HEFCE's BLUNDER

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Key Points

- In its Issues Paper 2015/21 HEFCE wrongly reported that, in 2013-14, 82 per cent of state school students against 73 per cent of independent school students were awarded a first or upper-second class degree.
- In fact, the percentages had been transposed. It was 82 per cent of graduates from independent schools who had been awarded good degrees. This is consistent with these students having much higher entry qualifications.
- The wrong figures were widely reported in the media at the time and are still out there on the internet.
- HEFCE has quietly corrected its mistake, but has not publicly rectified the misinformation.
- It also continues to maintain that state school pupils were four percentage points ahead rather than nine points behind.
- A likely explanation for this contradiction is that HEFCE is calculating what state school students would have achieved had they got the same entry qualifications as independent school students. But they did not.
- Three times as many independent school pupils achieved straight 'A's at A-level. Less than half state school graduates had entered on at least three grade Cs.
- For the first time, in its 2015/21 Paper, HEFCE has provided degree performance for the whole range of entry qualifications. This enables the claim, which has been made on a number of occasions, that grade-for-grade state school pupils do better at university, to be set in context.
- For three C grades and above at A-level, 85% of both state and independent schools students were awarded good degrees.
- Below straight A grades state school students were ahead by 83% to 80%.
- The three-point difference is 2,200 students out of the 73,395 who entered from state schools on these qualification levels, or about one per cent of the total entry of 197,350.
- At the heart of the confusion over the relative degree performance of students from state and independent schools is what qualifications are included and who is considered.
- On A-levels below straight 'A's, state school students were ahead by three percentage points. But taking into account all the entry qualifications and the proportions achieving them, students from independent schools were nine percentage points to the good.

Introduction

1. The Higher Education Funding Council for England has made an important mistake in its recent publication, *Differences in Degree Outcomes: The effect of subject and student characteristics*, (HEFCE, 2015/21). It reported that, in 2013-14, 82% of those from state schools were awarded a first or upper-second class degree against 73% from independent schools. This is, in fact, the wrong way round.

2. The Centre for Education and Employment Research noticed that a key table did not look right and queried it with HEFCE. In an email to us dated 8 October, 2015, HEFCE admitted the figures had been transposed, and it has subsequently amended the report,

but without rectifying the public record. The incorrect figures became media headlines in September 2015 when HEFCE released the report. *BBC News Online* headed its piece, 'State students outperform private in degree grades'; *The Times* ran, 'State students outperform private students at university'; *The Daily Mail* went with, 'State school students do better at university'; and *The Independent* carried the headline, 'Top degree? You probably went to a state school'. The damaging mistake is out there on the internet, ready to be googled at any time. As long as the figures remain publicly uncorrected, they will continue to affect both perceptions of schools and how universities are expected to go about recruiting students.

HEFCE's Amendments

3. While HEFCE has changed the figures in its report, it has not altered in paragraphs 19 and 76 the statement that students from state schools were four percentage points more likely to be awarded a first or upper-second class degree. The Executive Summary (paragraphs 17-19) in the original version read:

> In 2013-14, 82 per cent of state school graduates gained a first or upper second class degree compared with 73 per cent of independent school graduates….Of the observed nine point difference, only five points are explained by the model, leaving four percentage points unexplained.

This has been changed to:

> In 2013-14, 73 per cent of state school graduates gained a first or upper second class degree compared with 82 per cent of independent school graduates….The observed nine percentage point difference is more than explained by other factors (such as the different distribution of A-level achievement) which results in an unexplained four percentage points advantage to state school students.

4. Thus, on the one hand, HEFCE is saying that the observed results showed the students from independent schools to be nine percentage points ahead, but with statistical modelling students from state schools were four percentage points to the good. Some statistical alchemy has apparently been able to bring about a turnaround of 13 percentage points.

