Reading the future: The impact of literacy support on disadvantaged pupils' GCSE grades and beyond

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PRO BONO ECONOMICS

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 over 600 volunteer economists, we have supported over 600 charities since our inception in 2009.

Right to Succeed is a charity that works with communities in areas of high deprivation to reduce educational disadvantage and to support children and young people. They use a place-based change approach to achieve their mission. The aim of their literacy programme is to enable schools to become world-class in identifying and meeting the needs of their learners.

The Blackpool KS3 Literacy programme led to benefits of at least

£361,000

for all pupils over 2018-2023

Illiteracy costs the UK economy

£80bn

60%

of secondary school teachers say the literacy gap is increasing

The North Birkenhead Cradle to Career literacy programme led to benefits of *at least*

£1.23mn

for all pupils over 2020-23

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Summary

Studies show that many children across the UK are starting secondary school without age-appropriate literacy skills. A quarter of pupils start Year 7 with a reading age of below 11, and one in five primary school pupils are not meeting reading standards expected of their year groups. Poor literacy levels can follow children into adulthood. The World Literacy Foundation estimates that around 5.1 million adults in England are functionally illiterate i.e. they cannot read, understand information in a book, or do basic arithmetic. Such individuals typically either have low earnings or are unemployed and are therefore more reliant on welfare benefits. The Foundation also estimates that illiteracy cost the UK economy approximately £80 billion in 2018, of which £24.8 billion was spent on welfare and £55.2 billion was lost through lower personal income and weaker productivity.

There are significant personal and social gains to be made from improving literacy levels of children and young people who demonstrate gaps in attainment. The impact stands to be particularly pronounced for children from low-income families, those with special education needs or disabilities (SEND), or those for whom English is an additional language (EAL). Improved literacy levels can set up young people to enjoy better academic and behavioural outcomes in school, and improved employment opportunities, higher earnings, and better health outcomes later in life. Society, in turn, benefits from a smaller welfare bill and a reduction in crime. Unfortunately, inadequate support to help close literacy gaps acts as a barrier to realising these benefits.

Looking ahead, the issue of low literacy levels is only set to escalate. A recent Organisation for Economic Co-operation and Development (OECD) report highlights declining literacy levels across the majority of 31 OECD countries over the last decade, as technology changes the way many of us consume information, away from more complex

writing to social media posts and video clips. Evidence shows that nearly a quarter of older children and young people are now using smartphones in a manner consistent with a behavioural addiction at the expense of time that might otherwise have been spent on reading books. Going back even further, more and more younger children appear to lack basic language and communication skills – the foundation of literacy – around age five when they start school. With underfunded schools unable to adequately counter the impacts of these trends, it is charities such as Right to Succeed that are filling the gap by helping disadvantaged pupils improve their academic attainment and better their life outcomes. Right to Succeed focuses specifically on working with communities among the top 10% deprived areas in the UK to reduce educational disadvantage and to support children and young people who are most in need of it.

The purpose of this report is to calculate the monetary impact of literacy programmes led by Right to Succeed to enhance the literacy skills of pupils on their future earnings. The data shared by Right to Succeed for programmes across two sites, the Blackpool Key Stage 3 (KS3) Literacy programme and the North Birkenhead Cradle to Career programme, allows us to assess the effectiveness and viability of these two bespoke literacy programmes that were undertaken by 5,082 pupils over the period 2018-23.

Our findings show:

Overall impact on attainment: Both programmes improved academic outcomes between the start and end of the intervention as measured by the *indicative* GCSE grades (which shows the average GCSE grade achieved by past cohorts of students who achieve the same standard age score in the New Group Reading Test (NGRT)). The average GCSE grade is 4 on a scale of 1-9, with 9 the top grade and 1 the lowest. Pupils across the two programmes saw a +0.3 increase in their indicative GCSE grade for English. The improvement was more pronounced (+0.7) for pupils whose initial grade at the

start of the programme was below average for their age. This suggests the intervention helps narrow attainment gaps by having a greater positive impact on the grades of pupils who underperform on their initial assessment.

Economic benefits: The total monetary value of higher lifetime earnings as a result of the intervention (expressed in present prices), even under the most conservative assumptions, is estimated to be *at least* £1.6 million for all pupils who benefitted from the intervention over 2018-23 across the two sites. Under the most optimistic assumptions, the maximum benefits of the programmes assessed would reach £9.2 million.

Value for money: The total cost of running the programmes across the two sites is calculated to be £0.53 million. This suggests that if even only a third of the benefits calculated can be attributed to the programme, it is viable and cost-effective. Even under significantly more conservative estimates of costs per pupil, the benefits of the programme still outweigh costs.

Inclusive impact: Pupils with SEND also saw a greater improvement in outcomes across both programmes than pupils without SEND, as did pupils for whom English is an additional language. These results suggest that the intervention has a greater impact on these relatively disadvantaged groups and has a role to play in narrowing performance gaps.

These numbers, as encouraging as they are, are still almost certainly an underestimate of the full benefits of the programme.

First, far more pupils had the benefit of the intervention than were included in the dataset.

Second, the upskilling of teachers and staff who were trained up will improve outcomes for their future pupils too.

Third, improved literacy will likely have a positive impact on grades across other subjects too rather than just those for English, which has been the focus of this analysis.

Fourth, this study only looks at the benefits of improved literacy on future earnings and does not include any of the other benefits mentioned such as improved health outcomes, a smaller welfare bill, and a reduction in crime.

Quantifying and including these other personal and social benefits, while out of the scope of this study, will almost certainly inflate the value of the benefits calculated. This would lend further credence to the assertion that the Right to Succeed literacy programmes assessed in this study are effective and viable with clear value for money.

The current data only allows us to draw conclusions about the viability of the programme. Looking ahead, the next step is to establish a more definitive causal relationship between the intervention and improved literacy levels. For that, Right to Succeed would need to collect similar data for a comparison group (i.e. monitor grades for children with similar backgrounds but not enrolled on Right to Succeed programmes). The difference between the results for pupils on the programme and those not enrolled on it would allow us to draw stronger conclusions on the efficacy of the intervention. This would further add to the growing body of evidence evaluating the impact of literacy interventions on educational and employment outcomes, particularly for disadvantaged pupils.

