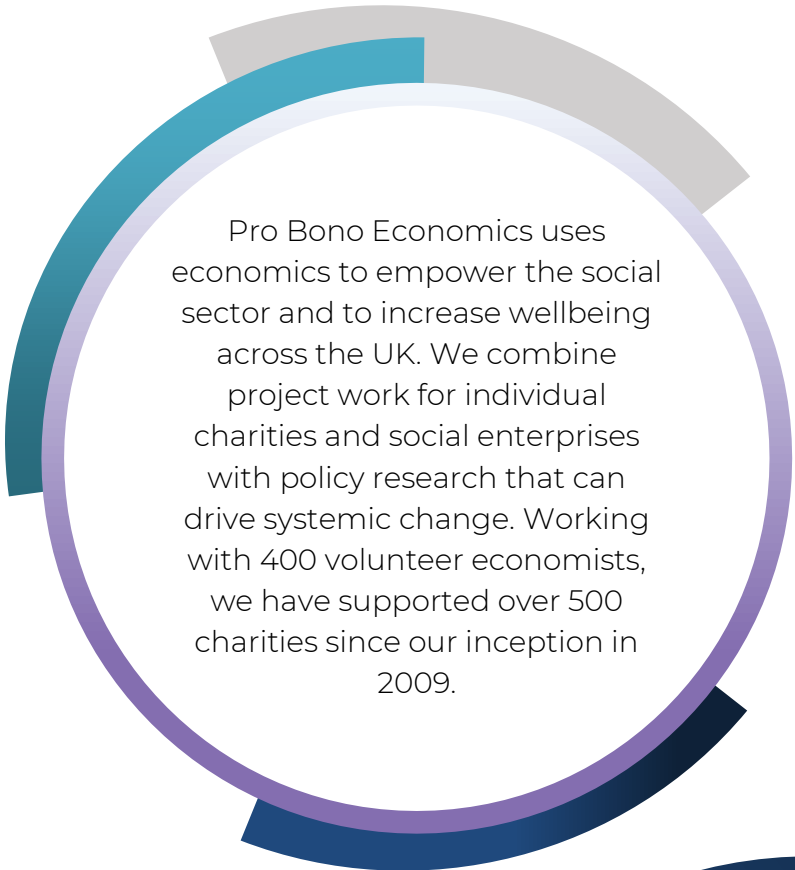





# Inspiring success? The economic case for delivering external talks in secondary state schools

A report for Speakers for Schools in association with Sadia Sheikh

June 2023



Pro Bono Economics uses economics to empower the social sector and to increase wellbeing across the UK. We combine project work for individual charities and social enterprises with policy research that can drive systemic change. Working with 400 volunteer economists, we have supported over 500 charities since our inception in 2009.




Speakers for Schools is a leading social mobility charity with a clear mission to help level the playing field for young people of all backgrounds, increasing access to the same prestigious networks available to the top fee-paying schools in the UK. It provides talks from influential figures as well as work experiences linking state school students to hundreds of the UK's leading employers.



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## Summary

Speakers for Schools aims to mitigate inequalities between state and independent school outcomes through a range of initiatives, one of which is its Inspiration programme. This intervention brings influential speakers to state secondary schools with the goal of inspiring pupils and providing them with useful career advice. This is to ensure that pupils in the state system do not miss out on opportunities to interact with and benefit from the guidance of inspiring professionals relative to their independent school peers. This report builds the economic case for the delivery of this programme by calculating its potential monetary benefit and comparing this with the cost of its delivery.

The key findings are:

- Building on evidence from research linking career talks in school and wages at age 26, it is estimated that students who participate in career talks during Year 10 enjoy a wage premium of 0.4% over similar peers who do not attend such talks.
- If the Inspiration programme has a similar impact on earnings, then this could mean an average uplift in cumulative pay up to the age of 26 of around £320 for each pupil.
- For an average state-funded secondary classroom size of 28 in 2021, this amounts to a cumulative benefit of nearly £9,000 per class.
- The study's scenarios suggest that the Inspiration programme would need to deliver just 9% of these wage benefits to outweigh the costs.
- If pupils benefiting from the Inspiration programme enjoy just half of the potential gains associated with career talks that have been identified in previous research, the programme would deliver £3.6 million in the form of increased wages up to the age of 26 for each cohort in question.

Overall, the findings show that the Inspiration programme has potential to be cost-effective. While this core conclusion does not change with varying underlying assumptions - i.e., on the number of pupils benefitting from the intervention and on the proportion of the wage uplift enjoyed by participants - the wide range on each of these key assumptions makes it necessary to consider a potential range of monetary benefits, rather than pinpoint an exact number.

An important caveat to note is that the findings of the underlying research linking career talks to increased wages, which forms the basis of this analysis, shows a consistent wage uplift attributed to speaker talks for Year 10 pupils, but not for Year 11 pupils. In Year 11, a wage premium was observed only for pupils who rated talks as being 'very helpful'. While this is likely due to the fact that in this particular year group there are significant competing demands on pupils' attention and focus related to exam preparation - and only very carefully crafted talks would occupy pupils' attention enough have a lasting impact - the lack of consistent evidence for pupils just one year older suggests that the findings should be interpreted with some degree of caution.

Despite the limitations, this study adds to a wider body of evidence demonstrating a positive relationship between career talks and pupil outcomes. There may be wider social benefits too. Providing state school pupils' better access to professional networks and career information could help narrow existing gaps in their aspirations and eventual outcomes compared to independent school pupils.