HEFCE's Statistical Model

5. HEFCE's statistical model aims to distinguish the effect on degree results of one factor, while holding all the other things that could affect the outcome constant. It has used regression techniques to create an equation which can be used to predict what the difference would be if only one factor were changed. It gives (in paragraph 33) gender as an example. When all the male graduates from the base population are put into the equation, it calculates the proportion achieving good degrees as 70 per cent. All the male candidates are now entered into the dataset as female keeping everything else the same. The equation now calculates that 75 per cent would have got good degrees. Hence it can be concluded that the males were five percentage points less likely to have been awarded a good degree than their female fellow students.

6. A similar process has led HEFCE to report 'a four percentage point advantage to students from state schools', in spite of students from independent schools being nine points ahead. The clue to this contradiction seems to lie in the factors that HEFCE's model holds constant. Among them is the qualifications held on entry. The model thus seems to be saying that if the state school students had done as well in their entry

qualifications and were like their independent school counterparts in other ways, then they would get the better degrees. But prior attainment is the best predictor of degree performance, so if this is nullified, one of the main factors associated with performance has been taken out. HEFCE seems to be aware of this because in parenthesis in its corrected version it does offer 'the different distribution of A-level achievement' as a reason for how nine points one way can come out as four points the other.

HEFCE's Data

7. Fortunately, we are able to explore the relative degree performance of students from the independent and state sectors in more detail because HEFCE 2015/21 has published for the first time in its reports on university admissions the numbers and degree outcomes for the full range of entry qualifications, not just A-levels. Chart 1 summarizes the crucial table which appears in Annex H to the HEFCE report as Table H1[1].

Chart 1: Students[1] and Good Degrees[2] by Entry Qualifications[3]

Entry Qualification	Independent School			State School		
	N	% Students	% Good Degree	N	% Students	% Good Degree
3+ A Grades at A-Level	8,390	34	93	20,295	10	93
AAB-CCC at A-Level	11,630	47	80	73,395	37	83
UCAS Points[4]	2,920	12	67	46,175	23	66
Other[5]	1,665	7	80	50,600	26	60
None	-			450		64
Unknown	200	1	79	6,430	3	60
Total	24,830	100	82	197,350	100	73

1. UK-domiciled graduates from English HEIs in 2013-14 whose schools were known. The total population is given as 284,515, so 62,335 (22%) are not included in the analysis because their schools were not known, or for some other reason.

2. First or upper-second class honours degree.

3. Entry qualifications as defined by HESA: https://www.hesa.ac.uk/index.php?option=com_content&view=article&id=2379#entryquals/.

4. Tariff score for those whose three best A-level grades are not known.

5. Includes access courses, vocational qualifications and higher education qualifications.

Source: HEFCE 2015/21 (revised) Annex H, Table H1.

8. The full list of qualifications falls essentially into five groups: those who entered on three or more A grades at A-level; those whose three best A-levels were below straight 'A's but at least three 'C's; those who have accumulated UCAS tariff points but do not have A-levels within the specified range; those with other qualifications including access courses, vocational qualifications and higher education qualifications; and those with no recognised qualification. In addition, the entry qualifications of some were not known.

9. For each of these six groups, Chart 1 sets out, for independent and state schools separately, the number of graduates, their proportion of the total and the percentage awarded a first or upper-second class degree. The type of school attended was not known for 22 per cent of the base population, so the population[2] for this comparison is

[1] The original and corrected versions are reproduced at the end of this report.

[2] HEFCE publishes figures only to the nearest 5.

222,180, against a total population of 284,515. HEFCE told us it is mainly the mature students for whom the information on school attended is lacking.

10. Two things catch the eye in Chart 1: first, the relative performance at the various levels of entry qualification; and, secondly, the very different distributions of independent and state school students across the qualifications. The students from state schools were only ahead - by 83 to 80 percent – for A-level grades between AAB and CCC. At the level of straight 'A's, 93 per cent of both groups were awarded good degrees.

