

## Reading for Enjoyment

### The Economic and Individual Earnings Benefits

#### Summary

This note provides high-level estimates at national and regional levels for the benefits of all children reading for enjoyment (reading that is beyond the national curriculum requirements) every day or almost every day. It finds:

- If all children in the UK read for enjoyment every day or almost every day, **the number getting five good GCSE grades could increase by over 37,000 a year, or by 1.1 million over a generation (30 years).**
- This would provide these individuals with an **average earnings boost of £2,415 a year, or £57,525 across a lifetime.**
- In terms of national impact, the effect of these additional individuals getting good GCSEs would be to **raise the UK's GDP by as much as £4.6 billion within a generation,** compared to the counterfactual.

#### 1. Purpose

The purpose of this analytical note is to provide high-level estimates at the national and regional levels for:

- (i) the benefit to the economy in terms of raised GDP; and
- (ii) the benefit to the individual in terms of their raised earnings

of all children reading for enjoyment every day or almost every day. Reading for enjoyment is taken to mean reading that is beyond the national curriculum requirements.

#### 2. Background

##### (1) About the key stages

The national curriculum is organised into blocks of years called 'key stages'. At the end of each key stage a child is assessed by a combination of teacher assessment and tests. Key stage 2 is the block for children aged 7/8 to 10/11 – school years 3 to 6 – with assessment at the end of year 6.

To assess key stage 2 there are national tests in English reading, English grammar, punctuation and spelling, and Maths. In addition, there are teacher assessments covering these subjects, as well as Science.

From 2016, the main classification of KS2 results was changed to ‘reaching the expected standard’. This is broadly equivalent to the previous ‘level 4b’ classification – level 4 being the expected standard for those towards the end of key stage 2, and the letter ‘b’ meaning the child is working comfortably at that level.

**Table 1: the percentage of pupils assessed for key stage two reaching the expected standard<sup>1</sup>**

	2014/15	2015/16	2015/16	2016/17	2017/18	2018/19
	Reaching level 4b			Reaching expected standard		
Percentage of pupils assessed for Ks2	67	69	54	62	65	65

## (2) The link between reading for pleasure and attainment at key stage 2

The 2015 DfE Study *Reading: the next steps; Supporting higher standards in schools*<sup>2</sup> and DfE internal analysis – using international evidence – suggested that if all pupils in England read for enjoyment every day or almost every day then we would see an average 8 percentage point raise in the proportion achieving a level 4b at key stage 2:

*“Information collected from 9-10 year olds as part of the latest Progress in International Reading Literacy Study (PIRLS), shows that those who report reading for enjoyment every day or almost every day achieve a significantly higher score on the assessment test compared to those who only read for enjoyment once or twice per week (a difference of 21 on the PIRLS performance scale, between 573 and 552).”*

*“Our [DfE] analysis of the scale of this difference suggests that if all pupils in England read for enjoyment every day or almost every day, the boost to key stage 2 performance would be the equivalent of a rise of eight percentage points in the proportion achieving a level 4b (from its current level of 67% to 75%).”*

## (3) The link between attainment at key stage 2 and key stage 4 (GCSE)

Whilst children who achieve level 4 at key stage two are ‘expected’ to go on to get five or more ‘good’ GCSEs, including in English and Maths, not all do. It is not a perfect predictor. A ‘good’ GCSE is taken to mean one at grades 4-9.<sup>3</sup>

There is nonetheless a very strong correlation between performance at key stage 2 and GCSE attainment. This can be seen by looking at the proportion of those reaching level 4

<sup>1</sup> <https://www.gov.uk/government/collections/statistics-key-stage-2> compiled from the National curriculum assessments: key stage 2 (revised) tables for each year

<sup>2</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/409409/Reading\\_the\\_next\\_steps.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/409409/Reading_the_next_steps.pdf)

<sup>3</sup> C to A\* under the old grading system

in reading at key stage 2 who go on to get an English GCSE at grade 4-9.<sup>4</sup> The National Curriculum assessments: key stage for transition matrices for the latest academic year<sup>5</sup> show that:

- 77% of those reaching level 4 in reading at KS2 got a GCSE at grade 4-9 in English
- 22% of those not reaching level 4 in reading at KS2 got a GCSE at grade 4-9 in English