Over  
**100,000**

pupils benefit from the  
Inspiration programme  
each year

If the Inspiration programme  
delivers similar benefits to those  
seen for other career talk  
programmes, it could lead to a  
cumulative wage uplift of up to

**£328**

per pupil  
up to age 26

The Inspiration programme  
needs to deliver less than

**9%**

of the wage uplift seen in other  
evidence on the impact of  
career talks to make it a cost-  
effective intervention

If the programme delivers  
even half the wage uplift  
seen in other evidence for  
career talks, the total  
annual benefits of the  
programme exceed

**£3.6  
million**

## Introduction

Limited school budgets mean that few state-run schools are able to allocate adequate resources to invite external speakers to engage with pupils. In 2019, just 14% of state schools had an allocated budget for outside talks.<sup>1</sup> <sup>2</sup> This means that pupils in the state system potentially miss out on opportunities to be inspired by the stories of successful professionals and raise their aspirations relative to their independent school counterparts who have better access to such talks.<sup>3</sup> Visiting speakers can excite pupils about the subjects they are studying, show them a range of career routes and inspire them to overcome the challenges and obstacles that may face them in their lives and careers. They can provide a form of 'social capital' - giving pupils access to a wider network of professionals than they might have in their family-based social networks.<sup>4</sup> Such social capital can be crucial in helping form students' attitudes and expectations about their future path and careers. Existing inequalities in outcomes between state and independent schools may thus be perpetuated by the lack of state funding allocated to such motivational talks in secondary schools.

A 2017 survey of pupils across state and independent schools observed a difference in perceptions around the helpfulness of school-mediated employer engagements: 43% of independent school pupils found these to be helpful, while the equivalent proportion for state school pupils was just 29% - highlighting a clear difference in students' perceptions around the quality of provision they accessed. Within the state sector, pupils from financially disadvantaged backgrounds and females could benefit from access to additional career information and role models that they may otherwise not have in their own social circles.

Speakers for Schools aims to mitigate such inequalities by offering secondary school pupils (Key Stage 3 up through college) in the state system access to two main programmes with the goal of inspiring students through interactions with successful individuals and employers. These are the Inspiration programme, which brings influential speakers to schools, and the Experience programme, which connects students to employers for experiences of the world of work. This report focuses on the Inspiration

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<sup>1</sup> C Percy et al., [Insights and Inspirations: Exploring the impact of guest speakers in schools](#), Education and Employers, October 2019.

<sup>2</sup> Despite lack of an officially allocated budget, some state schools can and do rely on volunteer guest speakers to supply this provision.

<sup>3</sup> P Huddleston et al., [Employer Engagement in English Independent Schools](#), Education and Employers Taskforce, July 2012.

<sup>4</sup> C Raffo & M Reeves, [Youth Transitions and Social Exclusion: Developments in Social Capital Theory](#), Journal of Youth Studies, 3(2), August 2010.

programme and calculates the monetary benefits this generates through its potential to increase future earnings of participants in the early years of their careers (up to age 26). It also compares these benefits with the cost of its delivery to establish whether Speakers for Schools provides 'value for money' in the provision of its Inspiration programme.

How might external speakers improve pupil and social outcomes?

### The Inspiration programme

The **Inspiration programme** was launched in 2010 and since its inception has reached over 1.1 million pupils via 8,500-plus talks. It connects state secondary schools and colleges with prominent leaders of industry or society for impactful school talks. Students benefit from the opportunity to be inspired by and gain insights from influential, well-connected individuals perceived to be shaping the world. Talks are typically a one-hour assembly-style event followed by a Q&A session.

Existing evidence explores whether external talks can positively influence pupil attitudes and provide them with useful information to make more informed career decisions. In this section, the study touches upon the key themes that emerge in the literature to set the context for the quantitative study that follows and to understand why career talks could be important from both a pupil and policy perspective.

### Career talks positively shape pupil attitudes, motivation and confidence

Expanding pupils' networks to include a more varied set of professionals than they would otherwise be exposed can build 'cultural capital' - a concept now included in Ofsted's new inspection framework launched in September 2019 – which refers to the skills, knowledge and behaviours used to gain an advantage in life.<sup>5</sup> Engaging with potential role models, such as external speakers, can help pupils challenge pre-existing attitudes about their future path, develop their confidence, build resilience, provide motivation and elevate their aspirations.<sup>6</sup> A survey conducted by Speakers for Schools shows that 91% of young people believe that external talks had helped positively shape their attitudes, motivations and beliefs.<sup>7</sup> These

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<sup>5</sup> C Raffo & M Reeves, [Youth Transitions and Social Exclusion: Developments in Social Capital Theory](#), Journal of Youth Studies, 3(2), August 2010.

<sup>6</sup> V Skorikov & F Vondracek, [Occupational Identity](#), in S Schwartz et al. (eds.), Handbook of Identity Theory and Research, January 2011.

<sup>7</sup> C Percy et al., [Insights and Inspirations: Exploring the impact of guest speakers in schools](#), Education and Employers, October 2019.



influences were particularly pronounced in pupils who had initially been the least engaged.

### External speakers are potentially viewed as a trustworthy source of information when considering future career choices

Access to a variety of external speakers can introduce pupils to career choices they might not have otherwise considered or even been aware of. Studies show that careers information obtained directly from professionals and employers is perceived to be of more value to young people than similar information gathered from personal networks, such as parents, friends or from online sources.<sup>8</sup> This suggests that the type of person who delivers the information can be as important as the content itself. The Speakers for Schools survey shows that 93% of teachers felt that guest speakers broadened pupils' horizons about potential jobs. Overall, 82% of the 633 students surveyed in the same study stated that the talks had raised their awareness of a new career or industry.

