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‘Closing the gap’: the conditions under which children in care are most likely to catch up in mainstream schools

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ABSTRACT

Children ‘in care’ have, on average, lower educational attainment than their peers. This article tests the hypothesis that many of these children can ‘catch-up’, if in stable placements and secondary schools ‘apparently effective’ with other children with ‘similar’ difficulties. In a cohort of 542,998 16-year-old English children in mainstream schools, those in care for at least a year were on average 148,465 ranks behind their peers on measured attainment at age 7. At age 16, 21% of this group had ‘caught up’ improving their ranking by at least this amount. Allowing for covariates, we found that schools were differentially effective for disadvantaged pupil groups defined by eligibility for free school meals at age 7, in the bottom 3 deciles of attainment at entry to secondary school, or deemed ‘in need’ or as having behavioural, emotional or social difficulties. As predicted, the conditions for children in care catching up related to placement stability and measures of their school’s apparent impact on these disadvantaged groups. In the ‘worst’ conditions 4% caught up as against 52% in the ‘best’. The results support the hypotheses that best practice can reduce the educational gaps between children in care, other low attaining groups and their peers.

KEYWORDS

Children in care; educational attainment; placement stability; differential effectiveness; school effectiveness

Introduction

In high income countries children looked after by the state have, on average, poorer educational outcomes than their peers (O’Higgins et al., 2015). In England attention has focused particularly on the extent of this ‘gap’ among those children who are ‘looked after’ (CLA) in care for at least the previous 12 months at age 16 (DfE, 2020) and on why it exists (Berridge, 2007; Berridge et al., 2020; Jackson & McParlin, 2006; Sebba et al., 2015). This article focuses on the same group (we call them CLA12); not on the reasons for this gap but on the conditions in which those in care are likely to close it.

The paper was prompted by earlier analyses (Sinclair et al., 2019), which showed that children in care at age 16 were already far behind their peers on attainment tests at age seven and tended to fall further behind during the period before they were admitted to care. In general, care seemed to remove the downward pressure of the pre-care

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environment on educational attainment but not reverse it. On this evidence, care in itself does not, on average, produce educational disadvantage: the challenge is to reverse the disadvantage that has already occurred.

Evidence that the children in care might catch up comes from the progress of young children from Romanian institutions (Rutter et al., 2007; Smyke et al., 2012). These children were young at the point when they were adopted or placed in foster care and had previously been severely deprived. They cannot be taken as typical of the care population in England, many of whom enter care at a later stage. Nevertheless, the partial reversal of their cognitive deficits strongly suggests that in appropriate conditions, severely deprived children can, at least to some degree, make good their poor educational start. In keeping with this recent evidence, Harrison (2017) suggests that if those attending later than aged 18–19 are included, many more English ‘care experienced’ young people attend University than has previously been thought.

Further relevant evidence comes from young people interviewed in our study (Berridge et al., 2015) and in one of care-experienced young people attending university (Jackson et al., 2005). Interviewees in these studies felt that care had benefited their education but that educational success depended very much on their own ‘agency’ (Berridge, 2017) or ‘motivation’ (Jackson et al., 2005). Certain conditions were, however, necessary for success or helped towards it. These were stable foster placements where the young person felt supported, encouraged and ‘believed in’; schools where it was ‘normal’ to go on to university (Jackson et al., 2005) and where teachers responded appropriately to their difficulties in class (Berridge, 2017).

Other studies have provided more quantitative evidence of the association between stability in care and educational outcomes (Berridge et al., 2020; Sebba et al., 2015; Sinclair, Baker, Lee, & Gibbs, 2007; Sutcliffe et al., 2017). There is also evidence that schools differ in their average effectiveness for all children and – according to most but not all studies – their differential effectiveness with particular groups such as disadvantaged groups at risk of low attainment (see for example, Fletcher et al., 2015; Palardy, 2008; Reynolds et al., 2014, 2015; Strand, 2016; Thomas, 2001; S. Thomas et al., 1997).

The ‘risk groups’ selected for analysis in the current paper were: those eligible for free school meals at age 7 (FSM; a measure of socio-economic disadvantage), those in the bottom three deciles of attainment at entry to secondary school at age 11 (‘low KS2 attainment’; a measure of ‘educational disadvantage’) and those in receipt of social work services (known as ‘children in need’) and/or judged to have special needs related to social, emotional or behavioural difficulties (‘social need’; a measure of social disadvantage related to family or personal problems). These groups (FSM, low KS2 attainment, and social need) fit our purposes as they are all at risk of low GCSE attainment and are heavily over-represented in samples of children in care.

We kept an open mind over how effectiveness with these educationally disadvantaged groups was determined. In this kind of research, it is usual to distinguish *general* school effects that relate to all pupils in a school, and *differential* effects that relate to particular subgroups. In this paper we break *differential effectiveness* into two components: *enhanced* (magnified) *effectiveness* is found when schools that are generally effective with all pupils tend to be particularly effective with subgroups of them; *specific group effectiveness* applies to school effects on particular subgroups of pupils that are independent of their general effectiveness. We include analysis designed to show which of these effects apply.