11. Elsewhere, it is those from independent schools who get more good degrees. There is a particularly large gap of twenty percentage points (80% against 60%) in favour of the independent schools for the 'other' category. HEFCE has informed us that this category includes the IB and Pre U, as well as access courses, vocational qualifications and higher education qualifications. We do not have the details, but we can infer that students from the two sectors took different qualifications in this category.

12. The second important determinant of the overall result is the distribution of the students across the qualification levels. A third (34%) of the graduates from independent schools entered on straight 'A's against ten per cent from state schools. Altogether four-fifths (81%) of those from independent schools entered on A-levels of at least three C grades compared with less than half (47%) those from state schools. About a quarter from state schools came via UCAS points, double the proportion from independent schools. Another quarter entered on 'other' qualifications against seven per cent from independent schools.

13. Multiplying the performances at the qualification levels by the distribution of students across them yields the overall result that 82 per cent of those from independent schools were awarded good degrees compared with 73 per cent from state schools.

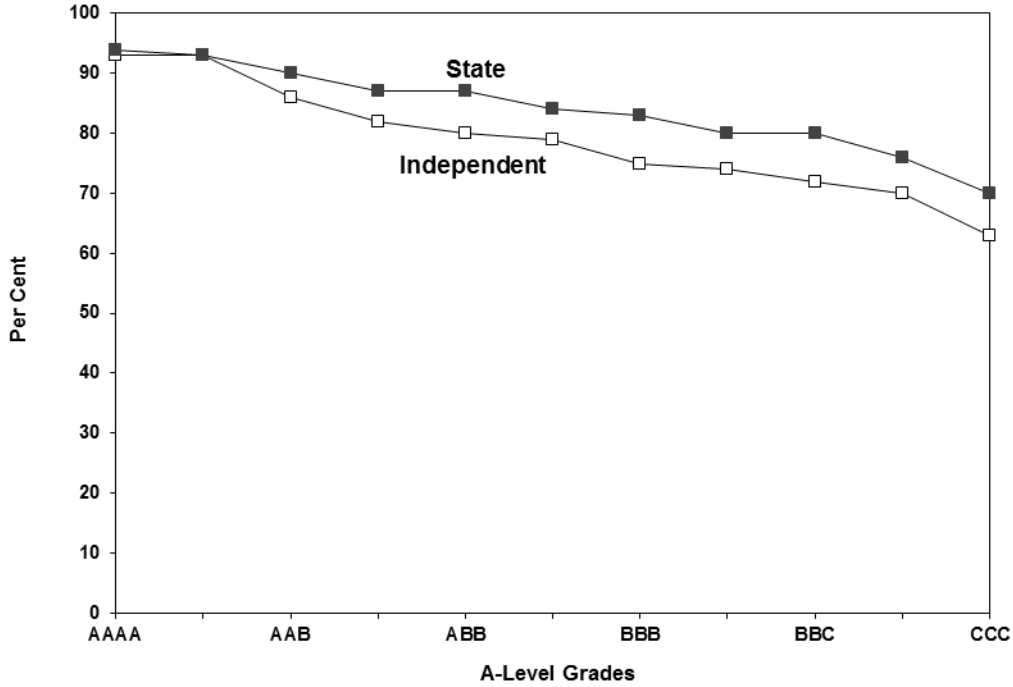
A-Level Grades

14. The claim, which HEFCE and others have made, that grade-for-grade, state school pupils do better at university has been based on just A-levels. The evidence is usually presented in the form of a graph where the performance line for state school students runs above that for independent schools.

15. Chart 2 shows what the A-level data from HEFCE 2015/21 look like graphed in this way. It does give the impression that students from state schools do better. But, although the difference looks clear-cut, it is, in fact, quite small. Exactly the same percentages, from the two sectors who entered on at least three 'C's at A-level got good degrees, 85.2 per cent. With at least three 'C's, but below straight 'A's, students from state schools were ahead by 83 to 80 per cent.