Introduction

Recent evidence shows that many children are starting secondary school without age-appropriate literacy skills. Each year, Year 6 pupils are tested in SAT assessments in their final year at primary school to check their literacy and numeracy skills. Data for 2022 showed that a quarter of pupils (175,000 children) due to start Year 7 at secondary school had a reading age below 11.[1] The problem starts much earlier down the line. Department for Education (DfE) data shows that in the 2022/23 academic year, 32% of Year 1 and 2 pupils did not meet the expected standard of reading and 40% did not meet the expected standard of writing as measured in attainment checks and phonics screening.[2] Going back even further, about 30% of children start school aged five unable to communicate their basic needs and with a quarter lacking basic language skills.[3]

For many children across the UK, digital devices are replacing the act of reading for pleasure. Research shows that 28% of pre-school children use books incorrectly and swipe as if using a smart device or tablet.[4] In older children, a 52% increase in screen time was observed between 2020 and 2022, with nearly 25% of children and young people using their smartphones in a way consistent with a behavioural addiction.[5] The problem is particularly pronounced in lower-income households where there has been a 30% decrease since 2012 in numbers of children who read regularly and own a book.[6] Children living in poverty are typically 4.5 months (2023 figures) behind their peers in reading attainment when they start school, with this gap widening to over 19 months by the time they leave secondary school.[7] There is also a strong correlation between low literacy levels and permanent exclusion from school. Pupils who are

[1] Ofsted: schools and further education & skills (FES), Thousands of year 7s struggle with reading, September 2022.
[2] Key stage 1 and phonics screening check attainment, Academic year 2022/23 - Explore education statistics, October 2023.
[3] Kindred[2], School Readiness Survey 2023.
[4] Kindred[2], School Readiness Survey 2023.
[5] House of Commons Education Committee, Screen time: impacts on education and wellbeing, May 2004.
[6] World Literacy Foundation, The Economic & Social Cost of illiteracy, White Paper, March 2018..
[7] Education Policy Institute, Annual Report 2024: Disadvantage.

excluded are 10 times more likely to be not in education, employment, or training (NEET) after their GCSEs and longer term.[8]

Even for pupils not excluded and who stay in school, weak literacy levels can have a profound impact on academic attainment throughout primary and secondary years. A study by Oxford University Press based on a survey of more than 1,000 teachers showed that at least 40% of pupils lacked the vocabulary to access their learning across all groups. The survey showed pupils with poor literacy skills had difficulty working independently and following class learning. They typically suffered from poor self-esteem, found it difficult to make friends, had worse school attendance rates, were less likely to stay in education, and had more difficulty getting work after school. The teachers surveyed cited insufficient time and not enough additional teaching support as the main challenges to helping pupils improve literacy levels.[9]

Low literacy can follow children into adulthood – with costs for all

A recent OECD report highlights declining literacy levels across the majority of 31 OECD countries over the last decade as technology changes the way many of us consume information, away from longer, more complex writing to social media posts, tweets, and video clips.[10] The World Literacy Foundation estimates that around 15% or 5.1 million adults in England are functionally illiterate, imposing significant societal and individual costs.[11] The strongest social impacts are seen in welfare and education. People with weak literacy levels are typically more reliant on welfare due to either unemployment or low earnings. It estimated that illiteracy cost the UK economy approximately £80 billion in 2018, of which £24.8 billion was spent on welfare and £55.2 billion was lost through lower personal income and weaker productivity.[12]

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[8] K Gill, H Quilter-Pinner & D Swift, Making The Difference: Breaking the link between school exclusion and social exclusion, October 2017.

[9] Oxford University Press, Why Closing the Word Gap Matters: Oxford Language Report, April 2018.

[10] OECD, Do Adults Have the Skills They Need to Thrive in a Changing World?: Survey of Adult Skills 2023, December 2024.

[11] World Literacy Foundation, The Economic & Social Cost of illiteracy, White Paper, March 2018.

[12] World Literacy Foundation, The Economic & Social Cost of illiteracy, White Paper, March 2018. .

Crime is also strongly linked to illiteracy. A US study showed that up to 85% of juvenile delinquents are functionally illiterate.[13] In the UK, a pilot scheme (The Dyspel Project) was set up to re-educate 50 prisoners with dyslexia. In the first two years of the project, only five inmates re-offended while another 13 went back to college and four found work.[14]

Aside from societal and economic costs, weak literacy levels also have a significant negative impact on the individual. Functionally illiterate individuals, aside from facing the prospect of welfare dependency and higher levels of crime, are also likely to suffer poor health outcomes.[15] Studies show that people with low levels of literacy are more likely to experience higher hospital admission rates, lack of engagement with health services, and a lack of understanding and adherence to medical advice.[16] This can become an intergenerational issue; functionally illiterate parents are unable to help their children with schoolwork and tend to have lower expectations from their children regarding schooling, thereby perpetuating a vicious cycle of illiteracy and poverty.[17]

While adult literacy programmes may help illiterate adults improve their personal circumstances, it is far more effective to intervene sooner through childhood interventions. The evidence overwhelmingly shows that investments in early childhood education, particularly for children from low socioeconomic backgrounds, lead to short- and long-term social and economic gains.[18]

There is a clear case for targeted literacy intervention to improve prospects for individuals and ease the economic and social burden

The significant individual and social costs imposed by illiteracy in the backdrop of an education system that has suffered 8% cuts in spending in

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[13] Literacy Mid-South, The Relationship Between Incarceration and Low Literacy, 2018.

[14] J Phillimore & L Goodson, Changing lives: an evaluation of the dyspel project, Centre for Urban and Regional Studies, University of Birmingham, January 2003.

[15] Functional illiteracy refers to an individual's inability to apply literacy and numeracy skills effectively to everyday tasks despite having gone to school. This includes, for example, difficulty reading a newspaper, book, or contract, or the inability to perform simple arithmetic calculations.