A high proportion of the CLA12 (38% as against a national figure of 5% for all 16-year-olds) were in non-mainstream state secondary schools (NMS) at age 16. The educational attainments of this NMS group were dramatically lower than those found in mainstream schools; the reasons for this are addressed in another paper (Sinclair et al., 2020). The current paper, therefore, concentrates on the subset of the CLA12 attending mainstream schools at age 16. Recent analysis of a different dataset (Berridge et al., 2020) presents findings for children in care at an earlier stage of schooling, as well as those in receipt of services but not in care.

A limitation on the paper is that it focusses on secondary schools and on the children's final rather than earlier care placements. The influence of primary schools on final outcomes has to take account of any impact they may have on the type of secondary school attended as well as their impact on a child's attainment at the point of transfer to secondary school at age 11. Similarly, the impact of earlier care placements is strongly mediated by their impact on the child's placement at our outcome point. Our key analyses therefore focus on the apparent impacts of the child's secondary school and the length and stability of final placement, given their prior attainments and placement status and their attendance at mainstream schools.

Against this background, we test the hypotheses that the CLA12 are most likely to make good progress if, after controlling for other relevant factors, they are:

- in mainstream secondary schools that are relatively more effective than other schools with the risk groups defined above;
- in stable long-term placements at 16.

If these effects can be demonstrated, we are interested in how it is that they come about.

Method

Database

Our analysis is part of a larger mixed methods study (Sebba et al., 2015). The data came from the English National Pupil Database (NPD), and our cohort comprised all state-funded children aged 15 on 1 September 2012 and thus eligible to take the national GCSE examinations in 2013 ($n = 642,805$).

Analytical strategy

We used the database to draw a 'construction sample' which did not contain any CLA12. We used this to measure the apparent 'effects' of individual schools on the three risk groups identified above after allowing for a set of explanatory variables thought likely to predict educational progress. We then used these school measures along with the explanatory variables and other data only available on the CLA in analyses of the CLA12 attending the same schools. Our hypothesis was that the combination of the differential school effectiveness measures and long-term placement stability would explain progress (and hence catch-up) among the CLA12, after taking account of their earlier attainment and other covariates.

Samples and their definitions

The National Pupil database (NPD) provides longitudinal data on all English pupils whose education is supported by the state. We used the NPD to draw the original cohort of 642,805 children as reported in Sebba et al. (2015). The data include the characteristics, attainments and schools of pupils at the end of four Key Stages (KS) of schooling. The pupils are linked by an anonymised identifier to the national CLA database (CLAD) and this provided additional data on those looked after.

This paper focuses on the sample of children who were in mainstream schools (for definition see below) and with recorded attainment scores at ages 7 (KS1), 11 (KS2) and 16 (KS4) and whose progress could thus be measured between these points ('mainstream sample'; $n = 524,647$). Unless otherwise made clear, our usage of the terms KS2, KS4 etc reflects the fact that data were collected at the end of a Key Stage.

We divided the mainstream sample into two groups: a CLA12 sample, comprising all children in care who had been looked after continuously for the previous 12 months at the census date of 2013; and a construction sample, consisting of all of the remaining children in the mainstream sample (see Figure 1).

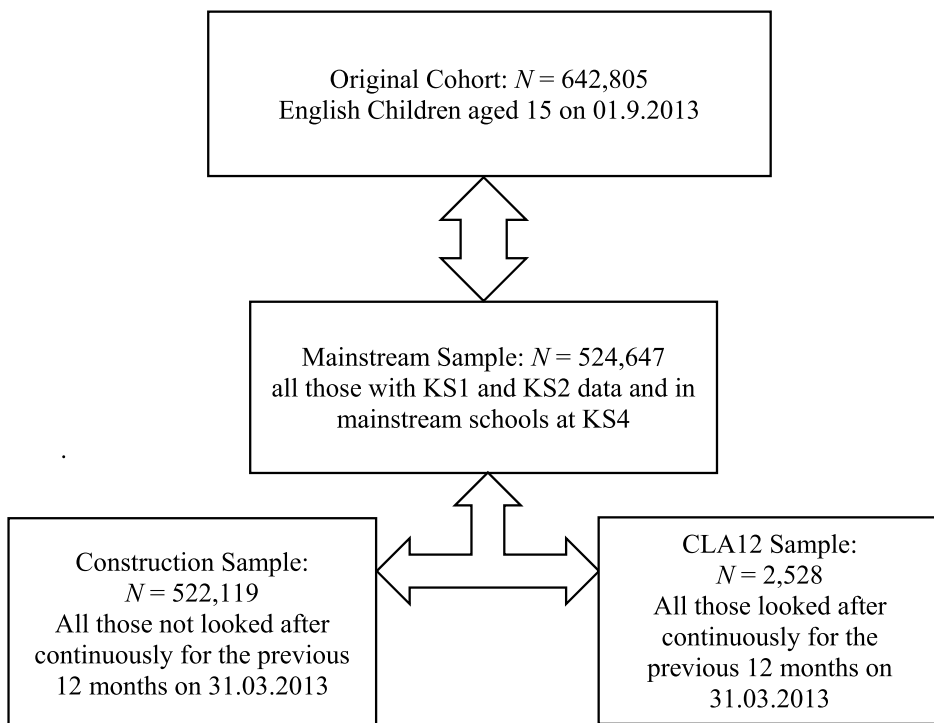


Figure 1. Samples used in the research.

