The educational outcomes of deaf children in England: Attainment at key stages 1, 2 and 4

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Research Area:
Social Mobility and Vulnerable Learners

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Objectives
The charity's objectives are to further the education of and relieve the needs of deaf children.

Vision
Our vision is a world without barriers for every deaf child.

Charitable aims
Our mission is that together we will overcome the social and educational barriers that hold deaf children back. We are focused on overcoming barriers:

- in local and national services
- in language and communication
- to independence.

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Glossary

ASD
Autistic Spectrum Disorder is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice. This includes Asperger's Syndrome and Autism.

Attainment gap
The difference in average attainment between two groups of pupils.

Attainment at the XXth percentile
Gives the average position of the group in the national attainment distribution. For example, if a group of pupils has attainment at the 75th percentile, this is better attainment than 75 percent of children; if they have attainment at the 50th percentile, this is better than half of pupils and lower than half of pupils; if they have attainment at the 25th percentile, then 75 percent of pupils have higher attainment than this group.

Attainment gap in months
The attainment gap in months gives an estimate of the time it would take on average for pupils to learn enough to close the gap. This gives an idea of how large the gaps are that is simple to understand, but should not be taken as a literal prescription for closing the gap because pupils learn at varying rates. The gap in months is derived from the difference between the average attainment percentiles of two groups of pupils; for example, the average attainment percentile expressed as a fraction for deaf pupils is subtracted from the average attainment percentile expressed as a fraction for pupils with no recorded SEND; the difference between these two fractions is multiplied by 45 at key stage 1, 64 at key stage 2, or 99 at key stage 4 in order to give the deaf attainment gap in months.

Attainment gap in grades
At key stage 4, pupils sit their GCSEs and/or equivalent qualifications. This way of presenting the gap expresses it as the difference in grades between two groups of pupils. This is based on GCSE English and maths because these are the most widely taken GCSE subjects and very important for progression to further study and employment. Since 2017 the grading has been from 9 to 1, where 9 is the best grade and 1 is the lowest; for earlier years we have converted the 'old' A* to G grades onto a 9-to-1 basis.

BCRB
Black Caribbean is an ethnic minority code used in the School Census which collects data on the self-ascribed (or parent/carer-ascribed) ethnicity of pupils in schools.

CIN
Children In Need are those in contact with, and receiving support from local authority children's social care services.

CLA
Children Looked After are those for whom the local authority has been assigned legal responsibility for their care, living arrangements, educational oversight and safety. These include children in foster care and in children's homes.

CPP

Child Protection Plan is the intermediate step between CIN support and CLA. CPP is a statutory status where the local authority has determined that the child is at significant risk of harm and has put a plan in place to protect and monitor their safety and development.

Deaf

We use the term 'deaf' to refer to children with a recorded special need of 'Hearing Impairment' as their first or second need type in the school census. We do not distinguish between different communication approaches or deaf identities (e.g. sign language users versus others) and this group includes all of these. This is because national data are not available for these deaf subgroups.

EAL

English as an Additional Language. This is a broad category that includes children whose first language is not English, including fluent bilingual and multilingual children as well as those who have no English or limited English proficiency.

FSM1-29%

This group were eligible for free school meals for up to 29 percent of the last (up to) 10 years. They can be thought of as being temporarily disadvantaged, which is a proxy for short-term poverty.

FSM6

Pupils eligible for free school meals at any point in the prior six years; this group is commonly referred to as 'disadvantaged' and is a proxy for poverty, but we use 'FSM6' in charts where there is not enough space for full labels.

FSM80

Pupils eligible for free school meals for at least 80 percent of the last (up to) 10 years. This group is usually referred to as 'persistently disadvantaged' and is proxy for long-term poverty, but we use 'FSM80' in charts where there is not enough space for full labels.

HI

Deafness is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice but is officially recorded as 'Hearing Impairment'. We acknowledge that the term 'hearing impairment' is considered by many deaf people to be offensive, and we use this term only in this report when referring to DfE systems for recording children with SEND.

MLD

Moderate Learning Difficulty is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice. Support for learning difficulties may be required when children and young people learn at a slower pace than their peers, even with appropriate differentiation.

MSI

Multi-Sensory Impairment is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice. Impairment is classified as 'multi-sensory' where children have a combination of vision and hearing difficulties.

OTH
Other Special Educational Need is recorded where none of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice apply and the child has a form of SEND need without its own data code.

PD
Physical Disability is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice.

PMLD
Profound and Multiple Learning Difficulty is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice. Learning Difficulties are classified as 'profound and multiple' where children are likely to have severe and complex learning difficulties as well as a physical disability or sensory impairment.

SEMH
Social, Emotional and Mental Health Needs is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice. This category replaced the previous category of Behaviour, Emotional and Social Difficulties when the Code was reformed in 2014.

SEND
Special Educational Needs and Disabilities. Figures for SEND are those recorded by schools in the school census reflecting school and LA assessments. Although an imperfect reflection of needs, this is the only basis on which national data are available.

SLCN
Speech, Language and Communication Needs is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice.

SLD
Severe Learning Difficulty is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice. Learning Difficulties are classified as 'severe' where children are likely to need support in all areas of the curriculum and associated difficulties with mobility and communication.

SPLD
Specific Learning Difficulty is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice. This includes difficulties such as dyslexia, dyscalculia and dyspraxia.

VI
Visual impairment is one of the types of need recognised in the Special Educational Needs and Disabilities Code of Practice.

WROM
White Gypsy/Romany is an ethnic minority code used in the School Census which collects data on the self-ascribed (or parent/carer-ascribed) ethnicity of pupils in schools.

Executive Summary

In this report we address the deaf children's attainment gap, defined as the difference in attainment between deaf children and children with no recorded special needs. In so doing, we move beyond the general picture for all children with SEND as presented in our annual reports on disadvantage gaps, and towards the particular for our first deep-dive into one specific type of SEND need.

We look at the attainment of deaf children through headline attainment gap time series at three key stages. We then delve into the variation in deaf GCSE attainment to map out the heterogeneity of the group along the dimensions of subgroups of deaf children with other needs and characteristics, school types attended in the secondary phase, and geographical variation between local authorities and their specialist Teacher of the deaf services.