**Table 2: the percentage of pupils gaining a grade 4-9 in English GCSE, by Ks2 reading performance<sup>6</sup>**

	2015/16	2016/17	2017/18	2018/19
Those reaching level 4 at KS2 in reading, going on to get English GCSE grade 4-9	81%	79%	78%	77%
Those <u>not</u> reaching level 4 at KS2 in reading, going on to get English GCSE grade 4-9	25%	23%	25%	22%
Difference	57%	56%	54%	55%

The difference, in terms of going on to get an English GCSE grade 4-9, between those reaching level 4 at KS2 and those not, is around 55 per cent of all pupils when averaged over the last four years.

#### (4) The link between productivity and attainment at GCSE

The 2014 DfE study *The economic value of key intermediate qualifications: estimating the returns and lifetime productivity gains to GCSEs, A levels and apprenticeships*<sup>7</sup> found a marginal lifetime productivity premium of £100,000 attached to having at least five good GCSEs, including in English and Maths, compared to those with anything less:

*“Individuals achieving five or more good GCSEs (including English and maths) as their highest qualification are estimated to have lifetime productivity gains worth around £100,000 on average, compared to those with below level 2 or no qualifications. This is equivalent to around 3 additional years of work (based on the average output of an individual with five or more GCSEs as their highest qualification).”*

The *average* – as opposed to *marginal* – lifetime productivity premium was found to be £60,000. The average figure refers to *all* those with five good GCSEs, whereas the marginal figure refers to those for whom five good GCSEs is their highest qualification.

<sup>4</sup> An English GCSE grade 4-9 is a necessary condition for getting five or more GCSEs at grades 9-4 including in English and Maths

<sup>5</sup> for which revised (final) data are available

<sup>6</sup> <https://www.gov.uk/government/collections/statistics-gcses-key-stage-4> compiled from the National curriculum assessments: key stage 4 (revised) tables for each year (see table 7, transition matrices)

<sup>7</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/387160/RR398A - Economic Value of Key Qualifications.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/387160/RR398A - Economic Value of Key Qualifications.pdf)

The £100,000 and £60,000 figures are 'discounted' values and refer to 2013 data – therefore taken as 2013 money terms. The estimates were formed on the back of estimated lifetime earnings gains through a regression analysis. The key underlying earnings and employment gains were reported as:

- Earnings raised by 3% for men who hold 5 good GCSEs as their highest qualification and by 12% for all men who hold 5 good GCSEs (13% and 20% for women).
- Employment raised by 9 percentage points for men who hold 5 good GCSEs as their highest qualification (15 percentage points for women). Employment was not found to be raised by *all* men or women who hold 5 good GCSEs.<sup>8</sup>

These were transformed to productivity in the DfE analysis by applying a 30% mark-up to capture non-wage labour costs such as employer national insurance and pension contributions. The DfE analysis rightly acknowledged this method is likely to underestimate the productivity premium. We seek to improve on it by looking at the relationship between GDP per head of working population and average earnings – doing this gives a mark-up closer to 70%.

The analysis was undertaken by the Institute for Fiscal Studies as well as economists at DfE.

### 3. Method

#### Benefit to the economy (productivity and GDP)

We model the potential impact on the economy of all school pupils reading for enjoyment every day or nearly every day using the following basic steps:

- Applying +8 ppts uplift to those meeting the expected standard at key stage 2 compared to the current situation, as found in the 2015 DfE study.
- Transforming this uplift to get the uplift in those gaining 5 good GCSEs (good being grade 9-4), including in English and Maths, by applying a 55% grossing factor. This grossing factor is the difference observed between those getting a good GCSE in English who attained level 4 at KS2 and those who did not attain level 4 at KS2.
- Assuming, generously, that all those getting a good GCSE in English also get at least 4 other good GCSEs (or 3 other if English is counted as 2 GCSEs – literature and language). The transformed uplift – those getting 5 good GCSEs – is therefore +4.4 ppts.<sup>9</sup>

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<sup>8</sup> The change for this group was not found to be statistically significant.

<sup>9</sup> 55% x 8ppts = 4.4ppts.