16. Chart 2 looks as if the gap is bigger than that, but it must be remembered that the distribution of students from the two sectors is different. Chart 3 shows that those from independent schools are concentrated in the upper part of the A-level range where more good degrees are achieved, while there are more from state schools in the lower part of the range where fewer good degrees are awarded.

Chart 2: Good Degrees[1] by School Type and A-Level Grades[2]

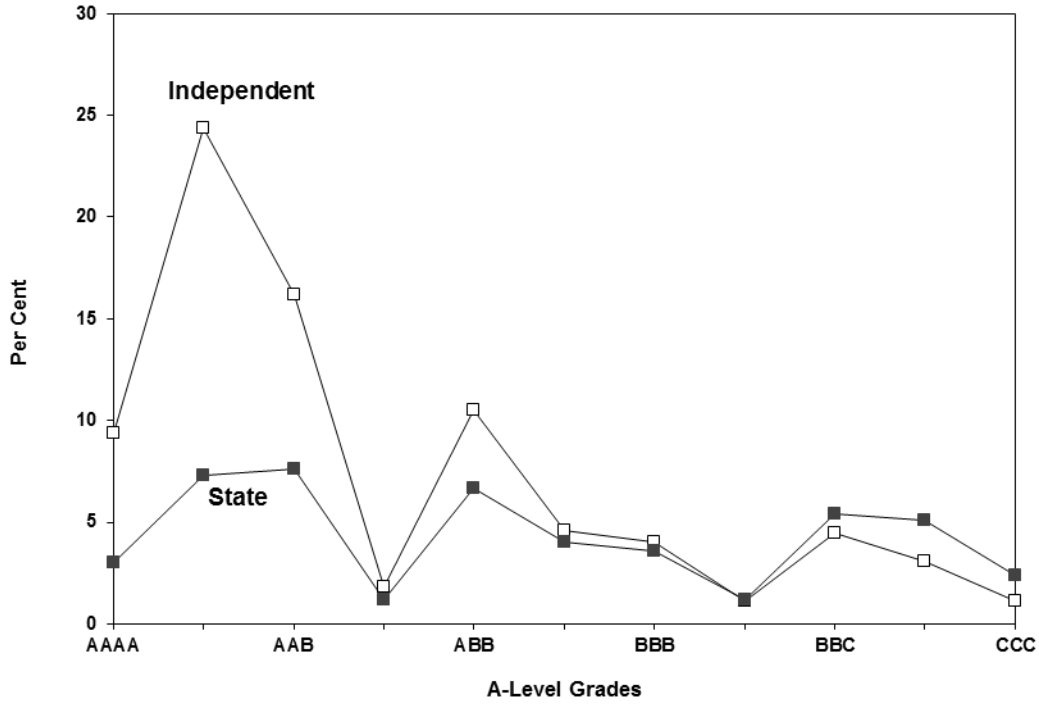


1. First or upper second.

2. Entrants with at least three A-levels at grade CCC and above. The others (18.6% of those from independent schools and 52.5% from state schools) entered on fewer or poorer A-levels, A-levels whose grades were not known, other qualifications, a higher education qualification, no recognisable qualification or qualification unknown.

Source::Table H1, Annex H, HEFCE 2015/21.

Chart 3: A-Level Grades of Graduates by School Type



Actual Numbers

17. Chart 1 shows 73,395 from state schools entering on A-levels of at least three 'C' grades but below straight 'A's. Three per cent of these, in round figures, is 2,200. Of the total of 197,350 from state schools, it is just over one per cent.

18. Overall, across all the qualifications, students from independent schools were nine percentage points to the good, at 82 to 73 per cent. That is, 17,760 fewer students from state schools got good degrees than they would have done had they been like their independent school counterparts.

Conclusion

19. At the heart of the confusion about the relative university performance of students from state and independent schools is the range of qualifications considered and whether the distribution of the students across the qualifications is taken into account. If the comparison is limited to A-levels without bringing in the student distributions then those from state schools can be shown to be somewhat ahead. But if all entry qualifications and the proportions of students achieving them are taken into account then a much higher percentage of those from independent schools are awarded good degrees.