Key findings

- In 2019, the deaf children's attainment gap was equivalent to 8.8 months of learning at key stage 1 (age seven), 12.0 months at key stage 2 (age eleven) and 17.5 months at key stage 4 (age sixteen). The deaf GCSE gap can also be expressed as a gap in the mean grades for GCSE English and maths of 1.3 grades per subject.
- The size of the gap in months is almost twice as large for GCSEs as at key stage 1, and this reflects larger learning gaps as children get older and the school curriculum expects a greater volume and complexity of knowledge.
- However, this does not mean deaf children have fallen further behind other pupils. In fact, the deaf cohort aged seven in 2015 ranked at the 30th percentile and had climbed to the 34th percentile by age eleven in 2019. The deaf cohort aged eleven in 2014 ranked at the 33rd percentile and had climbed to the 36th percentile by age sixteen in 2019.
- Another way to gauge the size of the deaf GCSE gap is to compare it with attainment gaps for other groups. The deaf gap (17.5 months) is most similar in size to the disadvantage gap (18.1 months).
- Deaf children and disadvantaged children eligible for free school meals in the last six years both had attainment that was lower than almost two thirds of pupils in 2019.
- The trend in the deaf children's attainment gap shows moderate improvement from 2011 to 2019 at KS1, KS2 and KS4; by the time pupils sit their GCSEs this improvement is equivalent to a reduction in the gap of 0.2 grades per subject or 3.0 months of learning at KS4.
- These headline deaf attainment figures mask wide variation in outcomes within the deaf group of pupils which sheds important light on the complexity of the needs of deaf children.
- Improvements in deaf GCSE grades have been concentrated among non-disadvantaged deaf pupils, and among deaf girls.
- Deaf, disadvantaged pupils achieved an average GCSE grade per subject of 2.5, behind 77 percent of pupils, compared with an average 'good pass' grade of 5.0 for pupils who were neither deaf nor disadvantaged. Comparing these two groups, there was a gap equivalent to almost three years of learning (33.7 months) in 2019.
- Deaf pupils who speak or sign English as an additional language faced a double challenge to communicating with their hearing and English-speaking peers and teachers and this was reflected in GCSE attainment that was behind two thirds of pupils, with a mean grade of 2.7.

- Deaf Gypsy/Roma children had the lowest GCSE attainment with an average grade per subject of 0.7, placing them behind 94 percent of pupils, followed by deaf Black Caribbean pupils with an average grade of 2.6, behind three quarters of pupils nationally, whereas deaf Indian pupils had the second highest mean grade of 3.8 and deaf Chinese pupils had a mean grade of 5.3, which is a 'good' pass.
- Across local authorities, deaf attainment ranged from the 21st percentile (below over three quarters of children) in Nottingham up to the 58th percentile in Wokingham, which is 5 percentiles above the national average for children with no SEND.
- This mixed picture points to the importance of deprivation and other pupil characteristics among deaf children in influencing their GCSE attainment.

Headline conclusions

Overall, our findings demonstrate the considerable heterogeneity of deaf children and their experiences in school.

Deaf children living in affluent areas such as Wokingham have average GCSE attainment that compares favourably with children with no recorded SEND, nationally. But, on average, deaf children face a similar attainment gap to disadvantaged children (those eligible for free school meals in the last six years) by the age of sixteen.

This average deaf GCSE gap masks not only the high attainment of deaf children in the most affluent areas, but also the worryingly low attainment of deaf children who are socio-economically disadvantaged or have other special educational needs or disabilities.

Deaf pupils have experienced moderate improvements in their attainment at each of key stage 1,2 and 4 in the nine years from 2011 to 2019. The most important other type of SEND that contributes to the deaf attainment gap is speech, language and communication needs at KS1, with learning difficulties growing in importance by key stage 2 and smaller contributions from Autism and mental health needs by key stage 4.

Recommendations

Given the range of needs experienced by deaf children that influence their attainment resulting in widely varying results, the government, schools and local authorities should develop better holistic support packages that recognise these varied and sometimes complex needs.

Turning to school funding, our findings suggest that the national funding formula could be improved if it took account of multiple additional needs of the same individual child, instead of simply summing the numbers of pupils with each separate additional need. The cost of meeting multiple needs can be more than the sum of its parts if one need increases the complexity of meeting another need.

There is also a clear case for the rationalisation of the high needs funding formula, in order to put each authority on an equal footing in receiving according to the needs of their population instead of budgets depending on historical expenditure.

It would also be sensible to base the overall high needs budget quantum on the actual cost of providing necessary services, including specialist Teachers of the deaf.

Beyond the SEND system and the wider education system, it is clear that the combination of poverty and deafness is having a detrimental effect on children's life chances.

Introduction

Schools and local authorities in England provide for deaf children through the Special Educational Needs and Disabilities (SEND) system which is set out in the SEND Code of Practice[i], last revised in 2014. In theory the code provides for coordinated education, health and social care services from birth to age 25, but in practice there is inconsistent engagement from NHS health services and many shortcomings of the education and social care services.[ii] [iii]

Schools and local authorities must also follow the Equality Act 2020. This requires them to make all necessary 'reasonable adjustments' and to think proactively about how they can reduce disadvantage for disabled people.

Deaf children are represented and officially recorded in the SEND system under the term 'hearing impairment' and this report will focus on these children because that is the basis of the available data, but we will refer to this group as 'deaf children' throughout. We acknowledge that the term 'hearing impairment' is considered by many deaf people to be offensive, and we use this term only in this report when referring to DfE systems for recording children with SEND.

The need for new analysis of the attainment of deaf children

The Department for Education publishes annual school attainment statistics for groups of children with various characteristics, including children with SEND, but there are several limitations to these statistics, such as:

- In recent years, only headline figures for all children recorded with SEND are provided[iv] [v]; the Department no longer routinely publishes separate attainment figures for children with different levels of SEND support (School Support versus LA-assessed Education, Health and Care Plans) and there are no annual figures for the attainment of children with different types of SEND need, such as deaf children.
- Attainment measures published are those designed primarily with mainstream schools in mind, are changed over time subject to government policy, and are not easy to compare across different key stages when children are at different ages and stages of development. What is published depends on the priorities of the government of the day rather than the needs of all statistics users.
- There is little analysis of the stories of different groups of children with SEND and what the implications of those are for education policy. Because of a lack of longitudinal analysis of the available data, it is often assumed that only a small minority of children have SEND and this sets the tone for a segregated system. In fact, a large minority (4 in 10 as of 2016)[vi] are recorded with SEND at some point during school years reception to year 11.

Objectives for this report

This report sets out the results of a new data analysis which aims to address several of the evidence gaps and shortcomings listed above, for deaf children. It will contribute to our knowledge about the educational outcomes of deaf children in the following ways:

- Analysis of deaf children's attainment that provides the most consistent time series from 2011 to 2019 that we can construct, taking into account the types of schools that deaf

children attend, changes to school curricula, exams and assessments and metrics used to report attainment, as well as changes to the recording of SEND.

- Commentary that addresses changes and inconsistencies that affect the data.
- Analysis that enables comparisons of deaf children at different ages and stages. This report includes analysis of attainment at ages seven (KS1), eleven (KS2) and sixteen (KS4).
- Detailed analysis that considers different sub-groups of deaf children according to the other SEND primary and secondary need types that some are recorded as having.
- Intersectional analysis that considers the other characteristics of deaf children, aside from their SEND needs, such as socio-economic disadvantage, gender and ethnicity.
- Longitudinal analysis that takes into account the fact that recorded SEND and English as an Additional language can change over time, as can disadvantage measured by free school meals eligibility.
- Analysis of attainment by the type of school attended and by the local authority in which the child lives.
- Data coverage that includes all deaf children with results at KS1, KS2 or KS4 including those in mainstream academies, free schools and local authority schools, local authority and academy special schools, alternative provision schools and pupil referral units, and non-maintained and independent special schools.
- Comparisons between deaf children and other groups of children who may experience educational disadvantage from EPI's wider research on this topic.

Data and methods

The data analysed for this report were sourced from the National Pupil Database and included results data for key stage 1, 2 and 4, spanning the academic years 2010/11 to 2018/19 inclusive. These attainment data were augmented with school census records for the spring terms of 2005/06 to 2018/19 inclusive which contain detailed information about pupil characteristics, including SEND need level, primary and secondary need types.