Definition of mainstream schools

The mainstream sample excluded children in non-mainstream schools (NMS) at KS4. NMS comprised special schools, pupil referral units, alternative provision, the further education sector, secure and 'other' schools. Children enter them for reasons connected with special educational needs, challenging behaviour, a perceived need for a more accessible academic curriculum, and the perceived unavailability of suitable mainstream schooling.

In the original cohort, just 4.4% of the pupils who did not fall into our 'looked after for 12 months' category were enrolled in NMS at KS4; for CLA12, the figure was 37.8%. As explained earlier, the educational performance of children in NMS is the subject of a separate submission.

Outcomes

The main outcome is the KS4 attainment score, based on the national GCSE examinations generally taken at 16. In 2013 this score was determined by subject grades ranging between A and G with an additional top grade of A*, an unclassified grade and a 'standard pass' of C. Pupils received a total score based on their 8 best subjects, with a possible range of 0–464 and each grade in an individual subject adding 6 more points than the one immediately below it. In our cohort the mean score was 335.85 ($SD = 95.77$).

Explanatory variables

Our explanatory variables used in the multilevel modelling analyses (Goldstein, 2011) comprised those which were available to us and hypothesised to affect progress. The latter were coded with a view to their statistical relevance to our outcome measures rather than intrinsic interest. As an example, we used a binary classification of ethnicity ('white British' or 'other') instead of the more detailed 19-category ethnicity classification available in the database. This simplification made the data much easier to present; it also made an almost imperceptible difference to the variance explained or the key coefficients in our main analysis. The variables we used comprised:

- Prior attainment at KS1 and KS2 – presented as standardised scores ($M = 0$, $SD = 1$) which were standardised across the whole of the Original Cohort, so that an increase of 1 represents an advance of 1 standard deviation in the distribution of the scores of all state supported pupils.
- Demographic characteristics – gender (male/female) and ethnicity (white British/other)
- Special educational needs (SEN) recorded at each KS and classified as autism spectrum disorder (ASD), behavioural, emotional or social difficulties (BESD), moderate learning difficulty (MLD), severe/multiple learning difficulty (SMLD) or 'Other Needs'
- High unauthorised absence in 2007/08 – child was absent without permission for more than the average number of unauthorised absences in the original cohort during the final year of KS2
- Exclusion in 2007/08 – one or more temporary or permanent exclusions during the final year of KS2

Explanatory variables available only for the CLA12 comprised:

- Stability – whether the child was in the same care placement for a continuous period of at least two years, between March 31st in 2011 and 2013 (last census date in the CLAD)
- Strengths and Difficulties Questionnaire (SDQ) total difficulties score (Goodman 1997), a behavioural screening tool applied annually to all children in care for a year or more, with higher scores representing greater levels of difficulty. We standardised the latest available score, imputing missing values (11.1%) from variables correlated with it. We also used the SDQ's standard cut-off points to identify if any child ever had an 'abnormal' score.¹

Our three 'risk groups' were included as explanatory variables in the multilevel modelling analyses, as well as the key parameters used to measure differential school effects. They were:

- FSM – early family poverty indicated by the proxy measure, 'if recorded as eligible for free school meals at KS1/age 7 (FSM)'. Missing values were included as a binary variable.
- Low KS2 attainment – children scoring in the bottom 3 deciles of KS2 attainment (30%) at end of primary school as measured in the original cohort
- Social need – having Child in Need Status (CIN) in 2012 or 2013 and/or classified as BESD at any point

Dates at which variables were measured

The main analyses focussed on the effect of secondary schools and stable placements on KS4 attainment, after allowing for data on the child at entry to secondary school. We treated gender, ethnicity and the SEN variables as not changing over time, the latter on the assumption that the timing of these labels generally reflected the time at which something was noticed rather than a change to the underlying need. Unauthorised absence and exclusions were recorded for the year immediately before entry to secondary school on the grounds that they reflected the interaction between school and child and the inclusion of later data would obscure school effects. Eligibility for free school meals (FSM) is strongly influenced by whether or not a child is in care. We therefore treated it as recorded at its earliest point (KS1).

Two variables which were not measured at entry to secondary school were 'stability' and the school itself which were both as recorded at KS4. This choice reflected our belief that these variables would exercise their greatest impact over the two years leading up to the final examinations. It was possible, however, that apparently successful schools achieved their results by ensuring children who were not doing well moved to other schools. Instability over the last two years could similarly be an indicator of difficulties and not the reason for them. Sensitivity analyses concerned with these possibilities and presented in the results used variables recorded at KS3.

Missing data

Analysis of the original cohort showed that 23% of the 4,849 CLA12 and 16% of the 637,956 remaining children had missing attainment data at KS1 or KS2. These children were excluded from the mainstream sample. As a group, they were more likely to be in NMS or to be state funded but in independent schools at KS4 or not to have English as their first language at home. This suggests that common reasons for missing information were that children were outside, or recently arrived in, the UK (hence the association with first language), or in UK countries other than England at the relevant point of data collection; were destined for an NMS but not yet on its roll; or in an independent school but not funded by the state at that point.