- Taking the average nominal £60,000 lifetime productivity gain found by DFE for 2013, and uprating it to 2019-terms, on the basis of nominal GVA in 2019 vs 2013, which gives an implied 2019-terms lifetime productivity gain of £75,000 as a lower estimate.<sup>10</sup>
- Using an alternative estimate for the 2019-terms lifetime productivity gain of £97,000 based on the relationship between earnings and GDP per head of working population as an upper estimate.
- Converting the £75,000 to £97,000 lifetime productivity gain to average annual productivity gain – around £3,100 to £4,100 per annum when also converted to *current* rather than *discounted* terms.
- Applying this annual productivity gain to 4.4 per cent of those of working age to get the aggregate economic impact in terms of GDP. Those of working age is taken as 16 to 64 inclusive, reported as standard in the national statistics.<sup>11</sup>
- Using these figures to obtain the national impact, but these as well as adjusted figures informed by Office for National statistics and DFE data for the regional impacts.

### Benefit to the individual (earnings)

- Taking the DFE productivity gain figures for the individual from the basic steps above and reverse engineering the DFE numbers back to the earnings gains by removing the 30% mark-up.

**Table 3: Key inputs for modelling the benefits to the economy and individual**

	Current (2019)			
	Working age population <sup>12</sup>	Average productivity: GDP per person of working age	Total GDP <sup>13</sup>	Share of pupils meeting the expected standard at KS2 (England only)
England	34,811,200	£44,891	£1,839bn	65%
North East	1,637,100	£32,518	£63bn	67%
North West	4,494,800	£38,624	£207bn	65%
Yorkshire & The Humber	3,379,800	£34,550	£142bn	63%
East Midlands	2,942,600	£35,425	£125bn	63%
West Midlands	3,610,900	£36,868	£160bn	63%
East of England	3,771,700	£40,512	£186bn	64%
London	6,069,200	£71,041	£487bn	71%
South East	5,574,000	£47,924	£311bn	66%
South West	3,331,000	£39,218	£158bn	64%
Wales	1,909,500	£32,569	£75bn	NA*

<sup>10</sup> <https://www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/ybha/pn2>

<sup>11</sup> Though noting the recent change in the SPA from 65 to 66 years of age for men and women and those taking their GCSEs at 16 years of age (typically).

<sup>12</sup> <https://www.nomisweb.co.uk> – Annual Population Survey (2019)

<sup>13</sup>

<https://www.ons.gov.uk/economy/grossdomesticproductgdp/bulletins/regionaleconomicactivitybygrossdomesticproductuk/1998to2018>

Scotland	3,442,200	£40,158	£161bn	NA*
Northern Ireland	1,167,600	£33,927	£48bn	NA*
UNITED KINGDOM	41,330,500	£44,891	£2,124bn	NA*

\*the equivalent of 65% – the same as for England – is assumed in the modelling

## 4. Results

The results are presented in terms of the impacts of ‘reading for enjoyment’ in terms of the additional number of individuals getting 5 good GCSEs and then:

- (i) the annual & lifetime *earnings* gain to the individual of getting 5 good GCSEs
- (ii) the annual & lifetime *productivity* gain to the individual of getting 5 good GCSEs
- (iii) the economy’s annual GDP gain from more people getting 5 good GCSEs

Because the gains to the economy – including the additional numbers in the workforce with 5 good GCSEs – build with time, these results are also presented at the 10 year and 30 year (‘within a generation’) points.

**Table R1: ‘reading for enjoyment’; the additional number of individuals getting 5 good GCSEs**

	Each year	After 10 years	After 30 years
	Annually (flow)	Decade (stock)	Generation (stock)
England	31,559	315,588	946,764
North East	1,413	14,127	42,380
North West	4,109	41,091	123,272
Yorkshire & The Humber	3,093	30,931	92,793
East Midlands	2,664	26,638	79,915
West Midlands	3,421	34,210	102,629
East of England	3,503	35,033	105,100
London	5,261	52,609	157,828
South East	5,164	51,642	154,927
South West	2,931	29,306	87,919
Wales	1,669	16,692	50,076
Scotland	2,727	27,268	81,805
Northern Ireland	1,153	11,534	34,602
UNITED KINGDOM	37,108	371,082	1,113,247