Definition of 'deaf' and other SEND needs

We conducted exploratory analysis to establish how many years of SEND recorded status were optimal to include in our definition of 'deaf', with the objective of including as many deaf children as possible, but also considering the impact on attainment of including children whose deaf status was only recorded earlier in their school life.

In practice, the inclusion of these children with early deafness records in the group did not lead to substantially different attainment outcomes. However, it was still necessary to define the number of years of SEND records, and we set this at six years for KS2 and KS4, and three years for KS1 which is all the available years for most pupils at age seven.

The SEND data only include children who have been formally identified as having a special educational need and recorded in the school census. Schools vary considerably in their identification and recording practices.

The number of deaf children recorded in the school census has been at around three thousand per key stage 4 year group and has been broadly similar since 2011 for this age group. However, the numbers of recorded deaf children have risen from around two thousand to around three thousand per year group at key stage 2 since 2011. At key stage 1, the number of deaf children recorded per year group has risen from around 1,400 to 2,300 since 2011. Although a number of children will become deaf during childhood, this pattern is suggestive of continued undercounting during early primary education, but some improvements to identification by the end of primary school. However, these increases in recorded numbers of deaf children in primary school are small relative to the scale of undercounting that is likely to exist given that in 2021, the number of children recorded as deaf in the School Census was 42 percent lower than the number of school-aged deaf children reported by local authorities.[vii]

Our definition of deaf included children recorded as having a 'hearing impairment' in any of the six (or three) most recent spring terms, either as a 'primary' need or a 'secondary' need.

Other SEND need types were defined in the same way. The definition of 'disadvantage' was also based on six (or three) years of Free School Meals eligibility, with pupils eligible in any of those years being defined as disadvantaged.

We used different record spans for our definition of 'persistent disadvantage'. This used up to ten years of records (ten at KS4, seven at KS2 and three at KS1) and defined pupils as persistently disadvantaged if they were eligible for free school meals for 80% or more of the available years.

The same (up to) ten-year span was used for English as an additional language because the records for this are known to be truncated to the three first years in which the child attends a state-funded school in England in many cases, as this is the basis of additional funding for these pupils.

We included pupils attending the following types of schools in the analysis:

- Academy, sponsor-led
- Local authority, community
- Local authority, voluntary-aided
- Local authority, voluntary-controlled
- Local authority, foundation
- City Technology College
- Local authority, community special
- Local authority, foundation special
- Non-maintained special
- Independent, special
- Independent, mainstream
- Other independent, special
- Local authority, pupil referral unit
- Academy, special
- Academy, converter
- Academy, converter special
- Academy, converter AP
- Academy, sponsor-led AP
- Alternative provision
- Free school, AP
- Free school, UTC
- Free school, Studio school
- Free school, special
- Free school, mainstream

Attainment measures

Across our analysis we used data on the attainment of pupils in English and maths for consistency between key stages. At key stage 1, we used attainment levels (eight ordered levels and other outcomes per subject) for years prior to 2015 and attainment benchmarks (ten ordered outcome categories) for 2015 to 2019. At key stage 2, we used fine grades point scores for years prior to 2016 and test scores for 2016 to 2019. At key stage 4, we used GCSE English and maths grades (A*-G prior to 2017; 9 to 1 for 2017 to 2019).

The (mean) average across English and maths was taken so that pupils with results in one subject but not the other (e.g. due to missing school on the day of the test) could be included at key stages 1 and 2, but at key stage 4 the absence of a GCSE in either English or maths was scored as zero

because without a qualification in these subjects, young people are hampered in progressing to further study or work.

For comparability over time and with other key stages, we used the percentile rank position of each pupil's attainment within the national distribution (including special schools and alternative provision). This measure standardises attainment so that we can still make comparisons when there is a change of curriculum or assessment, or between different key stages. This measure is expressed in percentiles (and sometimes converted to months of learning progress in addition to the percentile figures to give the maximum interpretability to the measure).

In addition to the 'mean rank difference' approach to measuring attainment gaps described in the previous paragraph, at key stage 4 we also report the average GCSE grade per subject (English and maths) on the 9 to 1 scale in order to give a sense of the implications for progression after age sixteen.

Time Series analysis of deaf attainment gaps

In this section of the report, we present a time series analysis of deaf attainment gaps from 2011 to 2019 for each of the three key stages, key stage 1, 2 and 4. This sets the scene for the following sections of the report which focus on the variation in deaf GCSE attainment between different groups of pupils, different types of schools and geographically by local authority area.

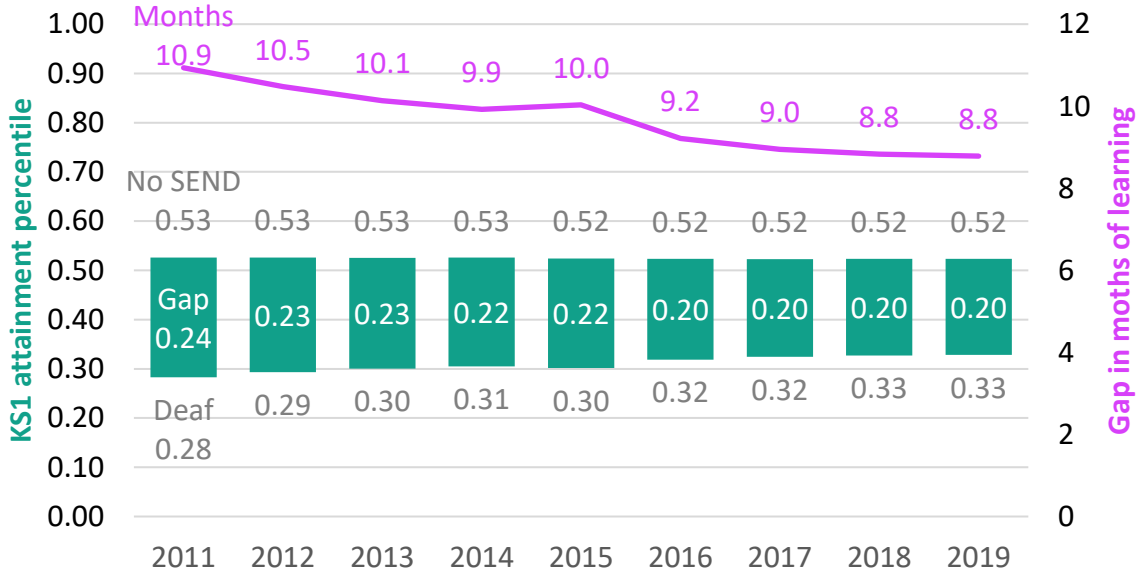
Headline time series for deaf children at key stage 1 (age seven)

Beginning at key stage 1, we include the national curriculum assessments in speaking and listening, reading, writing, and maths from the attainment assessments made by teachers and informed by pupils' performance on standardised tests. These feed into a total assessment which is used to rank order pupils' attainment within the national distribution and create percentile measures.

In 2019, the size of the attainment gap was 20 percentiles, which can be expressed alternatively as 8.8 months of learning. This gap is made up of the difference between deaf children's attainment, at the 33rd percentile, and the attainment of children with no recorded SEND, at the 52nd percentile. Deaf children's average attainment is positioned behind (lower than) two thirds of children at key stage 1.