Terminology and risk groups

For consistency we use 'child' rather than 'adolescent', 'young person', 'pupil' or 'student'. Our analyses are estimates but nevertheless seek to look beyond associations and suggest (but not prove) causal effects. We use 'apparent effects' or 'effects' to indicate this. We use 'risk groups' for groups defined by characteristics associated with low attainment at age 16. The 'low KS2 attainment group' was defined by a KS2 attainment score which was exceeded by 70% of the children in the original cohort.

Statistical methods

We use frequency counts, crosstabulations, means and charts to describe our samples. The main analytical technique is multi-level regression. The 'fixed part' of these regressions estimates the association between child level (e.g. ethnicity) and school level (e.g. size of school) explanatory variables and individual outcomes in a similar way to a single-level regression model. The 'random part' estimates the unexplained variation between schools and individuals (within schools), which are measured as residuals and typically interpreted as 'effects' of schools and individuals (plus any other unknown effects not controlled for in the analyses).

Statistical software

We used SPSS v24 and MIWiN v2.36.

Ethical approval

The English Government's Department for Education gave us access to the anonymised data for the specified purposes. The University of Oxford gave ethical approval for this secondary analysis.

Results

Describing the two samples

Table 1 describes the distribution of the explanatory variables in the construction and CLA12 samples along with their association with the KS2 and KS4 outcomes. (To reduce the length of the table, we have combined the SEN variables.) For our purpose, the key variables are our three risk groups. As required by our hypotheses, these were proportionately much more common in the CLA12 sample (FSM 55.3% v 17.9%, low KS2 attainment 65.7%, v 27.5% and social need, 100% v 6.1% – all CLA12 are CIN, although not all have label of BESD). They also fitted our second requirement of having substantially lower attainment in the construction sample than other children at KS4.

On average both samples slightly improved their relative attainment between KS2 and KS4, a fact that reflects the exclusion of those in NMS. Within both samples, the group of children with ‘low KS2 attainment’ improved by a considerable amount (around 0.5SD). Almost certainly this represents ‘regression to the mean’. The children were thus classified because they had performed ‘badly’ at KS2 and their performance at that point was thus more likely to be ‘low for them’ so that they had the potential to improve. The groups with FSM and social need were classified for reasons that were likely to hold back performance and not because of low attainment. Their average change in relative attainment was small. Regression to the mean and floor effects (the fact that those with very low scores cannot score much worse in future) need to be kept in mind in interpreting our results.

Table 1. Distribution of KS2 variables and outcomes in construction sample and CLA12 sample.

| Explanatory Variables | Frequency | | Standardised Attainment | |
|--|-----------|------------|-------------------------|--------|
| | Number | % of Total | At KS2 | At KS4 |
| Construction Sample | | | | |
| Female ¹ | 259,737 | 49.7% | 0.11 | 0.24 |
| White British ¹ | 408,587 | 78.3% | 0.08 | 0.10 |
| Any SEN ¹ | 49,976 | 9.6% | −0.89 | −0.39 |
| High unauthorised absence ² | 185,918 | 35.5% | −0.09 | −0.03 |
| Excluded ² | 4,477 | 0.9 | −0.67 | −0.81 |
| FSM ³ | 90,812 | 17.9% | −0.37 | −0.26 |
| Low KS2 attainment ¹ | 143,328 | 27.5% | −1.09 | −0.43 |
| Social need ¹ | 31,970 | 6.1% | −0.50 | −0.72 |
| Total sample | 522,119 | 100% | 0.08 | 0.13 |
| CLA12 Sample | | | | |
| Female ¹ | 1,358 | 53.7% | −0.67 | −0.55 |
| White British ¹ | 2,038 | 80.6% | −0.74 | −0.66 |
| Any SEN ¹ | 896 | 35.4% | −1.28 | −0.79 |
| High unauthorised absence ² | 765 | 30.3% | −0.74 | −0.73 |
| Excluded ² | 113 | 4.5% | −0.80 | −1.11 |
| FSM ³ | 1,405 | 55.6% | −0.76 | −0.62 |
| Low KS2 attainment ¹ | 1,471 | 58.1% | −1.39 | −0.82 |
| BESD ¹ | 894 | 35.4% | −0.70 | −0.82 |
| Stable ⁴ | 1,374 | 54.4% | −0.73 | −0.34 |
| Ever Abnormal SDQ ¹ | 1,105 | 47.5% | −0.90 | −0.85 |
| Total Sample | 2,528 | 100% | −0.70 | −0.61 |

¹If present at any KS.

²Measured over KS3.

³Measured as at end of KS1.

⁴Measured over KS4.

Developing measures for use with the CLA12

We used the construction sample to create two sets of school level measures for use in analyses with the CLA12. First, we used our explanatory variables to run ordinary least squares regressions predicting the KS4 attainment score for each of our three risk groups. These analyses were very similar to those later described in [Table 2](#) but restricted to members of a particular risk group. They allowed us to calculate individual residuals (how much better or worse each child in the relevant group was doing than predicted). The school averages of these residuals provided measures of the school's apparent 'impact' for each of our risk groups (i.e. 3 measures per school).