[16] ND Berkman et al., Literacy and Health Outcomes: Summary, AHRQ Evidence Report Summaries, Rockville (MD): Agency for Healthcare Research and Quality (US); 1998-2005. 87, January 2004.

[17] Urban Learning, 9 million adults in the UK are functionally illiterate, September 2019.

[18] Heckman, Social Media Content: Early Investments and Return on Investment for ECE/Childcare, 2018.

real terms over the last decade makes it painfully clear that there is an urgent need for targeted interventions to help combat this growing crisis.[19] The Oxford Language Report cited above also states that 69% of primary school teachers and over 60% of secondary school teachers felt the literacy gap was increasing. Indeed, with the usage of digital devices accelerating among children and taking over the time that might otherwise have been used for reading, these pressures are only set to rise.

Right to Succeed is a charity that aims to tackle these issues head-on by working with disadvantaged communities to give their children and young people the best start in life.[20] As part of their overall suite of projects across a range of themes, they work with local partners to provide a literacy programme that has been implemented in selected lower-income areas. One such programme was run in Blackpool for children aged 11-14 in eight secondary schools and one Pupil Referral Unit across the entire local authority to improve literacy levels through a needs assessment and tailored, evidence-based support (such as training for teaching staff or specific interventions for cohorts of pupils). A similar programme was also put in place in North Birkenhead, working with six primary and two secondary schools across a ward-sized geographical area.

Right to Succeed wishes to understand the effectiveness of their bespoke literacy programme and, in particular, identify the impact across key disadvantaged groups. The remainder of this report will provide a detailed evidence-based assessment of the effectiveness of the Blackpool KS3 Literacy programme and the North Birkenhead Cradle to Career literacy programme using information provided by the charity.

[19] Institute for Fiscal Studies, Annual report on education spending in England: 2023, December 2023.

[20] Right to Succeed focuses all on work in communities in the top 10% most deprived areas according to the Index of Multiple Deprivation. Source: CDRC, Index of Multiple Deprivation (IMD).

Aaron's story

Aaron (not his real name) is 13. He comes from an unstable family background and from a young age was repeatedly excluded from mainstream education. At the end of Year 6 Aaron was taken into the local authority care system. He was angry, sometimes aggressive, and struggled to manage or verbally articulate his emotions.

Aaron's reading scores were the lowest in his class and seven years behind the expected for his age group. His difficulty with reading meant learning across all subjects was difficult and frustrating, often resulting in poor behaviour.

The setting Aaron attended was part of Right to Succeed's KS3 Literacy programme. As a result, interventions were put in place to increase the amount of time Aaron spent reading – far above the usual allocated sessions in English and form time. At first, Aaron was read to by staff and soon moved on to more independent reading time. Both his ability and confidence improved quickly with the support and attention his teachers were able to give him.

Staff worked together to give Aaron the help he needed, reading was incorporated more into all lessons, and books were carefully selected according to his likes and interests, and they met regularly to discuss Aaron's progress. In just a few months over the course of one academic year, Aaron's reading age leapt from six to nearly 12. The gap between his reading and chronological age dropped from seven years to just above two years. His ability to answer retrieval questions picked up from 44% to 82%, while his ability to respond to simple inference questions rose from 36% to 50%.

The impact the programme had on Aaron went way beyond reading scores. It gave him confidence and self-belief, and allowed him to learn alongside his peers. Aaron valued that no one gave up on him. He has been reintegrated back into mainstream education where he is adjusting to the bigger class sizes and is learning how to ask for extra support when he needs it. He even won 'Star of the Week'. He is proud of the progress he has made and has asked for a copy of his progress results to be sent to him so he can look at them whenever he wants. Perhaps most importantly of all, Aaron now has high aspirations for the future and talks of joining the Royal Military Police.

Methodology

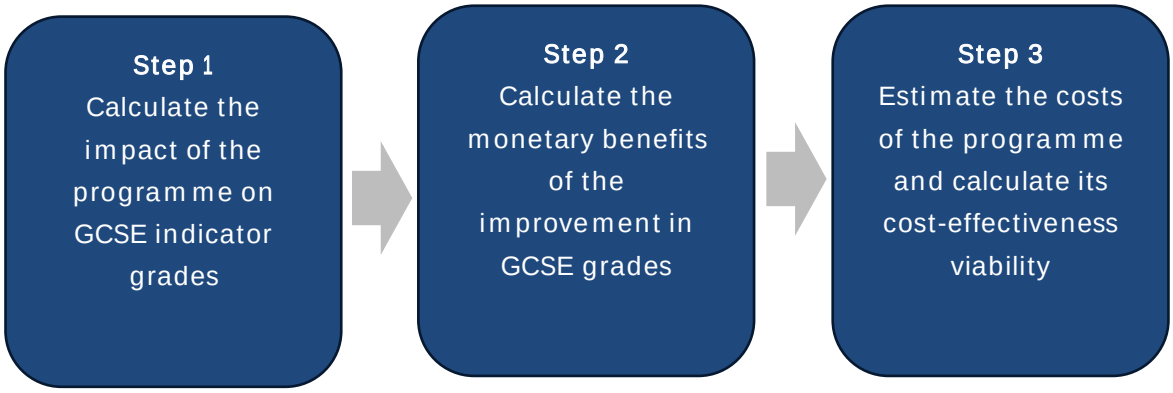
In this section, we set out the framework to assess the impact of Right to Succeed 's literacy intervention on literacy levels across its Blackpool KS3 Literacy and North Birkenhead Cradle to Career programmes.

Right to Succeed uses the New Group Reading Test (NGRT), provided by GL Assessment, to monitor the progress of children's literacy skills. GL Assessment provides, among other statistics, an indicative GCSE grade for English, based on NGRT performance. These indicative grades are based on analysis of the historical relationship between age-adjusted scores for NGRT and GCSE scores. Right to Succeed conducts initial assessments at the beginning of a programme and then twice a year throughout delivery before completing a final assessment at the end to determine the extent of progress made.

These initial and final assessment scores are used to estimate the impact and cost-effectiveness of Right to Succeed interventions in the following manner.