**Table R2: ‘getting 5 good GCSEs’; average annual and lifetime *earnings* boost to the individual**

	Annual (current value)		Lifetime (discounted value)	
	Min	Max	Min	Max
England	£2,415	£2,415	£57,525	£57,525
North East	£1,749	£2,415	£41,662	£57,525
North West	£2,110	£2,415	£50,251	£57,525
Yorkshire & The Humber	£1,917	£2,415	£45,647	£57,525
East Midlands	£1,937	£2,415	£46,120	£57,525
West Midlands	£2,024	£2,415	£48,193	£57,525
East of England	£2,260	£2,415	£53,826	£57,525
London	£2,415	£3,669	£57,525	£87,390
South East	£2,415	£2,553	£57,525	£60,806
South West	£2,170	£2,415	£51,671	£57,525
Wales	£1,793	£2,415	£42,710	£57,525
Scotland	£2,142	£2,415	£51,018	£57,525
Northern Ireland	£1,914	£2,415	£45,586	£57,525

UNITED KINGDOM	£2,350	£2,415	£55,962	£57,525
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**Table R3: 'getting 5 good GCSEs'; average annual and lifetime *productivity* gain to the individual**

	Annual (current value)		Lifetime (discounted value)	
	Min	Max	Min	Max
England	£3,140	£4,079	£74,735	£97,070
North East	£2,274	£4,079	£54,126	£97,070
North West	£2,743	£4,079	£65,284	£97,070
Yorkshire & The Humber	£2,492	£4,079	£59,302	£97,070
East Midlands	£2,518	£4,079	£59,917	£97,070
West Midlands	£2,631	£4,079	£62,610	£97,070
East of England	£2,938	£4,079	£69,928	£97,070
London	£3,140	£7,134	£74,735	£169,783
South East	£3,140	£4,134	£74,735	£98,381
South West	£2,821	£4,079	£67,129	£97,070
Wales	£2,331	£4,079	£55,487	£97,070
Scotland	£2,785	£4,079	£66,280	£97,070
Northern Ireland	£2,488	£4,079	£59,224	£97,070
UNITED KINGDOM	£3,055	£4,079	£72,703	£97,070

**Table R4: 'getting 5 good GCSEs'; annual GDP boost from more people getting 5 good GCSEs**

	After 30 years, generation	
	Min	Max
England	£3,006,060,706	£3,904,451,459
North East	£102,384,251	£189,268,216
North West	£339,055,897	£504,140,289
Yorkshire & The Humber	£224,462,910	£379,081,015
East Midlands	£197,452,528	£330,044,321
West Midlands	£253,188,866	£405,001,372
East of England	£300,061,746	£423,036,826
London	£524,095,223	£1,300,549,955
South East	£481,333,088	£643,373,903
South West	£254,394,788	£373,607,569
Wales	£122,425,048	£214,171,016
Scotland	£263,617,709	£386,079,848
Northern Ireland	£79,900,052	£130,958,931
UNITED KINGDOM	£3,472,003,515	£4,635,650,037

We find that all pupils in the UK reading for enjoyment could increase the numbers getting 5 good GCSEs (or GCSE-equivalent, i.e. Scotland) by 1.1 million over a generation.

The average UK earnings boost to an individual to gaining 5 good GCSEs is £2,415 per year whilst the lifetime earnings boost is £57,525 in discounted terms. The average productivity boost is up to £4,079 per year whilst the lifetime productivity boost is up to £97,070 in discounted terms.

The impact of more individuals getting 5 good GCSEs would be to raise the UK's annual GDP by as much as £4.6 billion within a generation (30 years), compared to the counterfactual.

Although the analysis does not demonstrate a direct causal link between reading for enjoyment and GDP, the evidence suggests reading for enjoyment is correlated with higher key stage 2 outcomes which is in turn correlated with higher GCSE outcomes, and in turn linked with higher productivity levels and hence national GDP.

The social benefit (not captured by GDP or any of this analysis) – including personal literary and cultural enrichment – is likely to be just as significant as the GDP impact, if not more so.