### Some studies note a correlation between talks and improved academic outcomes

Engaging with high-achieving professionals, especially those who give talks directly linked to the curriculum, can motivate pupils to achieve better academic results. A three-year research project exploring the link between type of guest speaker and GCSE results, conducted in the run up to the examinations, shows an improvement in academic outcomes.<sup>9</sup> Pupils who attended three speaker talks recorded a 9% higher increase in weekly revision hours compared to peers in the control group, which may have contributed to their outperformance compared to their predicted grades in English, maths and science. In addition, external speakers can be viewed by pupils as a trusted source of information on the nuances of the modern workplace, the skills and competencies required for professional success and a competitive recruitment process.

### Pupils from disadvantaged backgrounds can benefit from access to role models otherwise not in their personal networks

Given that exposure to a network of successful role models can elevate pupils' aspirations and influence pre-existing attitudes towards their career pathway, the impact could be greater for those from financially disadvantaged backgrounds who may not have access to such role models in their personal networks. Pupils on free school meals showed greater

<sup>8</sup> A Mann & S Caplan., [Closing the Gap: How Employers Can Change the Way Young People See Apprenticeships](#), Education and Employers Taskforce, 2012.

<sup>9</sup> E Kashefpakdel, C Percy & J Rehill, [Motivated to Achieve: How encounters with the world of work can change attitudes and improve academic attainment](#), Education and Employers, June 2019.

improvements in measures of self-efficacy and confidence than other pupils.<sup>10</sup> Female students also reported more positive attitudes and greater confidence with each extra talk compared to male peers.

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<sup>10</sup> C Percy et al., [Insights and Inspirations: Exploring the impact of guest speakers in schools](#), Education and Employers, October 2019.

## Methodology

This study analyses the Speakers for Schools Inspiration programme for the academic year 2018/19. Although data for more recent years (2019/20 and 2020/21) exists, the delivery of the Inspiration programme over these years was disrupted, as sessions moved online due to the Covid pandemic. Since the published evidence used as the basis of the analysis was originates from in-person sessions, this analysis used data for 2018/19 because this captures the most recent full academic year of in-person delivery of the Inspiration programme.<sup>11</sup>

This study's review of the current evidence shows that the bulk of research linking school-mediated employer engagements to eventual employment outcomes in the UK focuses on initiatives such as work placements, enterprise activities, mentoring etc., rather than on employer talks. In addition, these studies make use of contemporary survey data to reach their conclusions, rather than looking at longitudinal studies that would yield more reliable findings. To develop a meaningful methodology, this research has identified a seminal study that satisfies the core requirements of longitudinal data analysis of the specific impact of speaker talks in the UK. The Kashefpakdel and Percy (2017) study relied on in this report uses the British Cohort Study 1970 to examine the link between career talks by external speakers and employment outcomes.<sup>12</sup> This study, while controlling for factors such as academic performance, socio-economic status, home learning environment and demography (e.g. gender and ethnicity), finds that pupils who participated in more career talks in Year 10 (ages 14–15) enjoyed better employment outcomes at age 26. This is captured by a wage premium of 0.8% for those in full-time employment.

PBE's study follows the analytical framework shown in three steps below (and in Figure 1) to calculate the value and cost-effectiveness of the Speakers for Schools' Inspiration programme in academic year 2018/19.

**Step 1 - Estimate the unique number range of Year 10 pupils on the Inspiration programme in 2018/19:**

Speakers for Schools collects data on the number of attendees for most talks. However, some schools had multiple talks and some pupils attended multiple talks. This means that to estimate the number of unique Year 10 pupils who attended the Inspiration programme, this study needs to make

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<sup>11</sup> E Kashefpakdel & C Percy, [Career education that works: An economic analysis using the British Cohort Study](#), Journal of Education and Work, 30(3), April 2016.

<sup>12</sup> E Kashefpakdel & C Percy, [Career education that works: An economic analysis using the British Cohort Study](#), Journal of Education and Work, 30(3), April 2016.

two key assumptions: the first is around the proportion of pupils who attended multiple talks (to avoid double counting), and the second is around the proportion of Year 10 pupils in attendance. It is estimated that between 22,142 and 32,292 unique Year 10 pupils attended the Inspiration programme in 2018/19. Detailed information on how these numbers are calculated is provided in Annex A.

### Step 2 - Estimate the potential wage uplift for Year 10 pupils on the Inspiration programme in 2018/19 if they experience the same benefits as seen in other studies of careers talks:

To calculate any wage uplift associated with the attendance of external speaker talks, PBE's research refers to the Kashefpakdel and Percy (2017) study, which finds that pupils who participated in more career talks in Year 10 had higher earnings at age 26 over similar peers who did not attend such talks.<sup>13</sup> By adjusting the wage premium to more accurately reflect the impact of this intervention, this study estimates that participating in the Inspiration programme is associated with a 0.4% increase in earnings up to 26 years old. The calculation of this impact is discussed in Annex B. As data from the ONS shows the average cumulative earnings up to age 26 is approximately £82,000, the potential wage uplift per pupil is calculated to be £328.<sup>14</sup> More information on these estimates is also provided in Annex B.