Figure 1: Using indicative GCSE grade improvement to calculate the impact and cost-effectiveness of the programme

A summary illustration of our methodology



Source: Pro Bono Economics.

Step 1: assess the potential impact of the literacy intervention on GCSE attainment

Right to Succeed provided a dataset of 5,082 pupils who have benefitted from literacy intervention across the Blackpool and North Birkenhead programmes over 2018-23. These pupils were spread over several year

groups and were supported by the programme at different times for varying durations. The Blackpool KS3 Literacy programme focused on secondary school pupils across the whole local authority, while the North Birkenhead Cradle to Career programme provided intervention to both primary and secondary school pupils within a ward-sized area. All pupils included in the dataset took an initial assessment at the beginning of the intervention and a final assessment at the end of it, yielding indicative GCSE grades for English at each point.[21] The change in indicative grade scores between the initial and final assessments is used to assess the impact of the programme on GCSE attainment.

Step 2: estimate the monetary value of this improvement in GCSE indicator grades from NGRT across KS3

Evidence from the DfE links GCSE performance to long-term earning potential of students.[22] Using this evidence, we estimate that a one-grade improvement in English is associated with an increase in lifetime earnings which, in total, would be valued at £8,200 today.[23]

One stumbling block in the analysis is the fact that the DfE paper was based on data prior to 2017, when the GCSE grading system awarded letter grades from A* to G, while Right to Succeed data was collected from 2018 and is based on the new number grades system.[24] To complicate matters, there is no direct one-to-one mapping between letter grades and number grades.[25] To address this issue, we calculate a range of maximum and minimum possible change.[26]

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[21] Pupils who only underwent a single assessment were excluded from the database even though they may have had the intervention for some period of time.

[22] L Hodge, A Little & M Weldon, GCSE attainment and lifetime earnings, DfE research report, June 2021.

[23] The DfE research paper finds that a one-grade improvement in English is associated with a discounted lifetime return (i.e. the present value of future returns) of £7,300. A small adjustment is required to update the value of the discounted lifetime return for a one-grade improvement in English that the DfE paper had calculated in 2021 to the most current year possible (2023). We use GDP deflators at market prices to do this: GDP deflators at market prices, and money GDP June 2024 (Quarterly National Accounts).

[24] After a major overhaul in 2017, the grading system was revised to award number grades from 9 to 1.

[25] For example, two grades from the old letter system (A* and A) map to three grades in the new number system (9, 7, 8). Similarly, B and C map to 6, 5, and 4.

[26] For example, if a pupil moves from a 4 to 5, they could be moving from a 'lower C' to either (a) a 'higher C' which would be the equivalent of a +0.5-grade change; or (b) to a 'lower B' which is the equivalent of a +1-grade change. Since it is not possible to determine exactly what change this is, we calculate a minimum and maximum possible grade change for this pupil as +0.5 and +1 respectively. This logic and subsequent assignment of grades are detailed further in Annex B.

The monetary value of lifetime benefit associated with the observed grade change is derived by multiplying the upper and lower bounds by £8,200 as calculated above. This yields a range for the minimum and maximum benefit each pupil may enjoy as a result of an improved grade. The benefits for all pupils are then added up to derive total lifetime benefits for the full duration of the two programmes i.e. three and five years for the Blackpool and North Birkenhead programmes respectively.

Step 3: understand the costs associated with the two programmes and estimate the value for money of Right to Succeed's intervention

Information on the costs associated with the two programmes was provided by Right to Succeed. These included all direct costs associated with training for staff and the completion of the intervention, as well as indirect costs outside of direct staffing e.g. data, HR, finance. Right to Succeed estimates that the Blackpool KS3 Literacy programme incurred total costs of £1,131,616 over the five years of its running and the North Birkenhead Cradle to Career literacy programme incurred costs of £490,746 over the three years of its running.

It was necessary to adjust these figures to reflect the fact that these costs cover all pupils who benefitted from this intervention for any duration (and completed at least one assessment) while the benefits calculated have been done so only for pupils who underwent both an initial and final assessment. Right to Succeed estimates that in Blackpool only 3,428 (24%) out of 14,253 pupils completed two assessments, while 1,654 (52%) out of 3,194 pupils completed both assessments in North Birkenhead.[27] The total costs were adjusted by these proportions to capture only those pupils who had been assessed twice to ensure consistency with the benefits calculated in Step 2. This calculation is explained more fully in Annex C.

Sensitivity analysis of costs

The above calculation aims to extricate costs for only those pupils who underwent both assessments from the total costs of the overall programmes. However, deriving per-pupil costs of such large programmes is an admittedly complex task as there will be at least some fixed costs that

[27] These relatively low proportions are due to higher transience levels especially in the Blackpool programme where it is estimated that, at least in the schools on the programme, 50% of the Year 11 pupils had not been at the school in Year 7.

are incurred regardless of the number of pupils assessed. For this reason, it is prudent to undertake a sensitivity analysis of costs to see how the findings are impacted as the assumptions around programme costs vary. The details of this are explained in Annex C.

Before comparing the costs with the benefits, it is important to note that due to lack of a counterfactual or control group, the impact of the intervention cannot be credibly isolated from any improvement that might have occurred naturally over time anyway. We cannot therefore claim with certainty that all observed benefits are purely the result of the intervention. In such cases, we use a breakeven analysis to identify the points at which an intervention becomes cost effective. In other words, the main findings will present what percentage of the total benefits must be directly the result of Right to Succeed's intervention for its benefits to outweigh the costs.[28]

Assumptions and limitations of the analysis

There are some limitations to this analysis arising from gaps in evidence and methodology. It follows that Pro Bono Economics has had to make key assumptions which are crucial to the findings of this report.

- This study measures the improvement in GCSE indicator grades from NGRT across KS3. The existing evidence does not allow for a comparison of GCSE indicator grades from NGRT in year 7 and actual GCSE attainment in year 11. Nor does it enable us to compare the actual GCSE attainment of the Right to Succeed young people against that of a control group. Therefore, we have made a significant assumption that a change in GCSE indicator grades across KS3 is an accurate proxy for the change in GCSE attainment in year 11 after participating in the Right to Succeed programmes in scope.
- This paper focuses solely on improvement in earning potential, but it should be noted that there are likely to be additional benefits as

[28] This will be done in the following manner, for both end-points of the range of total benefits of the intervention as calculated above:
Estimated total cost/Calculated total benefits X 100 = Proportion of benefits that need to be able to be attributed to the intervention for it to be cost effective

discussed in the previous section even if assigning a monetary value to them is out of the scope of this particular analysis.