The measures just described are 'atheoretical'. They are designed to test our key hypotheses that schools that are 'good with' a particular risk group will also be 'good with' the CLA12. They make no assumption about how far 'being good with' reflects a general effectiveness with all pupils or differential (enhanced or specific) effects on the risk groups concerned. To explore and measure these two kinds of effect, we compare two two-level (school and pupil) models. Model 1 allows for one general effect and Model 2 for both general and differential effects.

[Table 2](#) represents the fixed part of the two models and gives our estimated associations between the children's background characteristics and outcomes (These are much the same as the OLS regressions used to create the first set of scores.) Unsurprisingly, by far the strongest association is with the standardised KS2 score. The positive coefficient on low attainment reflects the greater improvement associated with low scores (a floor or regression to the mean effect) as against average scores. It obviously remains the case that those with average scores tend to score higher than those with lower ones even though their 'improvement' is less.

Table 2. Fixed parts of two multi-level models predicting KS4 outcomes from KS2 measures.

| | Model 1 | | Model 2 | |
|--|-------------|-------|-------------|-------|
| | Coefficient | SE | Coefficient | SE |
| Constant | 367.115 | 0.445 | 363.156 | 0.366 |
| Male ¹ | -15.522 | 0.163 | -16.085 | 0.143 |
| White British ¹ | -12.448 | 0.245 | -10.728 | 0.217 |
| ASD ¹ | -5.517 | 0.830 | -5.591 | 0.780 |
| MLD ¹ | -2.321 | 0.431 | -1.762 | 0.464 |
| SMLD ¹ | -19.290 | 2.382 | -15.862 | 2.659 |
| Other need ¹ | -2.481 | 0.338 | -2.063 | 0.328 |
| Exclusion ² | -26.330 | 0.837 | -26.641 | 0.978 |
| High unauthorised absence ² | -11.720 | 0.220 | -9.798 | 0.207 |
| Standardised KS1 attainment ³ | 6.090 | 0.138 | 5.965 | 0.126 |
| Standardised KS2 attainment ⁴ | 39.780 | 0.183 | 44.602 | 0.172 |
| No FSM record ³ | 4.447 | 0.812 | 4.820 | 0.667 |
| FSM ³ | -15.679 | 0.220 | -16.192 | 0.306 |
| Social need ¹ | -50.852 | 0.330 | -50.077 | 0.672 |
| Low KS2 attainment ⁴ | 6.730 | 0.277 | 12.505 | 0.457 |

¹If present at any KS.

²Measured over KS2.

³Measured as at end of KS1.

⁴Measured as at end of KS2.

Table 3. Level 2 random parts of two multi-level models predicting KS4 outcomes.

| Level 2 (school) | Model 1 | | Model 2 | | R |
|--------------------------------|-----------|--------|-----------|--------|-------|
| | Var/Cova. | SE | Var/Cova. | SE | |
| Constant | 513.052 | 12.810 | 326.693 | 8.401 | 1.000 |
| Constant/FSM | | | 57.562 | 5.729 | 0.341 |
| FSM variance | | | 87.451 | 6.720 | 1.000 |
| Social need/constant | | | 104.697 | 12.626 | 0.288 |
| Social need/FSM | | | 102.931 | 10.908 | 0.547 |
| Social need variance | | | 405.154 | 32.852 | 1.000 |
| Low attainment/constant | | | 118.738 | 7.901 | 0.326 |
| Low KS2 attainment/FSM | | | 114.667 | 7.179 | 0.609 |
| Low KS2 attainment/social need | | | 173.869 | 15.466 | 0.429 |
| Low KS2 attainment variance | | | 404.842 | 13.400 | 1.000 |

Table 3 gives the so-called Level 2 ‘random part’ of our two models. These estimate individual school ‘impacts’ while taking account of the characteristics included in Table 2. Individual variation accounted for 85.3% of the ‘unexplained’ variance in Model 1. Model 2 allowed the risk groups to vary at Level 1 as well as Level 2.

In the context of Table 3, an *enhanced effect* may be suggested by correlations between *differential* and *general effects*. Conversely, a *specific group effect* is suggested by the absence of correlation between the *general effect* (school intercept) and a *differential effect*.

The main points we draw from Table 3 relate to the following:

- Differences between schools have a substantial ‘impact’ – the Level 2 constant in Model 1 accounts for 14.7% of the variance unexplained by the variables in Table 2.
- Schools vary in their ‘impact’ on the different risk groups, even after taking account of their effects on all children, and this is particularly true of their effects on those in social need and those of low KS2 attainment (as shown by the very large variance terms for these risk groups in Table 3).
- Schools that are ‘doing well’ with one risk group are also likely to ‘do well’ with another and – to a lesser extent – with children who are not in any risk group (see substantial correlations between risk groups and lower ones between them and the constant).

Table 4 summarises the overall characteristics of the models. It confirms that a model that takes account of both *general* and *differential effects* (Model 2) is a significantly better fit than one that only takes account of *general effects* (Model 1).