Looking back to 2011, we can observe that the deaf attainment gap has narrowed somewhat from a starting value of 24 percentiles or 10.9 months. This means the change in the gap over nine years was -4 percentiles, or -2.1 months of learning, and that in 2011 the starting attainment for deaf children at KS1 was at the 28th percentile, behind almost three quarters of children. This improvement or reduction in the deaf attainment gap over time is moderate in size, but a reasonably consistent trend with two brief pauses over nine years.

Figure 1: Headline attainment gap trend for deaf children at key stage 1



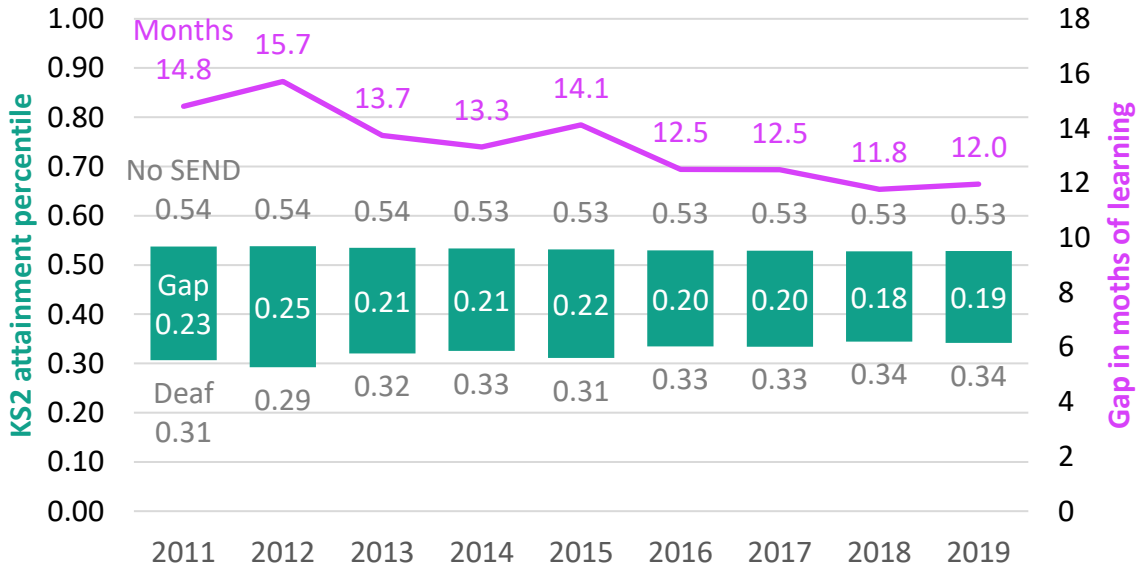
Headline time series for deaf children at key stage 2 (age eleven)

At key stage 2, we include the national curriculum assessments in reading and maths in the form of fine grades point scores until 2016 and then the new key stage 2 results categories based on pupils' performance on standardised tests. These feed into a total assessment which is used to rank order pupils' attainment within the national distribution and create percentile measures.

In 2019, the size of the attainment gap was similar to key stage 1 at 19 percentiles, which can be expressed alternatively as 12.0 months of learning for children of age eleven. This gap is made up of the difference between deaf children's attainment, at the 34th percentile, and the attainment of children with no recorded SEND, at the 53rd percentile. Deaf children's average attainment is positioned behind almost two thirds of children at key stage 2.

The similarity with key stage 1 continues when looking back to 2011. We can observe that the deaf attainment gap has also narrowed somewhat from a starting value of 23 percentiles or 14.8 months at this age. This means the change in the gap over nine years was -4 percentiles, but this translates as -2.8 months of learning at age eleven. In 2011 the starting attainment for deaf children at KS2 was at the 31st percentile, behind two thirds of children. Again, the improvement in the deaf attainment gap over time is moderate in size, but a reasonably consistent trend with some minor volatility between individual results years.

Figure 2: Headline attainment gap trend for deaf children at key stage 2



Headline time series for deaf children at key stage 4 (GCSE, age sixteen)

Key stage 4 is arguably the most important attainment benchmark for equality purposes due its universal use as a set of 'passport' qualifications that are required to progress to further learning or employment. At this stage, we include the results of GCSE English and maths, scoring the grades as zero where there is no entry or a failed entry because these two subjects are so critical to young peoples' life chances. These grades on a scale of 9 to 1 (or 0) are used to rank order pupils' attainment within the national distribution and create percentile measures.

In 2019, the size of the attainment gap was slightly smaller than at key stages 1 and 2 at 18 percentiles, which translates to 17.5 months of learning for children of age sixteen. This gap is made up of the difference between deaf children's attainment, at the 36th percentile, and the attainment of children with no recorded SEND, at the 53rd percentile. Deaf children's average attainment is positioned behind just under two thirds of children when they reach their GCSEs.

At key stage 4 we have an additional 'currency' for expressing attainment levels and gaps which is the mean grade. Looking back to 2011, we can observe that the deaf attainment gap has also narrowed somewhat from a starting value of 21 percentiles, 1.5 grades, or 20.5 months at this age. This means the change in the gap over nine years was -3 percentiles or -0.2 grades, but this translates as -3.0 months of learning at age sixteen.

One possible explanation for the reduction in the gap over the ten years analysed is that over this period, FSM eligibility has increased twice as fast among children with no SEND (the percentage ever eligible in the last 10 years increased by 31 percent) as it did among deaf children (an increase of 15 percent). This relative shift in the composition of the groups may have contributed to faster improvement by the deaf group, which had lower starting attainment.

Another possible contributory factor was the growth in identification of deafness at earlier ages over the ten-year period; this better early recognition may have led to better and earlier support for deaf children, and/or the newly identified deaf children may have faced fewer communication challenges than other deaf children who had been identified early even in 2011.

There is a remarkable degree of similarity in the percentiles gap trends across the three key stages in our analysis, but what distinguishes them is that as children get older and their education becomes more sophisticated, the percentile gaps represent increasing quantities and complexity of learning which is reflected in the 'month gap' figures.

In 2011 the starting attainment for deaf children at KS2 was at the 34th percentile or mean grade of 3.0 on a 9-to-1 scale, behind almost two thirds of children. Again, the improvement in the deaf attainment gap over time is moderate in size, but a reasonably consistent trend with some volatility and pauses in individual results years.