- It is assumed the linkages between improved literacy and lifetime benefits in the DfE paper (2021) are relevant to pupils in later years as our analysis calculates benefits based on these estimates.
- In the absence of a control group, we can only claim correlation rather than causality between improved literacy and the intervention. In future studies it would be useful to identify a control or comparison group (i.e. monitoring scores for children with similar backgrounds but not enrolled on Right to Succeed programmes) to provide more definitive evidence on the causal impact of the intervention.
- It is assumed that the benefits and outcomes calculated for the pupils in the dataset will be the same for all pupils who may currently be enrolled on the programme elsewhere or in the future.
- This report has only focused on the potential benefits arising from Right to Succeed's impact on young people's English GCSE score. However, higher literacy levels will likely have a beneficial impact on the ability to better understand and improve performance across a range of subjects. In this case, the benefit estimate presented here is an underestimate of the full monetary benefits of the intervention.

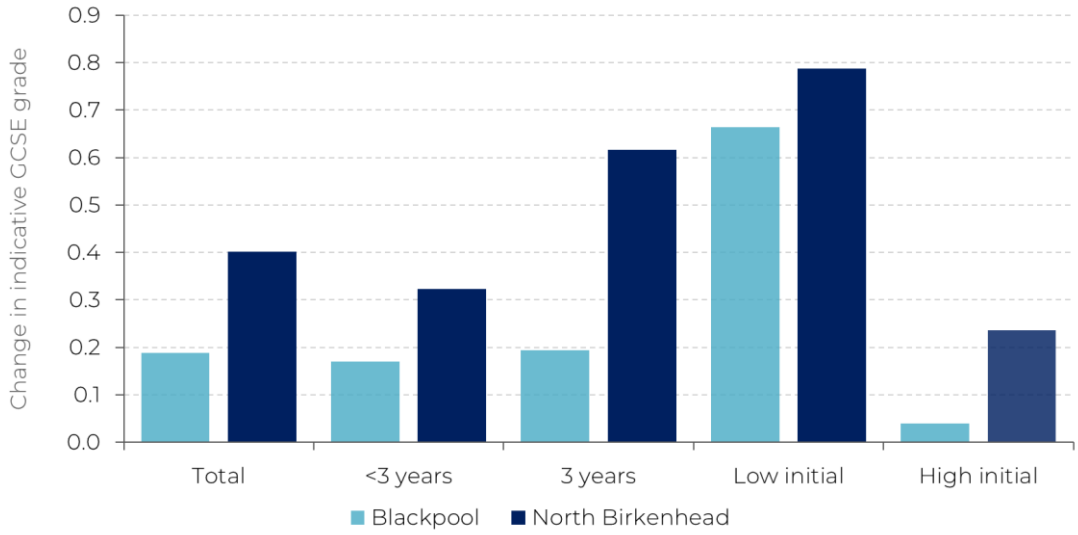
Results

Understanding the impact of the programme on attainment

The data shows that while both programmes led to an overall improvement in indicative grade between the initial and final assessments, this improvement was more pronounced for pupils in North Birkenhead (+0.4) compared to Blackpool (+0.2). The impact for pupils who had been on the intervention for longer (three or more years) was greater, as would be expected. Figure 2 below shows the average change in indicative grade between the initial and final assessments for all pupils (who completed both assessments) for the two programmes analysed.

Figure 2: The impact was greater for pupils who had a low initial GCSE indicator grade

Comparison of indicative grade change for different pupils



Notes: This chart shows the average change in GCSE indicative grades by the duration of the intervention and by level of need for pupils across each of the two programmes, The indicative grades were assigned after initial and final assessments using the New Group Reading Test provided by GL Assessment.

Source: Right to Succeed.

Both programmes also showed a strong improvement in indicative grade if the initial grade was 'low'.[29] Grade improvements of +0.7 and +0.8 were seen in Blackpool and North Birkenhead respectively for students with an initial lower-than-average indicative GCSE grade for English, compared to

[29] 'Low' initial grades are defined as those lower than the sample average.

no improvement in Blackpool and +0.2 improvement in North Birkenhead pupils with an initial average or higher-than-average grade. This suggests that the intervention is effective in helping narrow attainment gaps by leading to a greater improvement in the indicative grade of those pupils with a weaker initial performance. These findings were all statistically significant, which confirms that the improvement in grades observed over the running of the two programmes is not just a chance outcome.[30]

The economic impact of Right to Succeed's programme

As stated in the methodology section, it was necessary to calculate a range for the benefits of the programme due to the fact that there is no one-to-one mapping of letter grades to number grades.[31]

For the lower end of the benefits range, the most conservative possible estimate is made on the assumption that all pupils who experience a number grade change only gain the minimum possible letter grade change. In this conservative scenario, the benefits of the programmes assessed equal £1.6 million of which almost £0.4 million is driven by the Blackpool KS3 Literacy programme and £1.2 million by the North Birkenhead Cradle to Career literacy programme.

For the upper end of the benefits range, the most optimistic possible estimate is made on the assumption that all pupils who experience a number grade change gain the maximum possible letter grade change. Under this optimistic scenario, the benefits of the programmes assessed equal £9.2 million, of which £5.3 million is driven by the Blackpool programme and £3.9 million by the North Birkenhead programme.

Of course, the reality is likely to lie somewhere between these two extreme points. For example, if half the pupils attained the maximum grade change and the other half the minimum grade change, the benefits of the two programmes will be £5.4 million compared with the £0.53 million cost over the running of the programme.

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[30] Statistical significance refers to the likelihood that an observed result is not due to chance. A statistically significant result suggests there is a very low chance of it occurring due to random factors.