Table 4. Summary characteristics of two multi-level models predicting KS4 outcomes.

| | Model 1 | Model 2 |
|---------------|---------------|---------------|
| Units level 2 | 3,791 | 3,791 |
| Units level 1 | 522,119 | 522,119 |
| Deviance | 5,669,518.490 | 5,584,329.266 |

These analyses yield our two sets of measures: the first set reflects a school's impact on each of three risk groups considered on their own. The second set of measures were taken from Model 2 and reflect a school's 'estimated impact' on all its children (i.e. a *general effect*, along with separate measures for the estimated *differential effects* on each of the risk groups; four measures per school).

We concluded that there are real and important Level 2 *differential effects* associated with the risk groups, although their exact size may be difficult to estimate.² For our purposes, the validity of the measures derived from them depends on their ability to predict the outcomes for the CLA12, who were not used in their derivation.

Do the CLA12 make more progress if they are in stable placements in mainstream schools effective with the risk groups?

Table 5 gives the results of entering the four MIWin derived measures into a two-level (school and individual) model predicting KS4 attainment among the CLA12. The initial (variance components) model (which includes no predictors) estimated that 9.8% of the variance in the CLA12 outcomes is attributable to differences between schools. The final model (as shown in Table 5) attributes none of the remaining unexplained variance to schools and can be run as a one-level regression which treats the school scores as an

Table 5. CLA12 sample: predicting KS4 attainment from KS2 baseline data.

| Predictors | Coefficient | SE |
|--|-------------|---------|
| Constant | 266.364 | 5.715 |
| Male ¹ | -6.500 | 3.467 |
| White British ¹ | -13.159 | 4.317 |
| SDQ ² | -19.073 | 1.854 |
| Stability ³ | 48.367 | 3.441 |
| ASD ¹ | -9.006 | 16.450 |
| MLD ¹ | -16.573 | 5.881 |
| SMLD ¹ | -72.450 | 22.824 |
| Other Need ¹ | -8.282 | 5.290 |
| High unauthorised absence ⁴ | -2.260 | 4.061 |
| Exclusion ⁴ | -32.739 | 8.346 |
| FSM ⁵ | 1.542 | 3.418 |
| No FSM record ⁵ | 1.965 | 22.310 |
| Standardised KS1 attainment ⁵ | 1.958 | 1.698 |
| Standardised KS2 attainment ⁶ | 30.368 | 2.256 |
| BESD ¹ | -24.836 | 4.264 |
| General effect measure | 11.849 | 1.972 |
| FSM effect measure | 0.584 | 3.571 |
| Social need effect measure | 6.837 | 2.648 |
| Low KS2 effect measure (LKS2EM) | 14.628 | 2.765 |
| LKS2EM* standardised KS2 attainment ² | -11.445 | 1.934 |
| School variance | 0.00 | 0.00 |
| Child variance | 6840.607 | 194.299 |
| Schools (n) | | 1,486 |
| Individuals (n) | | 2,489 |

¹If present at any KS.

²Latest available measure.

³Measured over KS4.

⁴Measured over KS3.

⁵Measured at end of KS1.

⁶Measured at end of KS2.

attribute of individuals. In this model a change of 1SD in the standardised school level measure changes the predicted GCSE outcome for CLA12 by roughly 15 points (school level low KS2 attainment measure), 12 points (*general effect* measure), and 7 points (social need measure). The difference made by a change in the FSM measure was tiny and not significant.

In the context of [Table 5](#), an *enhanced effect* may be suggested by an interaction between school *general effects* and pupil variables. As might be expected, schools that did well with those of low KS2 attainment who were not CLA12 did particularly well with those CLA12 who were also of low KS2 attainment: an interaction effect of roughly 11 points (see [Table 5](#)). This coefficient is negative so that the overall effect of changes in the school level low KS2 attainment impact score is much greater at the bottom of the attainment range. As an example, placing a child one SD below average attainment in a school which was one SD above the average on this scale would increase their expected attainment by roughly 26 points. By contrast placement for a child 1SD above average attainment in the same school would only raise their expected score by 3 points.

The picture given by using the OLS rather than the MIWin school scores is very similar. Strikingly a model which contained only the OLS school impact low KS2 attainment score (SILA) and its interaction with low KS2 attainment is as efficient at predicting outcome as the model in [Table 5](#) with its four MIWin derived measures.³

The SILA measure was assessed on the schools attended at the end of KS4. It was possible that apparently successful schools were influencing the outcome by arranging for unresponsive pupils to go elsewhere. Prospective analyses in which children were allocated to the schools they were in at the end of KS3, and irrespective of the schools they attended during KS4, are not subject to this source of bias and showed a similar association between the SILA measure and outcome.

Placement stability was measured over the period of KS4. Measured at earlier points it is also an important predictor but its effects on examination performance were entirely mediated by the association between this outcome and stability in the two years prior to the examination. Instability at this point is likely to be both a cause and consequence of the difficulties which may affect a child's life. Removing the stability measure from [Table 5](#) has a minimal impact on the other coefficients. The influence of placement stability on attainment thus seems to be independent of that of the school.