### Step 3 - Estimate range of potential benefit-cost ratios (BCRs) of the Inspiration programme in 2018/19:

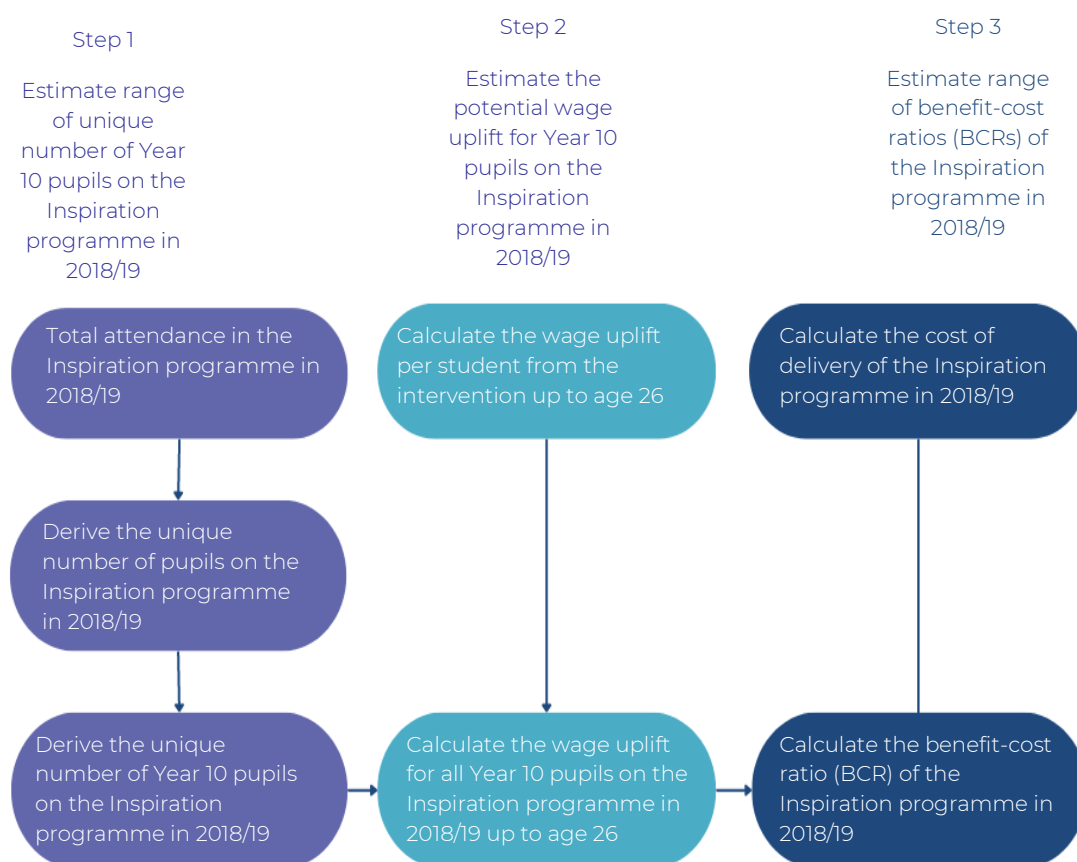
The information derived in Step 1 and Step 2 can be used to estimate the potential benefits of the Inspiration programme. To reflect the uncertainties inherent in the analysis, a range for total monetary benefits associated with varying assumptions on two measures is presented: first, the number of unique pupils on the programme and, second, the proportion of the previously estimated 0.4% wage uplift pupils might enjoy based on evidence on similar interventions. This estimated range of benefits is then compared with the full economic costs of the programme to derive associated BCRs.<sup>15</sup> The results show that, even under more conservative assumptions, every pound spent on the Inspiration programme yields a positive return. The calculation of the costs and benefits is given in Annex C and the findings are discussed in the next section.

<sup>13</sup> E Kashefpakdel & C Percy, [Career education that works: An economic analysis using the British Cohort Study](#), Journal of Education and Work, 30(3), April 2016.

<sup>14</sup> Office for National Statistics, [Earnings and hours worked, age group: ASHE Table 6](#), 2022.

<sup>15</sup> The ratio captures the economic return (i.e. social and individual economic benefits) to an initiative rather than a financial return to an investment.

Figure 1: Analytical framework to compare the benefits of the Inspiration programme with the cost of its delivery.



### Limitations of approach

There are some limitations to the approach taken:

- The monetary benefits calculated vary depending on the underlying assumptions. One refinement in future analyses would be to eliminate the uncertainty around the number of unique pupils by collecting data on the number of pupils who undertake the programme, rather than (or alongside) the number of attendances per talk.
- This report relies on Kashefpakdel and Percy (2017) to estimate the wage uplift of attending speaker talks at school. A limitation of the study - which it acknowledges - is that no direct controls were applied for school-level influences.<sup>16</sup> This is important because schools that lead the way in organising frequent external speaker talks are also more likely to be engaged in other activities that also support better pupil outcomes. While it is acknowledged that other social, regional and

<sup>16</sup> A teachers' strike in 1986 reduced sample coverage for school-level data to around a third and accounting for this would have significantly reduced the sample size.

individual factors have been controlled for, which would partly offset the effect of 'school type', it is still necessary to make a downward adjustment to the returns to account for this lack of a direct control.

Kashefpakdel and Percy (2017) found a wage uplift for Year 10 pupils who attend speaker talks. However, a consistent wage uplift was not observed in Year 11 pupils who had access to the same talks. In Year 11, a wage premium was observed only for pupils who rated talks as being 'very helpful'. While this is likely due to the fact that in that particular year group there are significant competing demands on pupils' attention and focus related to exam preparation - and only very carefully crafted talks would get pupils' attention enough to have a lasting impact - the lack of consistent evidence for pupils just one year older suggests that the findings should be interpreted with some degree of caution.