Figure 3a: Headline GCSE attainment gap trend for deaf children at key stage 4 (percentiles)

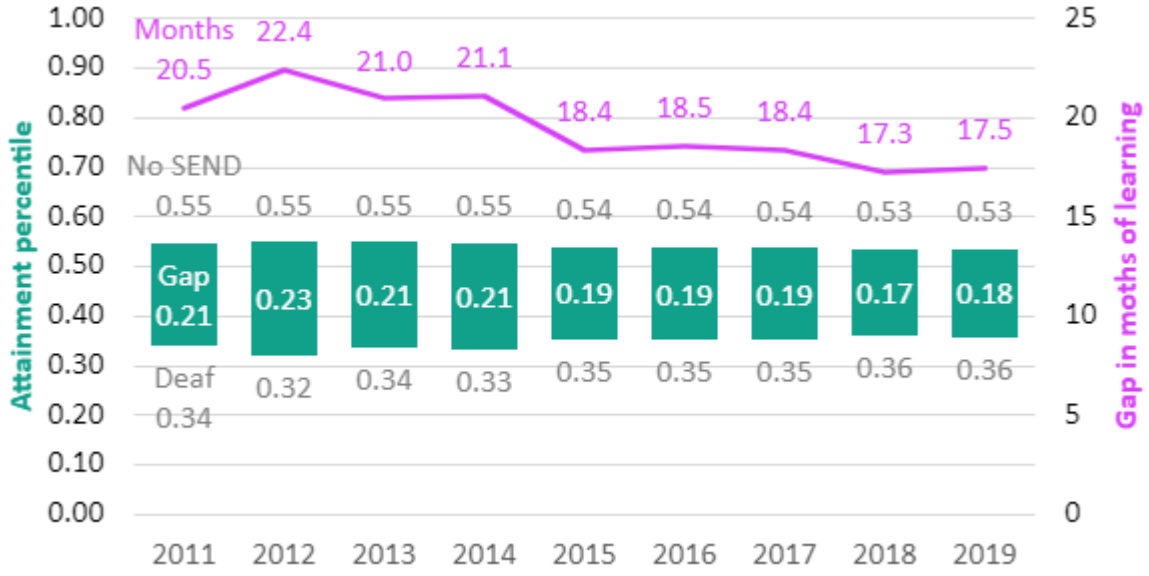
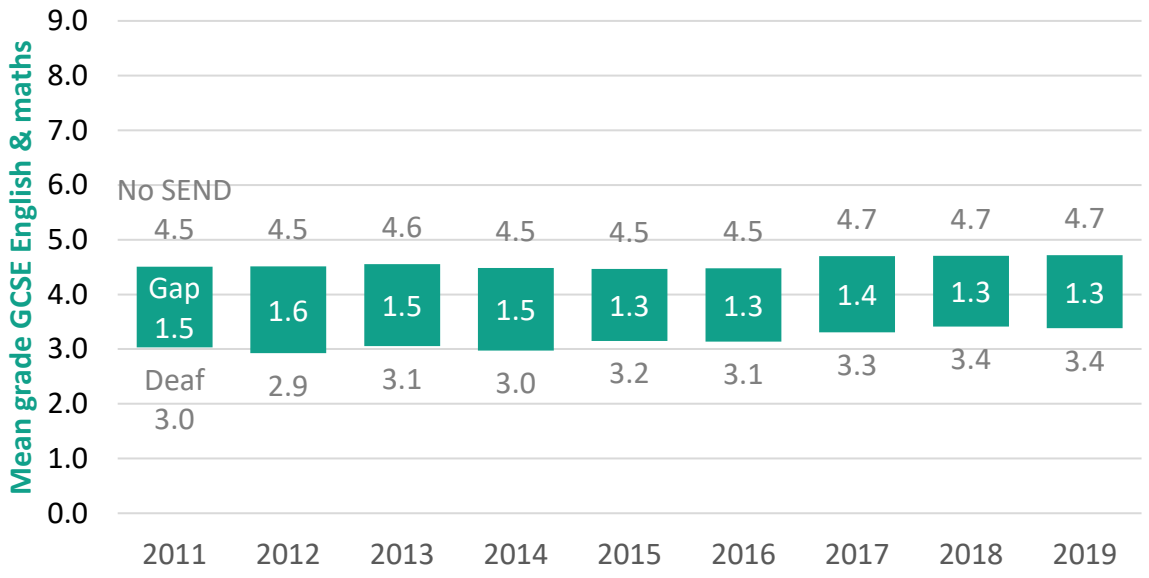


Figure 3b: Headline GCSE attainment gap trend for deaf children at key stage 4 (mean 9-1 grades



Breakdown of deaf children's attainment at KS4 (GCSE)

This section of the report contains detailed analysis of deaf children's GCSE attainment in English and maths for a variety of different groups. This includes deaf children with additional SEND need types, by gender, deprivation, English as an additional language, ethnicity and school type.

Deaf GCSE attainment for children with additional SEND need types

In figures 4a to 4c we analyse the intersections of different types of SEND need with deafness for deaf children with additional need types. There was significant change between 2011 and 2019 in the GCSE attainment of children who were deaf and had multi-sensory impairment (MSI, +12 percentiles) and of children who were deaf and Autistic (ASD, +12 percentiles). However, the numbers of children in these groups within the GCSE cohort also increased substantially from 28 to 53 (deaf + MSI) and from 59 to 116 (deaf + ASD).

This example illustrates the complexity of interpreting changes in the attainment of subgroups of deaf children given that the SEND recording practices and support thresholds may be fluid over time, and the real prevalence of need combinations can change over time due to factors such as improvements in medical science, and increases in poverty that are associated with some needs more than others. Any of these factors can result in changes to the composition of the deaf subgroup that can have knock-on implications for attainment.

However, what is much more broadly stable between 2011 and 2019 is the relative order of the deaf intersectional subgroups by GCSE attainment. Unsurprisingly, the lowest attainment (and largest gaps) are for deaf children with additional severe learning difficulties (SLD) or profound and multiple learning difficulties (PMLD).

Perhaps, more surprisingly, there was no difference in attainment between these two groups (both at the 5th percentile in 2019) even though they are intended to be hierarchical. Looking at the mean grades, deaf + SLD children actually had slightly lower attainment (0.3) than deaf + PMLD children (0.4), but both were so low as to be outside the range and types of learning measured in GCSE English and maths. This is likely to reflect idiosyncrasies in the way schools use the SEND need type codes and record these in the school census, as well as some children progressing from SLD to PMLD as their recorded need as schools follow the 'graduated response' approach to assessment and intervention.

The next deaf intersectional needs groups by order of GCSE attainment were deaf plus moderate learning difficulty (MLD, 18th percentile, mean grade 2.0), deaf plus social, emotional and mental health (SEMH, 22nd percentile, mean grade 2.4) and deaf plus speech, language and communication needs (SLCN, 22nd percentile, mean grade 2.3).

Ahead of these deaf intersectional groups were deaf plus specific learning difficulty (SPLD, 25th percentile, mean grade 2.7), deaf plus Autistic (ASD, 28th percentile, mean grade 2.7), and deaf plus 'other' SEND need (OTH, 29th percentile, mean grade 2.9).

The deaf intersectional groups with the highest GCSE attainment in 2019 were deaf plus physical disability (PD, 31st percentile, mean grade 3.0) and deaf plus multi-sensory impairment (MSI) and

deaf plus visual impairment (VI) that both had average attainment at the 32nd percentile and mean GCSE grades of 3.0.

Figure 4c decomposes the total deaf attainment gap for all deaf pupils according to the contributions of each intersectional need group to the 18 percentile gap in 2019. While severe or profound and multiple learning difficulties are associated with the lowest attainment, few pupils have these in combination with being deaf, and more deaf children have higher-incidence but less severe needs associated with relatively higher attainment. When both the incidence of each combination and its level of associated attainment are considered, the largest contributions to the deaf attainment gap come from:

- Deaf + MLD (-6 percentiles)
- Deaf + SLCN (-5 percentiles)
- Deaf + SEMH (-3 percentiles)
- Deaf + SPLD (-3 percentiles)

All the other intersectional needs deaf subgroups made smaller contributions to the deaf GCSE gap. Children who were deaf as their sole SEND need *decreased* the gap by 6 percentiles as their attainment was higher than the average for the whole deaf group and they were the largest subgroup accounting for 772 out of 3,166 deaf pupils (24 percent) in the cohort. The net gap after all contributions including this decrease was 18 percentiles.

