Understanding school performance in coastal communities

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National Institute of Economic and Social Research

Exploring Recruitment, Retention and Region: the new three ‘R’s’ challenging schools in England
BERA SIG conference, Plymouth University, 12 June 2017
Acknowledgements

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• The remit, and thus context, of this work was shaped specifically by the needs and interests of Regional Schools Commissioner South East and South London colleagues to support the development of an approach/strategy to improve the performance of schools across their region. Further work with schools in the area aims to develop an understanding of ‘what works’ in these contexts and what effective support can be offered.

• We thank the Department for Education for granting access to data from the National Pupil Database. All errors and omissions remain the sole responsibility of the authors.
Introduction

• Growing concerns over poor performance of coastal schools

• Increasing recognition of challenges facing coastal communities

• This research: aims to identify whether there is a “distinct coastal schools problem” — or - if it is simply a result of challenges seen in other areas with similar levels of deprivation
This presentation

• Identifying coastal schools
• Data sources
• School performance in coastal communities
  • Descriptive statistics
  • What factors can account for differences between coastal and non-coastal schools?
• Attainment in similar schools
• Variation among coastal schools
Identifying coastal schools

• Alternative approaches to identifying coastal areas (and therefore schools) exist

• We use ONS coastal communities definition
  – 217 coastal communities in England
  – covers broad range, including tourist areas, residential and industrial
  – based on ONS Built-up areas and Built-up area sub-divisions
Data sources

- Match on school postcodes
- Identify area (BUA/BUASD) of school (NPD)
- Match on area characteristics, including coastal identifier (ONS)

School and pupil characteristics (NPD)

- Identify primary and secondary schools using School Census (NPD)
- KS2 and KS4 attainment (DfE Performance Tables)
- Inspection ratings (Ofsted)

Staff absence and vacancies (School Workforce Census)
Performance in coastal and non-coastal schools
Ofsted overall effectiveness rating, coastal and non-coastal secondary schools

- Non-coastal:
  - Inadequate: 5.5%
  - Requires improvement: 20.9%
  - Good: 51.2%
  - Outstanding: 22.4%

- Coastal:
  - Inadequate: 8.2%
  - Requires improvement: 28.4%
  - Good: 48.0%
  - Outstanding: 15.4%
Ofsted overall effectiveness rating, coastal and non-coastal primary schools

- Non-coastal:
  - Inadequate: 1.6%
  - Requires improvement: 16.6%
  - Good: 65.6%
  - Outstanding: 16.2%

- Coastal:
  - Inadequate: 1.5%
  - Requires improvement: 20.6%
  - Good: 66.4%
  - Outstanding: 11.5%
## Attainment at KS4, 2014/15

<table>
<thead>
<tr>
<th>Metric</th>
<th>Coastal schools</th>
<th>Non-coastal schools</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average percentage of pupils attaining 5 or more A*-C GCSEs (or equivalent), including English and maths</td>
<td>53.6</td>
<td>58.0</td>
<td>-4.4***</td>
</tr>
<tr>
<td>Average percentage of pupils attaining the English Baccalaureate</td>
<td>20.0</td>
<td>24.9</td>
<td>-4.9***</td>
</tr>
<tr>
<td>Average percentage of pupils making expected progress in English</td>
<td>69.1</td>
<td>72.5</td>
<td>-3.4***</td>
</tr>
<tr>
<td>Average percentage of pupils making expected progress in Maths</td>
<td>63.5</td>
<td>67.9</td>
<td>-4.4***</td>
</tr>
<tr>
<td>Average Best 8 value added score</td>
<td>991.8</td>
<td>999.9</td>
<td>-8.1***</td>
</tr>
<tr>
<td>Number of schools</td>
<td>325</td>
<td>2,668</td>
<td></td>
</tr>
</tbody>
</table>

Notes: ***indicates statistically significant at the 1 per cent level, **statistically significant at the 5 per cent level, * statistically significant at the 10 per cent level.
## Attainment at KS2, 2014/15

<table>
<thead>
<tr>
<th></th>
<th>Coastal schools</th>
<th>Non-coastal schools</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average percentage of pupils achieving level 4B or above in reading and maths test and level 4 in writing teacher assessment</td>
<td>68.1</td>
<td>70.5</td>
<td>-2.4***</td>
</tr>
<tr>
<td>Average percentage of pupils achieving level 4B or above in maths</td>
<td>76.6</td>
<td>78.3</td>
<td>-1.7***</td>
</tr>
<tr>
<td>Average percentage of pupils achieving level 4B or above in reading</td>
<td>80.5</td>
<td>81.9</td>
<td>-1.4***</td>
</tr>
<tr>
<td>Average percentage of pupils achieving level 4 or above in writing teacher assessment</td>
<td>87.2</td>
<td>88.1</td>
<td>-0.9***</td>
</tr>
<tr>
<td>Number of schools</td>
<td>1,122</td>
<td>12,156</td>
<td></td>
</tr>
</tbody>
</table>

