
Identifying Components of Attainment Gaps

Introduction

This research brief presents findings from the DCSF Research Report 'Identifying Components of Attainment Gaps'. The report combines uses data collected in the Longitudinal Study of Young People in England (LSYPE) and matched data from the National Pupil Database (NPD) to investigate what contributes to gaps in Key Stage 4 (KS4) attainment between pupils with different characteristics. In particular, it looks at gaps between attainment of pupils known to be eligible for Free School Meals (FSM pupils) and those not known to be eligible, and also the gaps relating to pupils from underperforming ethnic minority groups. The report also presents findings relating to pupils with different aspirations with respect to whether they wanted to stay in full time education once they had reached age 16.

Key findings

Gaps in performance do not arise as a result of just one factor; there are a number of characteristics that all have separate effects on KS4 attainment, and since these occur at different rates in different groups of pupils they also make separate contributions to gaps in performance between those groups.

The biggest contributions to KS4 gaps between White British FSM and non-FSM pupils come from prior attainment, income and material deprivation, pupil factors, parental engagement and parental employment status. Contributions from pupil aspirations and school effectiveness are much smaller.

Since FSM gaps among underperforming ethnic minority groups are smaller than White British FSM gaps, the contributions of the characteristics are generally all slightly smaller. While they are in a similar order for the size of contribution they make to these FSM gaps as they are for White British FSM gaps, the contribution of pupil factors is much smaller, pupil aspirations are even less important and school effectiveness actually helps to keep the gap narrower than it would otherwise be.

When looking at models of raw attainment, where prior attainment has not been controlled for, parental background and pupil factors explain larger proportions of FSM gaps. In particular, FSM pupils are more likely to have Special Educational Needs (SEN), and this contributes much more to gaps when Key Stage 2 (KS2) attainment has not been taken into account.

Gaps between the underperforming ethnic minority groups and White British pupils are much smaller than FSM gaps. This is because while the underperforming ethnic minority groups are more likely than White British pupils to have some of the characteristics associated with lower KS4 outcomes, they are also more likely to have some of the characteristics associated with higher outcomes. For example, while they live in households with lower incomes, they have higher aspirations.

Methodology

The research report uses LSYPE data that has been matched to the NPD. The pupils involved in LSYPE completed KS4 in 2006, so the report takes some steps to compare the outcomes of these pupils with the rest of the cohort from that year in order to verify that they are not unrepresentative in any obvious way. There is a sidestep into aspirations which looks at the factors that are related to pupils' aspirations, what happens to pupils with different aspirations and the importance of aspirations in determining outcomes at KS4. After that, multiple linear regression is used to build a detailed model of characteristics that can be used to predict KS4 attainment. Since these characteristics occur at different rates in different groups of pupils, they have different importance in terms of predicting outcomes for those groups. Using the characteristics of 'average' pupils from different groups, the research then looks at the relative importance of the characteristics in terms of the gaps in attainment of those groups.

Aspirations

While most pupils have high aspirations, the likelihood of this varies with the individual's characteristics. Boys, White British pupils, those with lower levels of KS2 attainment, those whose parents have lower levels of education and those who think that their friends wanted to leave full time education are all less likely to want to stay in full time education post 16 than their peers. However, once other factors have been controlled for, FSM eligibility is not a significant predictor of aspirations, and pupils from deprived areas actually have higher aspirations than others when controlling for their other characteristics.

Aspirations are closely related to many outcomes at KS4, and they actually have a significant relationship with KS4 attainment even after controlling for factors, such as KS2 attainment, which affect both aspirations and KS4 outcomes. When including pupil aspirations in models of KS2-4 progress, the size of the effects related to gender and ethnicity are much smaller. This means that differences in aspirations can explain some of the effects otherwise attributed to gender and ethnicity in national results.

Models of pupil progress

Models of pupil progress that use Pupil Level Annual School Census (PLASC) variables are useful tools for predicting KS4 outcomes for pupils with different characteristics. However, by including more information in these models, such as that collected in LSYPE or school level data collected in the Annual School Census, can explain more of the variation in pupil outcomes. When this is done, the effect of the PLASC variables is reduced, suggesting that they were proxying for some of the new variables in the model. In particular, the FSM effect is much smaller, with much of it now explained by other background characteristics.