This gap decomposition is not the same at every key stage. At key stage 2, the largest contributions to a 19 percentile total deaf attainment gap are from speech, language and communication needs (deaf + SLCN, -6 percentiles), followed by moderate learning difficulties (deaf + MLD, -5 percentiles). However, the contribution of deaf + SLCN (-7 percentiles) to a total deaf attainment gap of 20 percentiles is the single dominant contributor at key stage 1, with all other intersectional needs subgroups contributing only minimally.

Figure 4a: Deaf GCSE attainment by type of other SEND need, 2019 (percentiles)

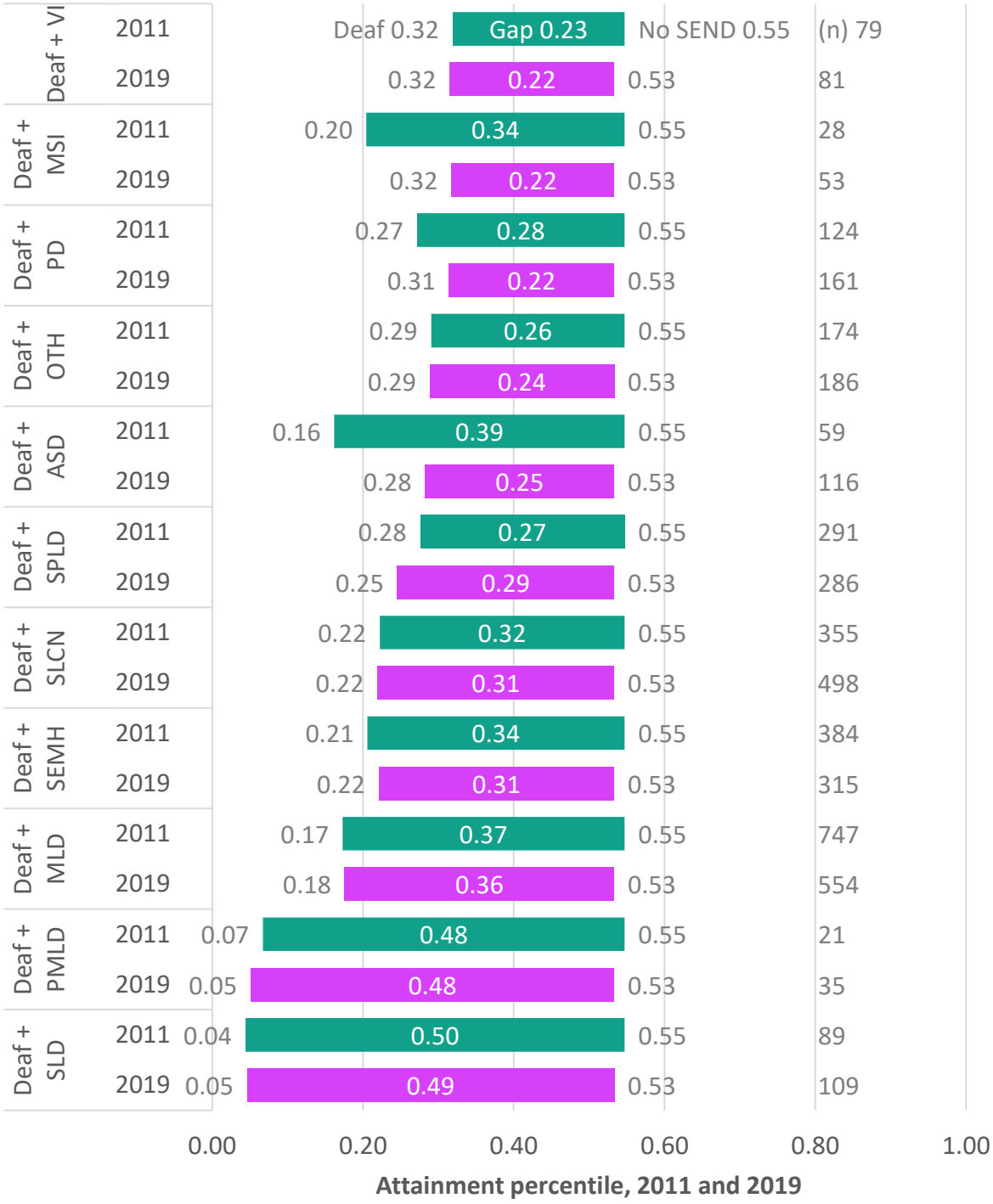


Figure 4b: Deaf GCSE attainment by type of other SEND need, 2019 (mean 9-1 grades)