## Key findings

The objective of this study was to explore the potential monetary benefits of Speakers for Schools' Inspiration programme through its possible impact on future earnings of participants during the early years of their careers (up to age 26) and compare these benefits with the cost of its delivery. This study finds that:

- Building on evidence from comparable interventions, it is estimated that students who participate in career talks during Year 10 could enjoy a wage premium of up to 0.4% over similar peers who do not attend such talks at age 26.
- If the Inspiration programme has the same impact on earnings as evidence from similar interventions suggests, there would be an average uplift in cumulative pay up to the age of 26 of around £320 for each pupil.<sup>17</sup> For an average state-funded secondary classroom size of 28 in 2021, this amounts to a cumulative benefit of nearly £9,000 per class.<sup>18</sup>
- The scenarios in this study suggest that even under the most conservative assumptions, the Inspiration programme would need to deliver just 9% of the wage uplift seen in similar interventions for its benefits to outweigh the costs.
- If the programme achieves even half the wage premium associated with career talks outlined in previous research (discussed above), its total monetary benefits are estimated to be £3.6 million per year. This means that if pupils who stand to benefit from the programme enjoy even half the potential gains, the programme delivers £3.6 million in the form of increased earnings up to age 26 for the cohort in question.

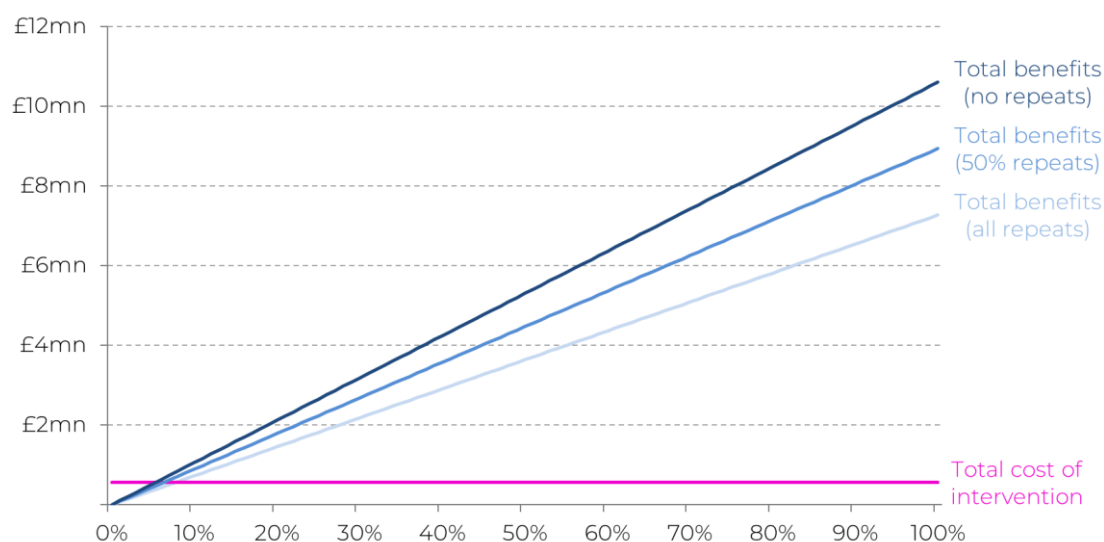
Under most scenario assumptions, the monetary value of the programme exceeds its economic costs. Even under fairly conservative assumptions—that only 25% of the wage uplift seen in other studies is enjoyed by Inspiration programme participants and all students are repeat attendees—the programme yields a positive BCR of at least £3. Anything over £1 indicates there are net positive economic returns to the intervention.

<sup>17</sup> PBE analysis using data of gross annual employee pay from: Office for National Statistics, [Earnings and hours worked, age group: ASHE Table 6](#), 2022.

<sup>18</sup> PBE analysis using data of gross annual employee pay from: Department for Education, [Schools, pupils and their characteristics, Academic year 2021/22](#), June 2022. This figure assumes that all the improvements in wages estimated in previous research are experienced by participants.

Figure 2 below shows the range of benefits, depending on the proportion of the 0.4% wage uplift, found in previous research, experienced by Speakers for Schools participants and the number of unique participants.

Figure 2: There is a difference of £3.3 million between the upper and lower ends of the monetary benefits range.



Total benefits (£m) and costs (£m) in 2018/19 (in 2021 prices) given different proportions of the 0.4% wage uplift found in previous research.

Notes: The analysis in this report focuses solely on one aspect of economic benefit, i.e., an uplift in wages up to age 26 for individuals on the Inspiration programme. There are likely to be other private and social benefits in addition to this selected metric but the inclusion of which is beyond the scope of this study. This would typically include private benefits such as enhanced earnings beyond the age of 26, a higher likelihood of gaining employment, career satisfaction and wellbeing etc., as well as social benefits such as increased taxes to the Exchequer as a result of higher employment and earnings and lower spending on benefits. Exploration of such additional factors might be of interest in future studies evaluating the benefits of the programme.



### Looking ahead: a hybrid model of delivery

In academic years 2019/20 and 2020/21, the delivery of the Inspiration programme was forced to move online for large parts of the academic year due to the Covid pandemic. Early analysis of the data (by Speakers for Schools) for these years and the positive feedback received from pupils and speakers suggests that this move to virtual talks was not disruptive. In fact, it allowed wider coverage for the talks (i.e., more attendees could join from multi-sites) and lowered costs by reducing the time and money spent on travel by speakers. As a result of this success, Speakers for Schools has decided to maintain its programme of virtual talks and broadcasts alongside traditional in-person talks.