We conclude that the attainment of the CLA12 reflects both placement stability and school 'impact'. The latter is most economically explained as a combination of a school's 'impact' on all its pupils and its differential 'impact' on those of low KS2 attainment. The latter appears to benefit all the CLA12 but particularly those who are of low KS2 attainment.

How much can the CLA12 catch up if they are in the right school conditions and long-term stable placements?

We set out to measure 'catch-up' from KS1 to KS4. When ranked at KS1, the 84% of the CLA12 who had a KS1 attainment score were on average 148,465 places behind their peers in the original cohort. Rather than attempting the contentious task of defining catch-up we used 'considerable progress' – an advance of 148,465 ranks or

more by KS4 – as an indicator of it. Just over a fifth (21%) of the CLA12 sample accomplished this feat. Those who did had a relative attainment score $0.26SD$ above the average for the original cohort at KS4 as against $1.23SD$ below the average at KS1. They can fairly be said to have caught up.

To assess the impact of favourable conditions on catch-up we divided the schools into four groups depending on whether their SILA scores were $1SD$ or more below the average (Group 1, 14%), $1SD$ or more above the average (Group 4, 15%) or within this range but on opposite sides of the average (Group 2, 42% including the average; Group 3, 29%). These divisions were not significantly related to the placement stability of the CLA12. Just over half (53% to 57%) of the CLA12 in each of these groups were in stable placements.

Stability and school impact appeared to be independent and equally important correlates of catch-up (see Figure 2). The proportions catching up rose steadily from 4% of those in unstable placements and schools with the lowest SILAs to 52% of those in stable placements and schools with the highest SILAs. These relationships held if we used different outcome measures (e.g. average change in standardised scores, or change in rank order between KS2 and KS4). Consistent with our previous results, the pattern applied to all pupils but the graph rose most sharply among those whose scores were low at KS2 (i.e. the schools appeared to make most difference to them). We concluded that:

- substantial 'catch-up' does occur for some CLA12; and

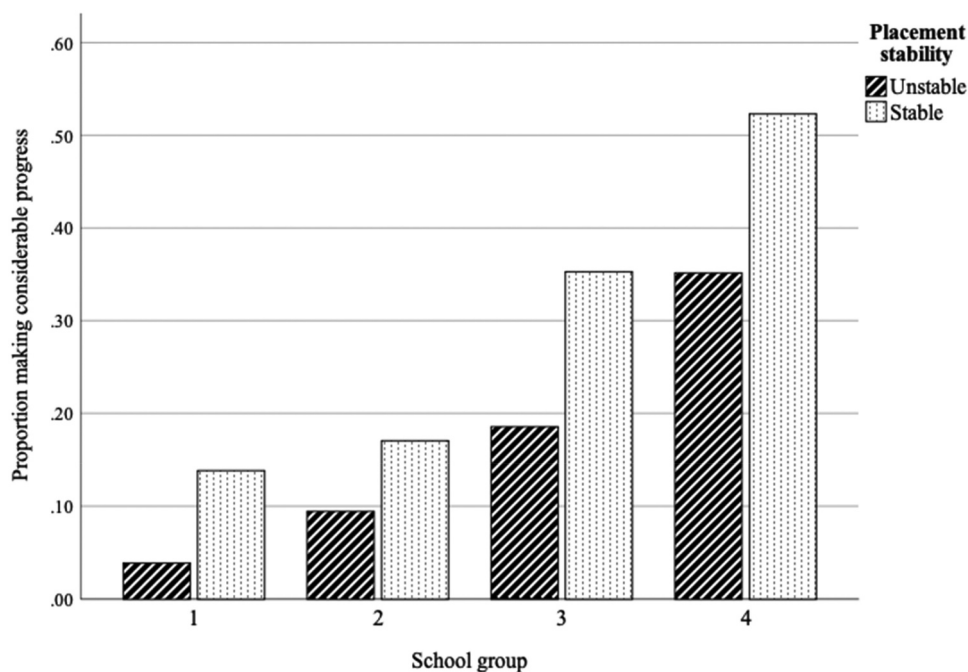


Figure 2. Proportions making considerable progress under different conditions.

- its likelihood varies with the ‘impact’ of secondary schools on children with low KS2 attainment and care placement stability.

Discussion

At the age of 7, the CLA12 are educationally far behind their peers. Yet despite their disadvantages, we found that on average a fifth, and in the most favourable conditions, more than a half, of the CLA12 in mainstream schools made the impressive progress we defined as ‘catch-up’. This article has focussed on the conditions in which they do so.

As predicted from our previous work (Sebba et al., 2015), one condition for catch-up was placement stability. In this sample, half of the CLA12 (49.9%) entered care before secondary school, typically with a very low level of attainment, but then ‘flat-lined’ ending in much the same relative position as they started (Sinclair et al., 2020). In this they contrasted with those entering care later, whose attainment relative to others deteriorated sharply during their teenage years and particularly so if they entered care during the two years prior to their examinations. As reported above, the better performance of the earlier care entrants was almost entirely mediated by the fact that they were much more likely to be in stable placements during the two years prior to their final examination.