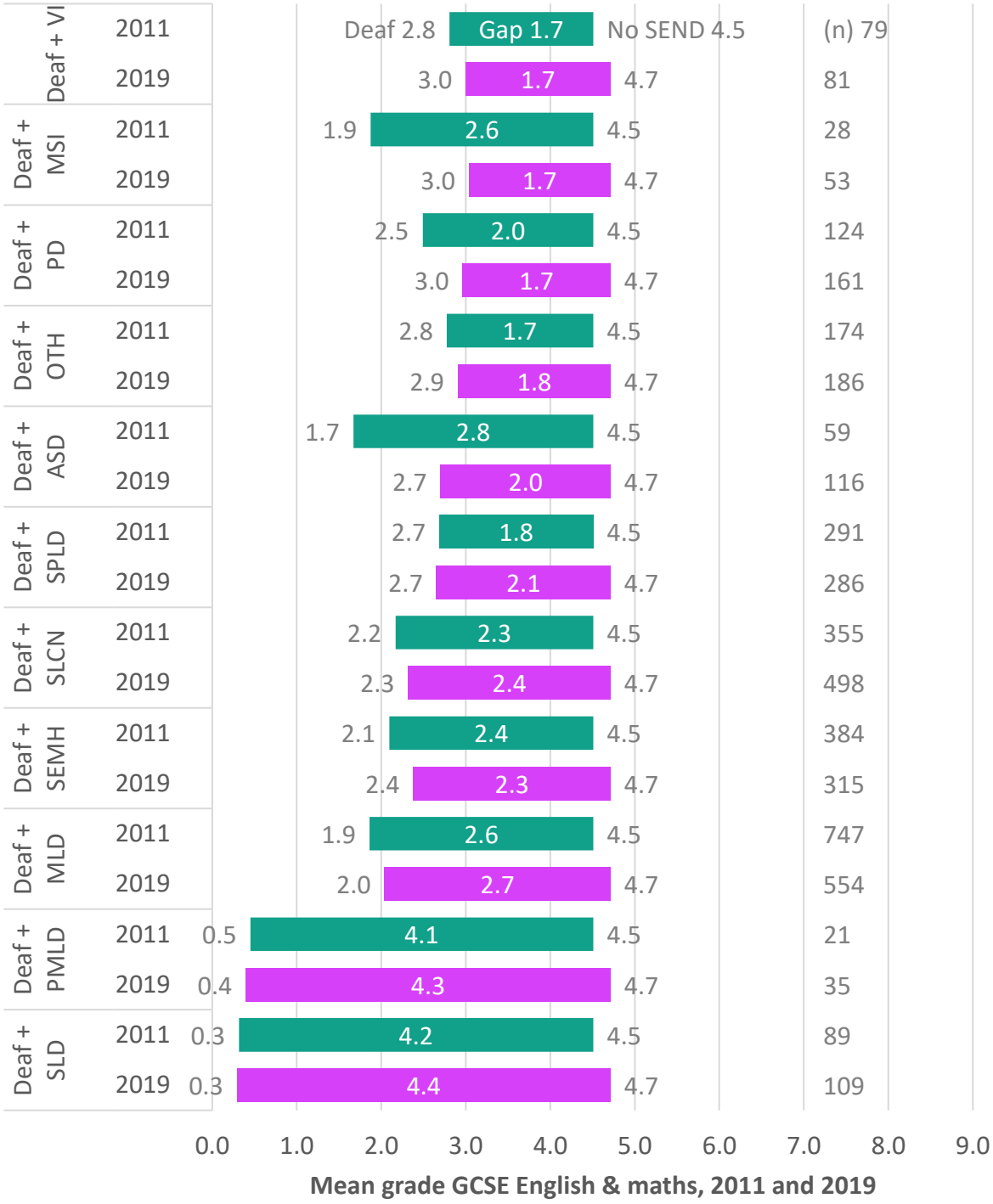
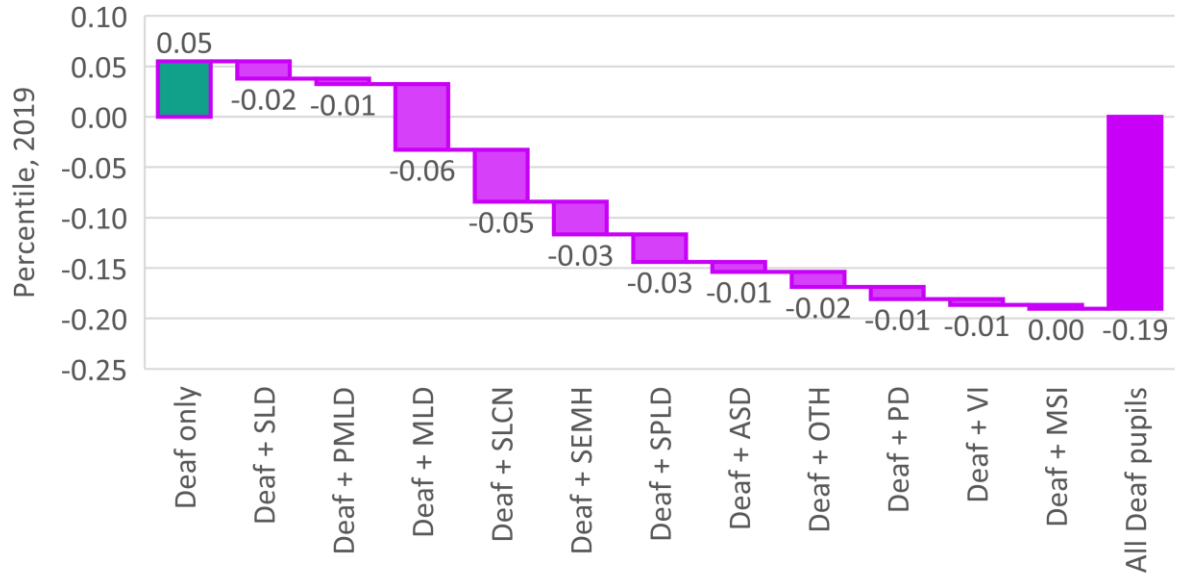


Figure 4c: Deaf GCSE attainment by type of other SEND need, 2019 (gap decomposition)



Deaf GCSE attainment by gender

Our analysis of deaf children's attainment by gender reveals that, like their counterparts with no SEND, deaf girls have consistently better GCSE grades than deaf boys, and this advantage has increased from 2011 to 2019.

The attainment of deaf girls has increased from the 36th percentile to the 38th (+2 percentiles), which translates as an increase in mean GCSE grades from 3.1 to 3.6 (+0.5 grades). Meanwhile the attainment of deaf boys has remained at the 33rd percentile, but this masks a modest increase in their mean GCSE grades in English and maths from 2.9 to 3.2 (+0.3 grades).

While the deaf/no-SEND attainment gap was 1.3 grades in 2019 for both deaf boys and deaf girls, their different starting points and progress since 2011 left deaf boys 0.4 grades or 5 percentiles behind deaf girls by 2019. A simpler way to describe this is to say that the progress in GCSE attainment made by deaf children since 2011 has mostly been concentrated among girls.

Figure 5a: Deaf GCSE attainment by gender, 2011 to 2019 (percentiles)