A recent YouGov survey commissioned by Speakers for Schools in March 2022 on a sample of 2,098 18-30-year-olds recalling their experiences of virtual or hybrid talks at school suggested that both modes were equally effective (*forthcoming Speakers for Schools report, 2022*). Some feedback from pupils is below:

*"As long as the content is the same it ought not matter."*

*"They all will convey the same information, the delivery of it doesn't matter."*

*"Both allow flexibility in learning at your own time."*

*"I'm there for the content, not the participation, so it didn't make a difference."*

*"Both are worthwhile and digital communication is more important in a post-Covid world."*

*"Mostly the information is the most important factor and this can be communicated similarly virtually and in person."*

*"Virtual events can help develop digital skills, while hybrid events help develop more personal skills - both are essential."*

### Feedback from pupils

Thus, qualitative feedback certainly seems to suggest that virtual guest speaker talks are as effective as in-person sessions, although this assertion has not yet been tested empirically. If virtual talks are indeed equally impactful, this could vastly increase the benefits of the intervention via wider coverage of pupils and also reduce the cost of its delivery. This would make the Inspiration programme an even more cost-effective and wide-reaching intervention, which can be used to improve pupils' academic and career outcomes and improve social mobility.

## Conclusion

This report explores the economic case for the delivery of a programme of external talks in state secondary schools. It calculates the total monetary benefit of Speaker for Schools' Inspiration programme using evidence from other similar interventions and compares this with the cost of its delivery to determine whether the programme is cost-effective.

This analysis shows that if the Inspiration programme delivers even half the wage uplift associated with career talks in previous research, the total monetary benefits can be up to £3.6 million per year. This study finds that the programme needs to deliver just 9% of the wage uplift seen in similar interventions for its benefits to outweigh the costs.

While encouraging, these findings do come with some caveats. First, the estimates of monetary benefits vary widely depending on what assumptions are made around the number of unique pupils attending the talks and what proportion of the estimated 0.4% wage uplift is enjoyed by participants of the Inspiration programme. A second caveat is that the Kashefpakdel and Percy (2017) study, which forms the basis of this analysis, shows a wage uplift associated with speaker talks for Year 10 students, but not for Year 11 pupils who had access to the same talks. This lack of consistent evidence for pupils just a year older suggests that the findings may need to be treated with some degree of caution.

Despite these limitations, the results suggest that the Inspiration programme is potentially cost-effective and can improve pupil outcomes in terms of better labour market opportunities. It could also have wider social benefits in terms of reducing economic inequalities and providing better opportunities to disadvantaged groups, although this has not been empirically tested in this report.

Finally, it is worth noting that the analysis has been done using data on traditional in-person talks. Since 2020, Speakers for Schools has expanded its mode of delivery to include virtual talks and broadcasts, alongside on-site guest speakers. Initial survey feedback suggests that this hybrid mode of delivery is as effective as a traditional in-person programme, although this has not yet been empirically tested. If virtual talks indeed prove equally impactful, this can further increase the benefit of the intervention via a wider coverage of pupils and reduce the cost of its delivery.

## Annex A: Estimating the number of unique Year 10 pupils on the Inspiration programme

Headline data from Speakers for Schools shows that the total number of attendances of the Inspiration programme in 2018/19 was 149,263. In total, there were 1,228 talks delivered by 770 speakers across 842 schools. The first three columns in Figure A1 shows how these talks were split over the schools: 552 schools organised only one talk, while one school organised six talks.

Figure A1: Number of talks and attendances in 2018/19.

Number of talks	Number of schools	Total talks	Estimate of total attendances
1	552	552	63,594
2	217	434	50,000
3	54	162	18,664
4	16	64	7,373
5	2	10	1,152
6	1	6	691
Total	842	1,228	141,474

However, parts of the underlying detail are missing as fuller information is provided by only 180 schools of the 842, with data also missing on some talks for schools that had multiple sessions. Also, where the number of pupils per talk (attendances) has been provided, it does not record whether the same pupils attended second or subsequent talks.

The study must therefore estimate the total number of attendances by using the partial data set to calculate the *average number of pupils attending a talk* and then multiplying this by the *total number of talks* from headline numbers.<sup>19</sup>

$$\text{Total number of attendances by talk} = \text{Total number of talks} \times \text{Average number of pupils per talk}$$

PBE's study calculates the average number of pupils per talk to be 115.2, which is used to estimate the total number of attendances as given in fourth column of Figure A1.<sup>20</sup>

The *estimate* of the total number of attendances in the programme in 2018/19, using the partial underlying detail, is 141,474. Note that this is only

<sup>19</sup> We assume that this subsample of 180 schools reflects the full sample.

<sup>20</sup> While this average number masks considerable variation in attendance across talks, the mode and median of the distribution are both not too dissimilar at 100.

7,800 less than the *actual* number of attendances in the year of 149,263, as officially published by Speakers for Schools. Given this is a close enough match, the study can use the proportions from the estimated total to generate the unique number of pupils attending talks consistent with the published headline totals.

Figure A2 shows that if all estimated attendances were by unique attendees (with no repeats), then the number of unique pupils would simply be 100% of all attendances. At the other extreme, if all pupils in talks were repeats, then 69% of all attendances would reflect unique students.<sup>21</sup> A moderate assumption between these two extreme cases (50% repeats in second and subsequent talks) has also been calculated for illustrative purposes which shows that 84% of all attendances would reflect unique students.<sup>22</sup> These calculated percentages are used to generate the unique number of attendees in these three scenarios consistent with the headline figure of 149,263 provided by Speakers for Schools, as shown in the final row of Figure A2.

Figure A2: Deriving the unique number of attendees at talks in 2018/19.

# of talks	Estimated total attendances	Unique attendees if no repeats	Unique attendees if all repeats	Unique attendees if 50% repeats
1	63,594	63,594	63,594	63,594
2	50,000	50,000	25,000	37,500
3	18,664	18,664	6,221	12,442
4	7,373	7,373	1,843	4,608
5	1,152	1,152	230	691
6	691	691	115	403
<b>Total</b>	<b>141,474</b>	<b>141,474</b>	<b>97,004</b>	<b>119,239</b>
Unique attendees as a % of total <i>estimated</i> attendances		<b>100%</b>	<b>69%</b>	<b>84%</b>
Using estimated proportions to generate the unique number of attendees from published headline data		$(1 \times 149,263) =$ <b>149,263</b>	$(0.69 \times 149,263) =$ <b>102,345</b>	$(0.84 \times 149,263) =$ <b>125,804</b>

<sup>21</sup>  $(63,594/1) + (50,000/2) + (18,664/3) + (7,373/4) + (1,152/5) + (691/6) = 97,004$  of 141,474.