[31] A move from a 4 to 5, for example, could be moving from a 'lower C' to either a 'higher C', the equivalent of a +0.5-grade change, or to a 'lower B', which is the equivalent of a +1-grade change.

Sensitivity analysis

The cost of the programmes derived above assumes that these costs are shared among all pupils equally (i.e. the 24% and 52% of pupils who undertook both assessments in the Blackpool and North Birkenhead programmes respectively are allocated 24% and 52% of the respective costs of the two programmes). The sensitivity analysis relaxes this assumption on the basis that there will be at least some fixed costs associated with the running of large-scale, complex literacy programmes. This section shows how the findings are impacted when assumptions around programme costs change.

- Under the extreme end-point assumption that the 24% of the Blackpool pupils assessed for the study are responsible for 100% of the total costs of that programme, and the 52% of North Birkenhead pupils assessed for the study are responsible for 100% of the total programme costs, the collective cost of the programmes is £1.62 million over their full durations, compared with the benefits of between £1.6 million and £9.2 million, almost breaking even at the lowest possible estimate of benefits.
- If we make a more likely mid-point assumption, allowing for substantial fixed costs, that the 24% of the Blackpool pupils assessed for the study are responsible for 50% of the total costs of that programme, and the 52% of North Birkenhead pupils assessed for the study are responsible for 75% of the total programme costs, the collective cost of the programmes is £0.93 million over their full durations, compared with the more substantial benefits of between £1.6 million and £9.2 million.

It is clear that even under very conservative estimates, the benefits of the programme easily outweigh the cost. Yet these gains are still almost certainly an underestimate of the full benefits of the programme.

First, as stated above, far more pupils had the benefit of the intervention than were included in the dataset, with the analysis based on those that completed both the initial and final assessments. In the case of Blackpool, this was a significant 76% of pupils, and just under 50% of pupils in North

Birkenhead. It is not an unreasonable assumption that these pupils too would have enjoyed at least some benefits of the programme regardless of how long they took it for.

Second, teachers and staff who were trained up as part of the intervention would benefit from this upskilling, with the advantages seen across all pupils they might later teach rather than just the ones within the specific key stages included within the programmes.

Finally, improved literacy supports learning across all subjects, with a positive impact on overall grades rather than just those for English, which has been the focus of this analysis. Just because some benefits are not measurable or observable, it does not mean they do not exist. Had these been quantifiable, they would only add to the evidence suggesting that the Right to Succeed programmes are cost-effective with clear value for money.

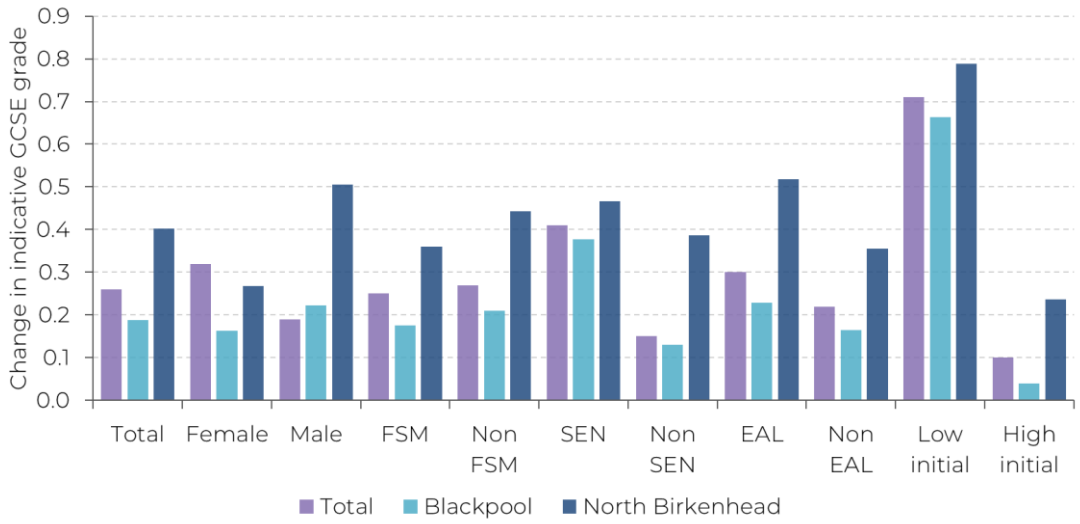
Effectiveness for young people from disadvantaged backgrounds

The analysis so far has focused on the attainment and outcomes of all pupils broadly grouped together by the two programmes assessed. However, all pupils within any one large programme comprising several schools will not be one homogenous group. Rather there will be several pupils, each with their own characteristics and circumstances, who might benefit from the intervention differently. In this section, we assess the efficacy of Right to Succeed's literacy intervention for some potentially disadvantaged groups.

We break down the findings by four main categories: gender, Free School Meal (FSM) status, Special Education Needs and Disabilities (SEND), and English as an Additional Language (EAL) status. Figure 3 shows outcomes for each of these groups. Similar trends are observed across both programmes although the impact is more pronounced in North Birkenhead.

Figure 3: Disadvantaged groups benefit from the intervention

Comparison of indicative grade change for different pupil groups



Notes: This chart shows the average change in GCSE indicative grades by pupil characteristics across each of the two programmes, The indicative grades were assigned after initial and final assessments using the New Group Reading Test provided by GL Assessment.