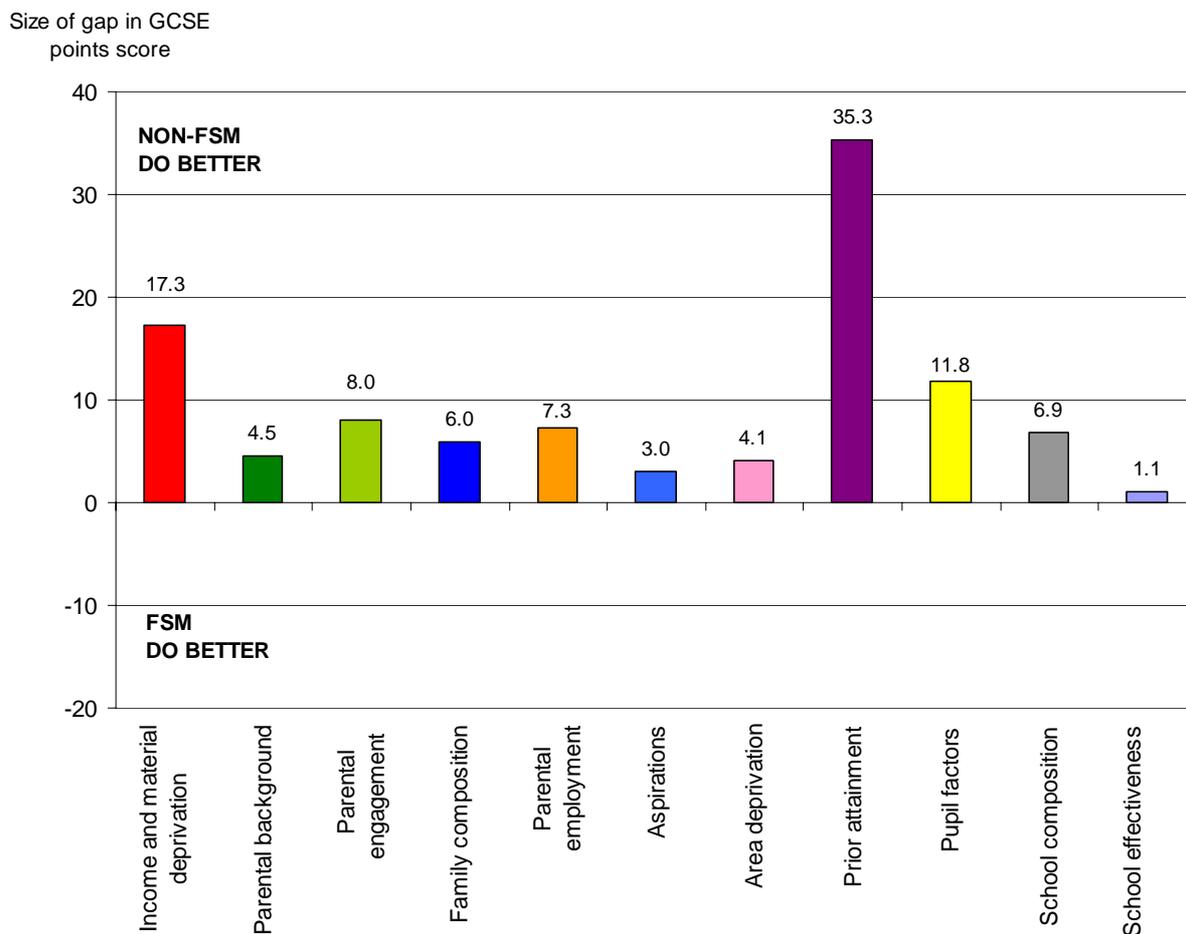
The extended model shows that there are independent effects on KS4 outcomes for a wide range of characteristics. In addition to the PLASC characteristics, deprivation, parental background and engagement, family composition and employment status, pupil aspirations, school composition and school effectiveness are all separately related to pupils' KS4 attainment.

FSM gaps

Although FSM status itself only has a relatively small impact on attainment, FSM pupils have very different characteristics to non-FSM pupils. In particular, they are more likely to have characteristics which have separate, negative, impacts on progress during secondary schooling, and also on overall attainment at KS4.

Among White British pupils, those on FSM are substantially more likely than those not known to be eligible to live with a single parent, have parents with no qualifications, have low aspirations, attend schools with lower prior attainment and be from families with at least three children. Other negative factors are also disproportionately likely to affect them, and it is these factors that contribute to the FSM gap among White British pupils.

Chart A: Components of the White British FSM gap



Prior attainment is the biggest contributor to White British FSM gaps, followed by income and material deprivation and then pupil factors and parental engagement. Much less important are pupil aspirations and school effectiveness, which contribute only very small parts to the gap. This does not mean these aren't important factors relating to pupil outcomes, just that they don't contribute as much to the FSM gap among White British pupils. So, White British FSM pupils' outcomes are not much worse than those of White British non-FSM pupils as a result of their aspirations or the effectiveness of their schools.

The FSM gap is smaller for pupils from underperforming ethnic minority groups than for White British pupils. This is largely because there is less difference between the characteristics of FSM and non-FSM pupils in these groups than among White British pupils. Pupils from underperforming ethnic minority groups have very similar aspirations regardless of their FSM eligibility, and FSM pupils from these groups are more likely to be EAL and, on average, actually attend schools with higher CVA scores. However, while only very small portions of the gap is attributed to pupil factors and aspirations, and school effectiveness is actually shown to help keep the FSM gap narrower in these groups, the other factors have a similar order of importance when predicting these FSM gaps as they do when predicting White British FSM gaps.

Some factors are more strongly related to gaps in raw outcomes than in progress during secondary school. In particular, parental background, school composition and pupil factors (such as SEN status) are much more important in terms of raw attainment FSM gaps. School effectiveness only makes a small contribution to gaps in both models.

Ethnicity gaps

White British pupils are very different to those from the underperforming ethnic minority groups in terms of their characteristics. Some of the factors associated with better KS4 outcomes are more prevalent among White British pupils, while others occur disproportionately among those from the underperforming ethnic minority groups. Relative to pupils from the underperforming ethnic minority groups, White British pupils are more likely to live in households with higher incomes, live in families with working parents, attend schools with lower FSM rates, live in less deprived areas and less likely to have parents with no qualifications. Each of these has a positive relationship with their outcomes at KS4.

However, White British pupils are also less likely to have high aspirations, they attend schools with lower CVA scores, their parents are less engaged and they are also less likely to have at least one parent with a degree. Each of these factors is associated with making less progress during KS2-4. This means that while some characteristics of the underperforming ethnic minority groups are related to lower KS4 outcomes, there are others that are related to higher KS4 outcomes.

Broadly speaking, the factors disproportionately affecting White British pupils and those which are more likely to occur among the underperforming ethnic minority groups almost balance out in terms of their impacts on KS4 outcomes. This means that the KS4 outcomes of White British pupils are only slightly better than that of the underperforming ethnic minority groups.

Additional information

The full report (DCSF – RR217) can be accessed at www.dcsf.gov.uk/research.

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