<sup>22</sup> For example, for the 50,000 attendances across 2 talks, the first talk would have had 25,000 unique attendees. For the second it was assumed that half the of 25,000 attendees would be unique and the other half would be repeats. Hence, the number of total unique pupils is  $25,000 + 12,500 = 37,500$ .

A second factor to consider is that the study only shows a consistently positive relationship (that is statistically different from zero) between external speaker talks and better labour market outcomes for students of Year 10 (aged 14-15).<sup>23</sup> To apply the findings of the study, therefore, the number of unique Year 10 students who attended the Inspiration programme in 2018/19 needs to be extracted from the overall total.

Speakers for Schools estimate that about 20% of pupils attending talks fall into this age range. Department for Education (DfE) data also estimates that the proportion of Year 10 pupils out of the total secondary school population in 2018/19 was 21.6%, not too dissimilar to the proportion reported by Speakers for Schools.<sup>24</sup> Hence, the study takes 20% of the total number of unique students who attended Speakers for Schools talks in 2018/19 to obtain a lower and upper bound for the number of unique Year 10 pupils who attended these talks, as shown in Figure A3.

Figure A3: Estimates of the number of unique Year 10 pupils who attended Speakers for Schools talks in 2018/19 under varying assumptions.

	All repeats	50% repeats	No repeats
Unique number of pupils from all years	102,345	125,804	149,263
Unique number of Year 10 pupils	22,142	27,217	32,292

We estimate that between 22,142 and 32,292 unique Year 10 pupils attended the Inspiration programme in 2018/19.

<sup>23</sup> In Year 11, a wage premium was observed only for pupils who rated talks as being 'very helpful'. While this is likely due to the fact that in that particular year group there are significant competing demands on pupils' attention and focus related to exam preparation, and only very carefully crafted talks would get pupils' attention enough have a lasting impact, the lack of consistent evidence for Year 11 pupils leads us to exclude them from the analysis.

<sup>24</sup> Department for Education, [Education and training statistics for the UK, Reporting year 2022](#), November 2022.

## Annex B: Calculating the average wage uplift for Inspiration programme participants

The Office for National Statistics (ONS) provides data on average annual gross pay for full-time employee jobs by age as given in Figure B1.<sup>25</sup> There are three adjustments made in PBE's study before summing up earnings between ages 19 and 26 to estimate total earnings up to age 26.

- ONS estimates that the average young person leaves full-time education at 19.3 years. Therefore, the study adjusts earnings at age 19 by using 0.7 times the annual earnings at that age.
- Not all pupils will go on to employment and enjoy a wage premium. Therefore, the study uses the employment rate to only include those who will go on to work.<sup>26</sup>
- Finally, future earnings are discounted by 3.5%.<sup>27</sup>

Figure B1: Calculating average annual wage growth (2021 prices).

Age (years)	Average earnings (ONS)	Employment rate (ONS)	Average earnings after discounting* and accounting for unemployment
19	£8,593	62%	£4,514
20	£12,275	62%	£6,231
21	£12,275	62%	£6,020
22	£25,997	62%	£12,319
23	£25,997	62%	£11,903
24	£25,997	62%	£11,500
25	£25,997	85%	£15,064
26	£25,997	85%	£14,555
Average earnings up to age 26			<b>£82,107</b>

Data from the ONS shows that average annual gross pay (for employee jobs) summed between the ages of 19 and 26, after discounting and accounting for unemployment, is **£82,107** (in 2021 prices) - reflecting total earnings up to age 26.<sup>28</sup>

To calculate any wage uplift enjoyed by attendees of the Inspiration programme, PBE's analysis starts with the Kashefpakdel and Percy (2017) study, which finds that pupils who participated in more career talks in Year 10 had 0.8% higher earnings at age 26 than similar peers who did not

<sup>25</sup> Office for National Statistics, [Earnings and hours worked, age group: ASHE Table 6](#), 2022.

<sup>26</sup> Office for National Statistics, [A05 SA: Employment, unemployment and economic inactivity by age group \(seasonally adjusted\)](#), 2023.

<sup>27</sup> Following HM Treasury Green Book guidance. See: HM Treasury, [The Green Book](#), November 2022.

<sup>28</sup> Office for National Statistics, [Earnings and hours worked, age group: ASHE Table 6](#), 2022.

attend such talks. The PBE study makes two adjustments to this 0.8% uplift. *The first adjustment is to assume that the impact only persists in pupils who were sufficiently engaged to report data on participation in career talks* at age 26 (this share was 55% for the 14-15 year cohort), with no impact observed in the rest who failed to respond.<sup>29</sup> Accounting for non-responses reduces the wage uplift to 0.4%.<sup>30</sup> This would suggest that the wage uplift up to age 26 associated with external talks equals **£328** ( $0.004 \times £82,107$ ) per student.

*The second adjustment is made to allow for the fact that the study did not apply school-level identifiers* because doing that would have reduced the sample size considerably. However, controlling for 'school type' is important as schools that are motivated to organise frequent external speaker talks are also more likely to be more engaged in other activities that support better pupil outcomes. This would mean that improved pupil outcomes (in this case the wage uplift) might be the result of several initiatives undertaken by the school and not just external speaker talks.