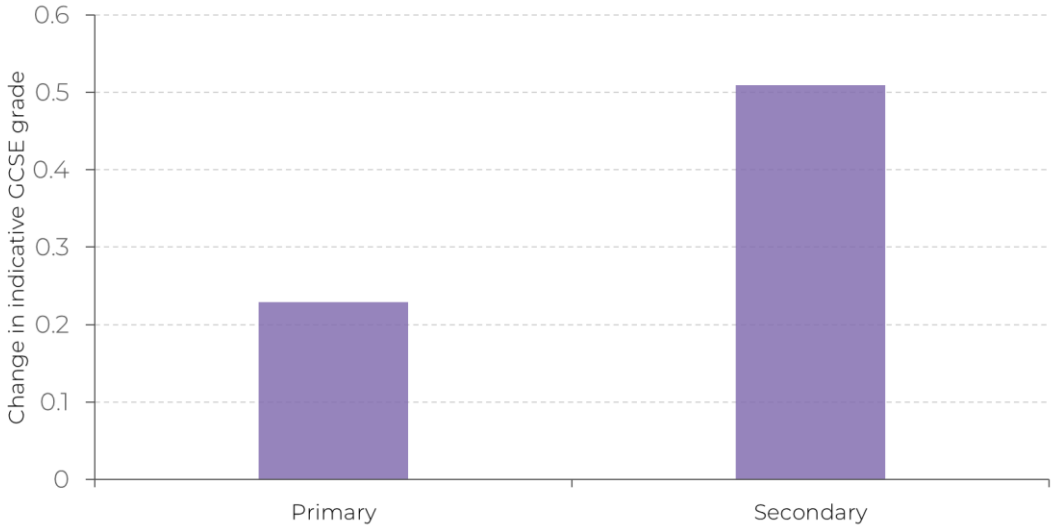
Source: Right to Succeed.

The results suggest that outcomes are particularly improved for almost all disadvantaged groups, with observed performance gaps narrowing over the duration of the programme. The programme has a marked impact on outcomes for males compared with females in both programmes. Pupils with SEND also enjoy a greater improvement in outcomes than pupils without SEND. Pupils with EAL status also benefit from increased emphasis on literacy, presumably due to more exposure to a less familiar language. Pupils previously performing lower than average on their initial assessment, by far, saw the greatest increase in the estimated GCSE grade between the initial and final assessments. The exception is pupils on FSM, who did see an improvement in indicative GCSE grades between the initial and final assessments, but to a lesser extent than pupils not on FSM.

Right to Succeed was also interested in understanding whether there was a difference in the impact of the literacy programme in North Birkenhead at primary or secondary level. The analysis shows that both groups see a statistically significant improvement but the impact on outcomes is greater at secondary level (improvement of +0.5 in anticipated grade) than at primary (improvement of +0.2).

Figure 4: Secondary school pupils show a stronger improvement in outcomes relative to primary school pupils

Indicative grade change averages among primary and secondary school students



Notes: This chart shows the average change in GCSE indicative grades for primary and secondary school pupils, The indicative grades were assigned after initial and final assessments using the New Group Reading Test provided by GL Assessment.

Source: Right to Succeed.

Conclusion

The review of earlier studies and literature shows a number of benefits to the individual and to society in improving literacy levels of children and young people where any gaps in attainment may exist. The benefits can be particularly notable in the case of disadvantaged groups e.g. pupils from low-income families, those with SEND, or those who may not have English as their first language. The benefits to the individual pupil are primarily reflected in better academic and behavioural outcomes in school, and in improved job opportunities and earning potential later in life. The literature also highlights better physical and mental health outcomes. Societal benefits accrue from a reduced welfare bill and a reduction in crime.

Recent evidence suggests that the issue of low literacy levels and gaps in attainment is one that is set to escalate in coming years. Under-resourced schools working on tight budgets and lacking support staff are unable to provide the extent of support required to bring literacy levels up for pupils performing below average (for their age) to age-appropriate levels. There is a strong case for an effective intervention by key stakeholders to help disadvantaged pupils improve their academic attainment and better their life outcomes. The Right to Succeed literacy programmes, targeted at pupils in deprived areas, aims to provide such support.

The data shared by Right to Succeed for two programmes across two sites, Blackpool and North Birkenhead, allows us to assess the effectiveness and viability of their intervention.

Our findings show:

- The intervention helps narrow attainment gaps by more strongly improving the indicative grades of pupils who have a weaker (lower-than-average) initial performance compared to those who start off with average or above-average initial grades.
- The benefits of the programme (measured as the current value of future lifetime earnings) significantly exceed its costs. We estimate that the programme yields benefits of *at least* £1.6 million for all pupils who benefitted from the intervention over 2018-23 across the two sites, while the cost of running it over the same period was £0.53 million. Just one-third of the observed benefits need to be attributed to the Right to Succeed intervention for it to be cost effective, even

under the most conservative of assumptions. Under the most optimistic assumptions, the maximum benefits of the programmes assessed would reach £9.2 million.

- Varying assumptions around the cost per pupil show that even under the very conservative estimates, the benefits of the programme outweigh costs substantially.
- The literacy interventions assessed had a marked impact on outcomes for males compared with females in both programmes. Pupils with SEND also saw a greater improvement in outcomes across both programmes than pupils without SEND and for pupils for whom English is an additional language. The intervention has a greater impact on almost all disadvantaged groups and has been effective in narrowing the gaps in literacy levels for these groups.

These estimates are likely to be an underestimate of the full benefits of the programmes: far more pupils had the benefit of the intervention than were included in the dataset; the upskilling of teachers and staff involved will benefit all pupils they teach rather than only the ones on the programmes; improved literacy will support better outcomes in all subjects rather than just in English; and finally, monetising other individual and social benefits of improved literacy is outside the scope of this analysis. Had quantifying these benefits been within the scope of this study, it would have lent further support to the evidence suggesting that the Right to Succeed programmes assessed are effective and demonstrate value for money.

Annex A – Right to Succeed literacy programmes

Programme 1: Blackpool KS3 Literacy

Closing the literacy gap for Blackpool's 11-14-year-olds

The disadvantage gap at GCSE level is greater in Blackpool than anywhere else in England. Blackpool KS3 Literacy is a collective impact project focused on improving the literacy capability of all 11-14-year-olds across the town, through a research-informed, asset-based approach.

It is a collaboration between all six mainstream secondary schools, two all-through schools, and the Pupil Referral Unit. Literacy and Evidence Leads appointed within a school, and supported by the Special Educational Needs Coordinator, work with Right to Succeed to identify pupil needs, design solutions based on existing evidence, deliver in a carefully monitored way, and reflect on learning to inform future delivery.

Tailored, evidence-based support included targeted training for teaching staff or specific interventions for identified cohorts of pupils, such as Accelerated Reader, Lexonik, Bedrock Learning, and Literacy Canon.

