

Looking within, appendix: Comparing value added and contextual value added

We know that comparing within-school variation between subjects by looking at attainment only is problematic because:

- a. the prior attainment of pupils can vary between subjects, and
- b. the national grading of subjects varies, even when prior attainment is taken into account.

A better approach to comparing subjects within schools is to look at value added, where the grade attained by each pupil is compared with the average grade attained by pupils nationally in the same subject and with the same prior attainment.

An alternative approach, which extends this, is to use contextual value added. This extends value added by taking into account a range of pupil and school characteristics. Reports available in [FFT Aspire](#) include both value added and contextual value added approaches.

Does contextual value added make any difference (when compared to value added) when we are looking at within-school variation?

Let's look first at how much difference using contextual value added makes to variation between schools. The table below shows the percentage of schools where attainment, value added and contextual value added differ by more than half a grade from the national average:

	Attainment	Value added	Contextual value added
Schools more than half a grade different from national average ¹ (%)	46%	19%	7%

It's clear that using a value added approach, particularly contextual value added, brings about a substantial reduction in variation between schools.

What happens if we take a similar approach to look at variation between subjects within schools? Here the calculation is within each school i.e. is the attainment, value added or contextual value added for a subject more than half a grade different from the school average?

	Attainment	Value added	Contextual value added
Subjects more than half a grade different from school average ² (%)	47%	26%	26%

¹ Using data for mean GCSE grade across all subjects averaged over three years (2014 to 2016). Data for 3,095 maintained secondary schools in England with 50 or more pupils over three years.

² Data for 70,329 maintained secondary schools in England with 10 or more subjects, each of which have 30 or more pupils over three years

While there is a substantial reduction when value added is compared to attainment, the difference is lower than that seen between schools.

And although there appears to be no difference in the impact of using value added or contextual value added when looking at within-school variation (both have 26% of schools with half a grade or more difference) there is some variation underneath this average. Around 5% of subjects differ by half a grade on a single one of the value added and contextual value added measures.

These outcomes are not surprising given within-school variations in pupil characteristics and, to a lesser extent, in prior attainment are lower than the variations between schools. They do, however, show that, even when we allow for prior attainment, pupil characteristics and variations in national grading between subjects then, in just over quarter of subjects, pupil outcomes differ by half a grade or more from the school average.