To account for this, this study creates a range of scenarios that assume attendees of the Inspiration programme enjoy varying proportions of the 0.4% wage uplift evidenced in other similar interventions. At one end of the spectrum, if it is assumed they enjoy similar levels of benefit as seen in other such interventions, the full calculated wage uplift of 0.4% would materialise. At the other end, if it is assumed there is no benefit of the intervention, there will be no difference in wages between pupils who attended the speaker talks and those who did not. These two extreme positions are simply to provide context, with the reality likely to fall between these two end cases.

Figure B2 shows the full range of proportions of the wage uplift (seen in comparable programmes) that attendees might see, the associated wage uplift and the monetary benefit per student (in 2021 prices). The table shows that there is a maximum benefit of £328 per pupil as a result of the intervention, assuming the full wage uplift is enjoyed by attendees. If just half the impact materialises, the benefit falls to £164 per pupil.

**Figure B2: Scenarios showing the proportion of benefits that could materialise relative to benefits seen in similar interventions.**

Proportion of wage uplift that materialises	0%	25%	50%	75%	100%
Wage uplift	0%	0.1%	0.2%	0.3%	0.4%

<sup>29</sup> Of the 8,654 observed sample, there were 4,765 non-responses at age 26.

<sup>30</sup> The weighted average uplift is  $(0.55 \times 0.8) + (0.45 \times 0) = 0.4\%$ .

Total benefit per pupil (till age 26) (2021 prices)	£0	£82	£164	£246	£328
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The final step in this section is to multiply the total benefit (wage uplift) per pupil with the total number of unique pupils who attended the talks in 2018/19 to derive the total benefit generated by the Inspiration programme in that academic year.

Figure B3: Total benefits of the programme depend on assumptions around number of unique pupils.

		Proportion of wage uplift that materialises				
		0%	25%	50%	75%	100%
# of pupils	All repeats	£0	£1,817,980	£3,635,961	£5,453,941	£7,271,922
	50% repeats	£0	£2,234,691	£4,469,382	£6,704,073	£8,938,764
	No repeats	£ 0	£2,651,401	£5,302,803	£7,954,204	£10,605,606

Figure 3 shows the total benefit (in 2021 prices) of the Inspiration programme in 2018/19 under a range of scenarios. These are based on varying assumptions on the number of unique attendees and the proportion of benefits of similar interventions that Inspiration programme participants might enjoy. If the same level of benefits seen in a comparable programme is enjoyed by participants (i.e., 100% similarity), total monetary benefits would exceed £7.3 million. Under a more conservative assumption that just half the wage uplift materialises, total monetary benefits would exceed a more muted but still substantial £3.6 million. The maximum potential benefit that could be reached is £10.6 million under the least restrictive assumptions (i.e., there were no repeat attendees and 100% of the wage uplift seen in comparable programmes is enjoyed by attendees) although this is regarded as a hypothetical illustrative extreme.



## Annex C: Calculating benefit cost ratios of the Inspiration programme in 2018/19

Speakers for Schools' financial records show that the total monetary cost of running the Inspiration programme over academic year 2018/19 was £250,000. To calculate the true economic cost of an intervention, the opportunity costs of speakers must also be considered, i.e., even though speakers volunteer their time for free, the value of their time must be accounted for. Ideally, the hourly wage of each speaker would be estimated and this would be summed up for all speakers over the academic year. However, as the programme involves several speakers across many different professions, it would be a complex exercise to accurately calculate this. As an alternative, this study uses the fee of £250 per talk that speakers could have earned had they undertaken a private speaking engagement for the same duration of time.<sup>31</sup> This suggests that in 2018/19, when 1,228 talks were held, the opportunity cost of speaker time was £307,000. This brings the full economic cost of the Inspiration programme in 2018/19 to £250,000+£307,000=£557,000 (in 2018 prices).

Since the benefits calculated in Annex B were expressed in 2021 prices, the GDP deflator is used to express the cost estimate in 2021 prices for an accurate comparison. The total cost of the Inspiration programme in 2018/19 expressed in 2021 prices is **£598,918**.<sup>32</sup>

We compare the total value generated by the Inspiration programme in 2018/19 with the total cost of running it by calculating the benefit cost ratio (BCR). This is obtained by dividing the total benefits by the total cost. A ratio of one suggests that for each £1 of cost, the intervention generates a £1 benefit.

Figure C1 shows that under most scenario assumptions, the value of the programme easily exceeds its costs. In fact, even under one of the most conservative scenario assumptions in the table, that all attendees are repeats and only 25% of the wage uplift is availed by participants, the Inspiration programme still has a positive BCR of £3 (for each £1 invested in the programme in 2018/19, there is a potential benefit of £3).

We estimate that under the most conservative assumptions on the number of unique pupils, just 9% of the previously estimated wage uplift needs to be realised for the intervention to be cost-effective.

<sup>31</sup> [www.schoolspeakers.co.uk/faqs](http://www.schoolspeakers.co.uk/faqs), accessed 18 May 2023.

<sup>32</sup> HM Treasury, [GDP deflators at market prices, and money GDP March 2022 \(Quarterly National Accounts\)](#), March 2022.

Figure C1: Total benefit cost ratios of the programme depend on assumptions around number of unique pupils.

# of pupils		Proportion of 0.4% wage uplift found in previous research experienced by participants				
		0%	25%	50%	75%	100%
	All repeats	£0	£3	£6	£9	£12
	50% repeats	£0	£4	£7	£11	£15
	No repeats	£0	£4	£9	£13	£18

It should be noted that the above BCRs capture the economic benefit of a programme (i.e., the value of improved individual earnings in this case) rather than a financial return on an investment.



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