Programme 2: North Birkenhead: Cradle to Career

In Birkenhead there are only 0.62 jobs for every person aged 16-65. Half of children in North Birkenhead live in low-income households, three times the national average.

Cradle to Career aims to significantly improve literacy standards among children, give families easy access to the support they need, improve the quality of life for all, and create new opportunities for local children and young people.

The programme provides community support through a 17-strong team based at a local centre, improves literacy with local schools, encourages local pride through campaigns, and involves local residents in designing the campaigns and making decisions about the programme.

Similar to the Blackpool KS3 Literacy programme, this included targeted training for teaching staff or certain pupils, such as Lexia and Voice 21.

Annex B – Mapping number grades to letter grades

Ahead of the 2017 GCSEs, the government changed the GCSE grading system from A* to G to a numerical system of 9 to 1 (9 being the top grade and 1 being the lowest). There is no direct one-to-one mapping between letter grades that have been used in the DfE report that is the basis of this analysis and number grades that have been collected by Right to Succeed to use in this analysis.

Table B1 below shows the guide issued by the exam regulator Ofqual that reflects a broad mapping between the two.

Numerical system	Previous system
9	high A* grade
8	lower A* or high A grade
7	lower A grade
6	**high B grade**
5	**lower B or high C grade**
4	**lower C grade**
3	**D or high E grade**
2	lower E or high F grade
1	lower F or G grade
U	U, remains the same

The 2021 DfE paper that is the basis of this analysis highlights grade variation. It shows that the marginal returns of grade improvement at the B-A and A-A* boundaries and those below the D-C boundary are not measurably different from zero. Marginal returns at the D-C and C-B boundaries are the largest in magnitude.[32] For this reason, we ignore grade changes above 7 and below 2.

[32] L Hodge, A Little & M Weldon, GCSE attainment and lifetime earnings, DfE research report, June 2021..

Table B2 splits out grades between 3 and 6 in the following manner:

Numerical system	Previous system
6	high B grade
5a	lower B grade
5b	high C grade
4	lower C grade
3a	D grade
3b	high E grade

We then calculate possible grade changes within this range by assigning a +0.5 change between each step in Table B2 i.e. from 3b to 6 is a +2.5-grade increase.

Table B3 shows all combinations of grade changes in the 6 to 3 range.

		Final grade					
Initial grade		**6**	**5a**	**5b**	**4**	**3a**	**3b**
		high B grade	lower B grade	high C grade	lower C grade	D grade	high E grade
6	high B grade	0	-0.5	-1	-1.5	-2	-2.5
5a	lower B grade	0.5	0	0	-1	-1.5	-2
5b	high C grade	1	0	0	-0.5	-1	-1.5
4	lower C grade	1.5	1	0.5	0	-0.5	-1
3a	D grade	2	1.5	1	0.5	0	0
3b	high E grade	2.5	2	1.5	1	0	0

The blue cells highlight the grades for which a maximum and minimum change needs to be assigned. For example, if a pupil's initial grade was 5 and final grade was 6, they could have moved from a lower B (5a) to a higher B (6) thereby attaining a minimum grade change of +0.5. Or they might have gone from a high C (5b) to a high B (6) attaining a maximum grade change of 1.

Table B4 constructs the maximum and minimum grade changes possible for the 6 to 3 range used in the analysis of the Right to Succeed data.

Initial grade	Final grade	Maximum change	Minimum change	Initial grade	Final grade	Maximum change	Minimum change
6	**5**	-0.5	-1	**4**	**6**	1.5	1.5
6	**4**	-1.5	-1.5	**4**	**5**	1	0.5
6	**3**	-2	-2.5	**4**	**3**	-0.5	-1
5	**6**	1	0.5	**3**	**6**	2.5	2
5	**4**	-0.5	-1	**3**	**5**	2	1
5	**3**	-1	-2	**3**	**4**	1	0.5

Annex C – Calculating costs of the programme

Right to Succeed estimated the costs of the Blackpool KS3 Literacy programme and North Birkenhead Cradle to Career literacy programme as rows A and F in Table C1. Rows B and G show the total number of pupils in the two programmes over their respective durations. Not all pupils on the programme were included in the study. Only pupils who completed an initial and final assessment were able to be included in the analysis. The number of these pupils are given in rows C and H for the two programmes.

The proportion of pupils included in the study is calculated as C/B X 100 (24%) and H/G X 100 (52%) for Blackpool and North Birkenhead respectively. It is assumed that the costs associated with these pupils are allocated in the same proportion. For example, it is assumed that 24% of total costs for the Blackpool programme is associated with the 24% of pupils who were assessed for the study out of total pupils on the programme. These costs are given in rows E and J.

Table C1 shows cost estimates for pupils on the two programmes.

Blackpool KS3 Literacy 2018-23		
Total costs of the programme (2018-23)	A	£1,131,616
Total number of pupils on programme	B	14,253
Total number of pupils on programme who completed two assessments and are included in study	C	3,428
Proportion of pupils included in study	D	24%
Costs attributed to only those pupils in study	E	£272,166
North Birkenhead Cradle to Career 2020-23		
Total costs of the programme (2020-23)	F	£490,747
Total number of pupils on programme	G	3,194
Total number of pupils on programme who completed two assessments and are included in study	H	1,654
Proportion of pupils included in study	I	52%

Costs attributed to only those pupils in study	J	£254,131
Total costs of the two programmes for all pupils across both studies (2018-23)	**E+J**	**£526,297**

The sensitivity analysis carried out in the report varies the proportion of costs allocated to pupils in the study to see how the findings vary.

Table C2 shows the sensitivity of cost estimates to varying cost allocations.

Blackpool KS3 Literacy 2018-23	
Total costs of the programme (2018-23)	£1,131,616
Proportion of costs allocated to pupils in study (24% of total)	
24%	£272,166
100%	£1,131,616
50%	£565,808
North Birkenhead Cradle to Career 2020-23	
Total costs of the programme (2018-23)	£490,747
Proportion of costs allocated to pupils in study (52% of total)	
52%	£254,131
100%	£490,747
75%	£368,060

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