It is, of course, possible that instability reflects the situations leading to educational outcomes and does not contribute to them. We think this is unlikely. Instability in long-term care is certainly associated with children experienced as ‘challenging’, less effective caregiving, and poor relationships within the foster or children’s home (Rock et al., 2015, Sinclair et al., 2005, Sinclair, 2005). In foster care, the more likely the child is to be experienced as challenging, the more likely the carers are to respond with rejection, leading to requests that the child is removed. Some carers are less likely respond in this way, and if they do not, breakdown is as unlikely as it is with children likely to be experienced as less challenging (Sinclair & Wilson, 2003). An increase in the number of carers capable, with appropriate support, of managing challenging behaviour without rejection should improve stability and thus educational attainment.

The need for a stable and supportive home is unlikely to be limited to children in care. Many children in need of a social work service but not in care live in families under stress. On average, they have a poor educational start and continue to fall back educationally unless or until an entry to care appears to arrest educational decline (Sinclair et al., 2019). Removal of children from stressful families is, however, a last resort and not justified on educational grounds alone. The development of interventions which can help families with such stresses or insulate children from them remains a crucial, if extremely difficult, policy goal.

The second condition for catch-up was a positive school impact. Ofsted (2019) outlines current research on these issues:

Caring and supportive teachers, a safe and orderly school environment, high expectations, opportunities for pupils to become involved in the life of the school, and good relationships between school and parents appear to be part of a ‘community’-oriented climate that can foster academic resilience, in particular among disadvantaged pupils (Ofsted, 2019, p. 29, underlining added).

This summary describes the impact of schools on disadvantaged pupils as, at least partly, an *enhanced effect* of a 'good school' which benefits all pupils. Palardy (2008) found evidence for *enhanced effects* in schools in challenging conditions but not in others. In this study, schools' *differential effectiveness* with those of low KS2 attainment had a positive 'impact' on all the CLA12 and an *enhanced* one on the CLA12 of low KS2 attainment. There were, however, no strong correlations between the *general* and *differential effects* in our Model 2 and this was true, irrespective of whether we normalised the outcome. *Differential effects* include *enhanced general effects* but also effects that are independent of *general effects* and specific to the group concerned.

Reynolds and his colleagues (2015) describe *differential effects* as well attested but little understood. The effects for at risk groups could arise from practice likely to benefit the specific groups (e.g. the varying use and training of classroom assistants (Blatchford et al., 2012), or the deployment of skilled teachers to lower-attainment sets), or practice likely to benefit all but particularly those who have experienced little academic success (e.g. the encouragement of an ethos that sees 'failure' as a challenge rather than a defining characteristic). An example of the latter effect may be the attachment or trauma aware approaches (Thomas et al., 2019) in which there is increasing interest. It would, after all, not be surprising if such approaches benefitted all, but particularly those who had experienced trauma and attachment issues.

However, research of the kind reported here cannot answer questions about why there may be *differential school effects* for at risk groups. What it can do is point to the astounding progress made by some initially low-attaining children and the vital importance of understanding what brings this about. The point of this current research is not that it answers the policy question of how to bring about these 'good outcomes' but rather that it strongly suggests there is an answer to be found. In this context, we need more qualitative studies (e.g. Ofsted, 2006), some linked to independent evidence on school effects, experimental research on the effects of particular interventions (e.g. Sanders et al., 2020; Scott et al., 2010), and reviews of effective practice (e.g. Ofsted, 2019). In future, research such as ours could also examine the potential correlates of performance (e.g. size, Ofsted ratings).

Policy-makers and practitioners, however, cannot wait for new research. For them our results combined with the precautionary principle would imply the need to:

- Place the CLA in schools where educationally disadvantaged children do well;
- Place teenagers with foster carers and residential homes with a track record of providing stable, supportive placements;
- Make practitioners aware that many children in care have the potential to achieve considerably higher attainment than they do at present;
- Exploit where possible the likelihood that good practice with one disadvantaged group is likely to benefit another.

Professionals are likely to agree with these suggestions which reflect current policy and assumptions. They may also see them as impractical. They are, however, based on what some schools and placements seem able to achieve. Catch-up, it seems, depends on having the 'right' home or placement and the right schooling. The challenge for research is to determine what 'right' means in this context and how it can be brought about.

Notes

1. At the time of data collection, a score of 17 or above for Total Difficulties was categorised as 'abnormal'. This range of scoring has since been divided and renamed into 'high' and 'very high' categories, but the clinical implications remain the same.
2. The analysis that produced these measures is sensitive to the model specification. It seemed possible that some factor – for example, coding mistakes in certain schools or the combination of regression to the mean and the clustering of children of low KS2 attainment in others – might inflate our estimates of the school level variance associated with the risk groups. We ran a model using a normalised outcome, Level 1 variance terms, and KS2 scores treated as a categorical variable divided into ten deciles (to allow for a possible non-linear relationship to outcome). This model reduced the variance attributable to the risk groups which nevertheless remained substantial. Graphical analysis also suggested that the relationship between the school measures and progress was similar over the range of KS2 attainment.
3. The deviance scores were 28,924 for the SILA model and 28,926 for the [Table 5](#) model.

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