Notes:***indicates statistically significant at the 1 per cent level, **statistically significant at the 5 per cent level, * statistically significant at the 10 per cent level.
## Attainment by community size

<table>
<thead>
<tr>
<th></th>
<th>Coastal schools</th>
<th>Non-coastal schools</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><em><em>KS4: % achieving 5 or more GCSEs A</em>-C including English and maths</em>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>53.8</td>
<td>60.0</td>
<td>-6.2***</td>
</tr>
<tr>
<td>Medium</td>
<td>52.1</td>
<td>57.7</td>
<td>-5.6***</td>
</tr>
<tr>
<td>Large</td>
<td>55.6</td>
<td>57.1</td>
<td>-1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>KS2: % achieving Level 4B or above in reading, maths &amp; at least Level 4 in writing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>68.8</td>
<td>71.3</td>
<td>-2.6***</td>
</tr>
<tr>
<td>Medium</td>
<td>67.3</td>
<td>69.3</td>
<td>-1.9***</td>
</tr>
<tr>
<td>Large</td>
<td>69.1</td>
<td>70.2</td>
<td>-1.0</td>
</tr>
</tbody>
</table>

Notes: ***indicates statistically significant at the 1 per cent level, **statistically significant at the 5 per cent level, * statistically significant at the 10 per cent level.

Small communities are defined as those with a population of between 1,000 and 20,000; medium as a population of between 20,000 and 100,000 and large as having a population of 100,000 or more.
## KS4 attainment, RSC region, 2014/15

<table>
<thead>
<tr>
<th>Region</th>
<th>Coastal schools</th>
<th>Non-coastal schools</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Midlands and Humber</td>
<td>46.1 (14)</td>
<td>54.2 (333)</td>
<td>-8.1*</td>
</tr>
<tr>
<td>Lancashire and West Yorkshire</td>
<td>54.1 (35)</td>
<td>55.3 (441)</td>
<td>-1.2</td>
</tr>
<tr>
<td>North</td>
<td>51.9 (59)</td>
<td>57.6 (163)</td>
<td>-5.7***</td>
</tr>
<tr>
<td>North East London and East</td>
<td>54.4 (32)</td>
<td>58.4 (308)</td>
<td>-3.9</td>
</tr>
<tr>
<td>South London and South East</td>
<td>52.3 (100)</td>
<td>62.5 (389)</td>
<td>-10.2***</td>
</tr>
<tr>
<td>South West</td>
<td>56.8 (85)</td>
<td>58.7 (207)</td>
<td>-1.8</td>
</tr>
</tbody>
</table>

Notes: Figures in parentheses indicate the number of coastal/non-coastal schools on which the estimates are based. 
***indicates statistically significant at the 1 per cent level, **statistically significant at the 5 per cent level, * statistically significant at the 10 per cent level.
### KS2 attainment, RSC region, 2014/15

<table>
<thead>
<tr>
<th>Region</th>
<th>Coastal schools</th>
<th>Non-coastal schools</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Midlands and Humber</td>
<td>63.8 (52)</td>
<td>68.8 (1672)</td>
<td>-5.0**</td>
</tr>
<tr>
<td>Lancashire and West Yorkshire</td>
<td>70.4 (137)</td>
<td>69.9 (2263)</td>
<td>0.5</td>
</tr>
<tr>
<td>North</td>
<td>70.5 (212)</td>
<td>70.4 (833)</td>
<td>0.1</td>
</tr>
<tr>
<td>North East London and East</td>
<td>64.1 (106)</td>
<td>69.6 (1367)</td>
<td>-5.5***</td>
</tr>
<tr>
<td>South London and South East</td>
<td>67.3 (357)</td>
<td>73.2 (1623)</td>
<td>-5.8***</td>
</tr>
<tr>
<td>South West</td>
<td>68.7 (258)</td>
<td>70.2 (1099)</td>
<td>-1.5</td>
</tr>
</tbody>
</table>

Notes: Figures in parentheses indicate the number of coastal/non-coastal schools on which the estimates are based. 
***indicates statistically significant at the 1 per cent level, **statistically significant at the 5 per cent level, * statistically significant at the 10 per cent level.
KS4 attainment, disadvantaged and non-disadvantaged pupils