20. The reports of the superiority of students from state schools have attracted so much attention because they fits in with the widening access agenda. Successive governments have attempted to drive, through HEFCE and the Office for Fair Access (OFFA), a more diverse intake into higher education. An aspect of this is increasing the proportion of students from state schools. The apparently better performance of state school pupils has led to calls[3] for them to be admitted on lower A-level grades. This seems plausible, but as this analysis has shown it is a relatively small difference, in the case of the 2013-14 graduates, amounting to 2,200 out of the 197,350 from state schools.

21. While it is highly likely that there are state school applicants to universities whose A-levels do not fully reflect their abilities because they have been to a poor school or for some other reason, there is no basis for a general rule. If there were some means of identifying potential for higher education that was superior to A-level performance, selection could be made more systematic.

22. But two major attempts to construct such a measure – one by the then Committee of Vice Chancellors and Principals[4] in the late 1960s and early 1970s, and, more recently, by the Sutton Trust[5] - have failed. They both concluded that their instruments were poorer predictors of university performance than A-levels themselves. As it is, it has to

[3] Curtis, P. (2009). Universities overhaul will make them more inclusive, says Mandelson, *The Guardian*, 3 November 2009; Boliver, V. (2013b). Access to Britain's top universities is far from fair. *University World News*, Issue 268; Milburn, Alan (2013). *Higher Education: The Fair Access Challenge*. London: Social Mobility and Child Poverty Commission; Crawford, C. (2014). *The Link between Secondary School Characteristics and University Participation and Outcomes*. London: DfE.

[4] Choppin, B., Orr, L., Kurle, S., Fara, P. and James, G. (1973). *The Prediction of Academic Success*. Windsor: NFER Publishing Co.

[5] Sutton Trust (2010a). *Use of An Aptitude Test in University Entrance: A Validity Study*. Final Report. London: Sutton Trust.

be left to the judgement of universities, which have always looked at candidates in the round. Admissions tutors deal with real people not statistical constructs.

23. It will be hard to change the preconceptions of those who want to believe that state schools do better. But the evidence is that they are only ahead at some A-level grades, and this is often when there are few independent school students in the comparison. Among the 2013-14 graduates, the three percentage point advantage on the A-level grades has to be set against the overall nine percentage points lead of those from independent schools.

ORIGINAL VERSION

Annex H: Differences in degree outcomes by previous school

Proportion achieving first or upper second class degrees

Observed results, split by entry qualifications

Table H1: Proportion of 2013-14 graduates achieving a first or upper second class degree, by entry qualifications

Entry qualifications	Independent school		State school	
	Number	%	Number	%
Overall	**24,830**	**73%**	**197,350**	**82%**
AAAA	2,335	93%	5,895	94%
AAA	6,055	93%	14,400	93%
AAB	4,015	86%	14,945	90%
AAC	440	82%	2,350	87%
ABB	2,600	80%	13,200	87%
ABC	1,140	79%	7,855	84%
BBB	985	75%	7,175	83%
ACC	280	74%	2,445	80%
BBC	1,120	72%	10,650	80%
BCC	775	70%	10,020	76%
CCC	275	63%	4,755	70%
299-999 points	860	77%	11,080	73%
261-290 points	460	69%	6,715	71%
231-260 points	735	64%	10,675	67%
201-230 points	395	61%	6,670	62%
161-200 points	315	54%	6,650	58%
101-160 points	155	63%	4,385	55%
Other	1,200	80%	37,880	59%
None	-	-	450	64%
Unknown	200	79%	6,430	60%
Higher education (HE)	465	79%	12,720	63%

CORRECTED VERSION

Annex H: Differences in degree outcomes by previous school

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Unknown	200	79%	6,430	60%
Higher education (HE)	465	79%	12,720	63%