Disadvantaged

Non-disadvantaged

Non-coastal

Coastal
Attainment at KS2, disadvantaged and non-disadvantaged pupils

![Bar chart comparing attainment at KS2 for disadvantaged and non-disadvantaged pupils. The chart shows that non-disadvantaged pupils have higher attainment in both non-coastal and coastal areas, with non-disadvantaged pupils in non-coastal areas achieving 74.0 and in coastal areas achieving 73.1, compared to disadvantaged pupils who achieve 57.8 and 56.4 respectively.](chart.png)
What factors account for differences in performance between coastal and non-coastal schools?
KS4 attainment gap, coastal and non-coastal schools

No statistically significant gap remains once controlling for %FSM pupils

Attainment gap is reduced once controlling for school size, type and pupil intake
KS4 attainment gap, coastal and non-coastal schools, disadvantaged and non-disadvantaged pupils

Percentage point difference between coastal and non-coastal schools

<table>
<thead>
<tr>
<th>No controls</th>
<th>Adding controls for school size and type</th>
<th>Adding controls for % boys, % EAL and % SEN</th>
<th>Adding controls for % FSM</th>
<th>Adding controls for % white and % non-white FSM separately</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disadvantaged</td>
<td>-3.1</td>
<td>-1.7</td>
<td>0.1</td>
<td>3.7</td>
</tr>
<tr>
<td>Non-disadvantaged</td>
<td>-3.4</td>
<td>1.6</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Adding controls for school size and type
Adding controls for % boys, % EAL and % SEN
Adding controls for % FSM
Adding controls for % white and % non-white FSM separately
KS2 attainment gap, coastal and non-coastal schools

Percentage point difference between coastal and non-coastal schools

-2.4 -1.9 -1.9 -1.2 -0.5 0.2 -3 -2.5 -2 -1.5 -1 -0.5 0 0.5

No controls

Adding controls for school size and type

Adding controls for % boys, % EAL and % SEN

Adding controls for % FSM

Adding controls for % white

Adding controls for % white and % non-white FSM separately

0.2

-1.2

-0.5
Attainment in similar schools

- A limitation of the analysis so far is that it compares coastal schools with schools in all other non-coastal areas.
- But – coastal areas differ in their economic and social characteristics.
- To investigate if there is a distinct coastal schools problem, we identify a subset of non-coastal areas more similar in their characteristics to coastal areas.
- We then explore whether differences in attainment remain based on this more comparable subset of areas.
Comparing coastal schools with schools in similar non-coastal areas

- Identify subset of similar non-coastal areas using range of area characteristics drawn from 2011 Census (population size, age, economic activity, etc.)
- For each coastal community, aimed to identify the most comparable non-coastal community
- Once coastal schools are compared with schools located in similar non-coastal areas, coastal schools do not show lower average attainment, at either KS2 or KS4
Attainment among schools with high proportions of White British FSM pupils

- As an alternative means of exploring if there is a distinct coastal schools problem, we also explore differences in attainment specifically among those schools with a high proportion White British FSM pupils (based on top quartile)

- There is no difference in average attainment between coastal and non-coastal schools within this group, at either KS2 or KS4
Performance among coastal schools

• There is notable variation in performance among coastal schools
• In part this reflects differences in pupil intake, including the percentage of White British FSM pupils
• Nevertheless, some schools with relatively high proportions of White British FSM pupils, manage to achieve above average attainment at KS2 and KS4
Key findings

• Average attainment remained lower in coastal schools than in non-coastal schools in 2014/15. This gap is apparent at both KS2 and KS4, on a range of attainment measures.

• The gap between coastal and non-coastal schools reduces once accounting for differences in school type, size and pupil intake (% boys, % EAL, %SEN).

• Once accounting for the % FSM pupils, there is no longer a statistically significant difference in average attainment between coastal and non-coastal schools.

• Furthermore – it is schools with higher proportions of White British pupils eligible for FSM (both boys and girls) that show lower average attainment.
Key findings

• Once coastal schools are compared with schools located in similar non-coastal areas, coastal schools do not, on average, show lower attainment.

• And among coastal and non-coastal schools with a high proportion of White British FSM pupils, no statistically significant difference in attainment is apparent.

• Much of the difference in average attainment between coastal and non-coastal schools reflects greater level of disadvantage faced by many coastal communities.

• Does not mean there is not a “coastal schools problem” – but the main issue seems to be the greater levels of deprivation in the areas in which these schools are located.

• Considerable variation in coastal school performance – and some do well despite higher proportions of White British FSM pupils.