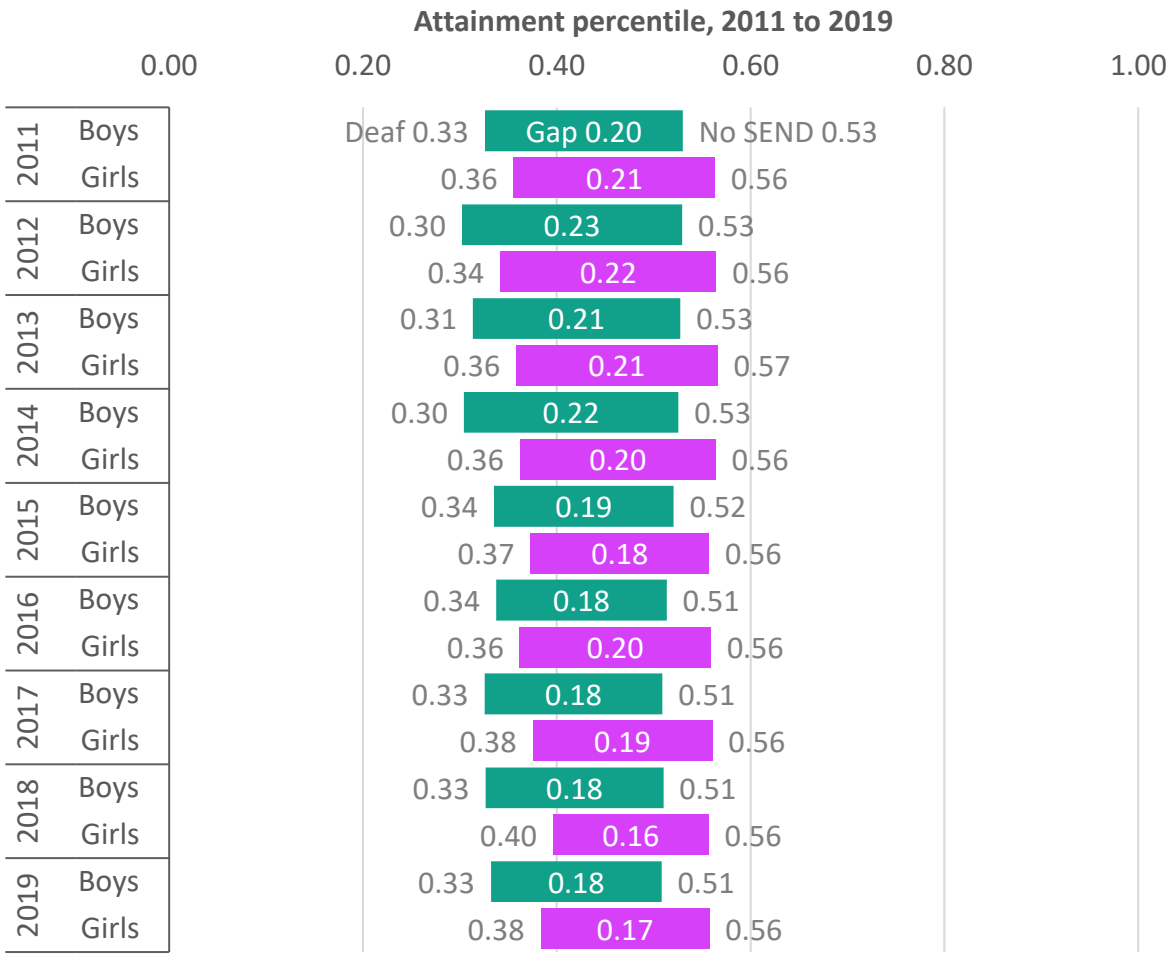
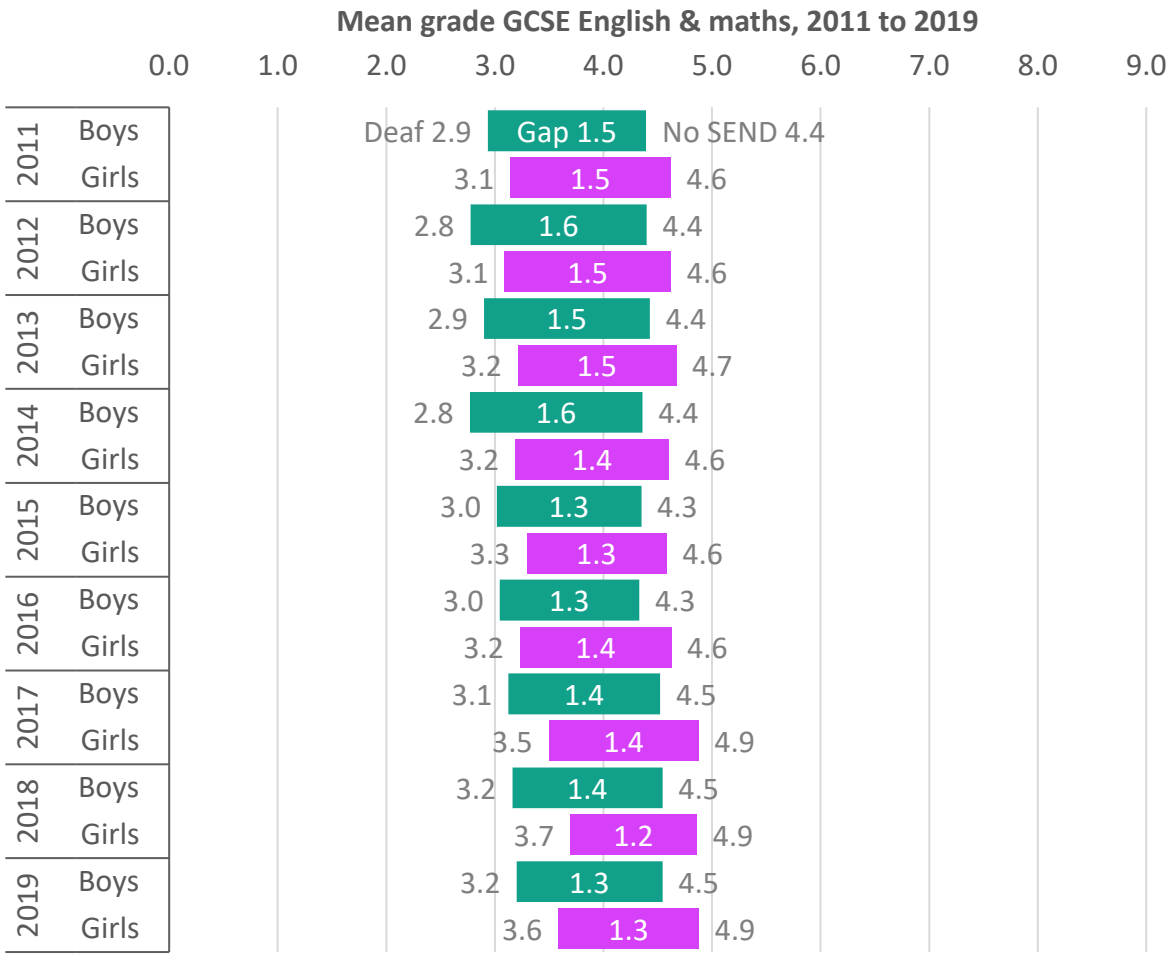


Figure 5b: Deaf GCSE attainment by gender, 2011 to 2019 (mean 9-1 grades)



Deaf GCSE attainment by socio-economic disadvantage

The definition of deprivation used in our analysis is 'disadvantage' based on six years of free school meals (FSM) eligibility, with pupils eligible in any of those years being defined as disadvantaged. This is the same definition EPI uses in its series of annual reports on the disadvantage gap, which have identified that having improved (reduced) modestly in the first half of the last decade, the disadvantage gap made ever-slower progress and finally began to widen in the most recent years before the pandemic. Our analysis of the deaf attainment gap at age sixteen spans this same time period from 2011 to 2019.

In 2011, disadvantaged children with no SEND had slightly better GCSE grades in English and maths than deaf children who were not disadvantaged (mean grades of 3.5 versus 3.4, respectively). The difference between the groups increased slightly in the following two years, before settling with both groups at mean grades of 3.8 in each of the three years ending in 2019.

While the mean grades to one decimal place were equal, the mean percentiles of the two groups had separated slightly by 2019 with deaf non-disadvantaged children at the 42nd percentile just ahead of disadvantaged children with no SEND at the 40th percentile.

Over the nine years where this slight reversal of attainment patterns took place, there was little change in the GCSE grades of children who were deaf *and* disadvantaged, at the 23rd percentile in 2011 and 2019, with the mean grade rising slightly from 2.2 to 2.5. The deaf/no SEND attainment gap was also largely unchanged.

This stagnant picture is less worrying than the headline disadvantage gap in that it is not getting worse but is more worrying in that deaf children living in poverty have even lower attainment than those who are disadvantaged but not deaf. In fact, their mean percentile position is slightly worse than that of looked-after children, who are typically the most educationally vulnerable group in univariate (non-intersectional) analyses. The combined effect was such that when children who were both deaf and disadvantaged are compared with children who had no SEND and were not disadvantaged, there was a gap equivalent to almost three years of learning (33.7 months) in 2019. The gap between non-disadvantaged deaf children and non-disadvantaged children with no SEND was equivalent to 15.6 months.

Deaf children were more likely to experience poverty than children with no SEND. In 2019, 33 percent of deaf children at KS4 were disadvantaged, compared with 23 percent of children with no SEND. This was even more marked for persistent disadvantage, which deaf children at KS4 were almost twice as likely to experience as children with no SEND (19 percent versus 10 percent).

Figure 6a: Deaf GCSE attainment by disadvantaged status, 2011 to 2019 (percentiles)

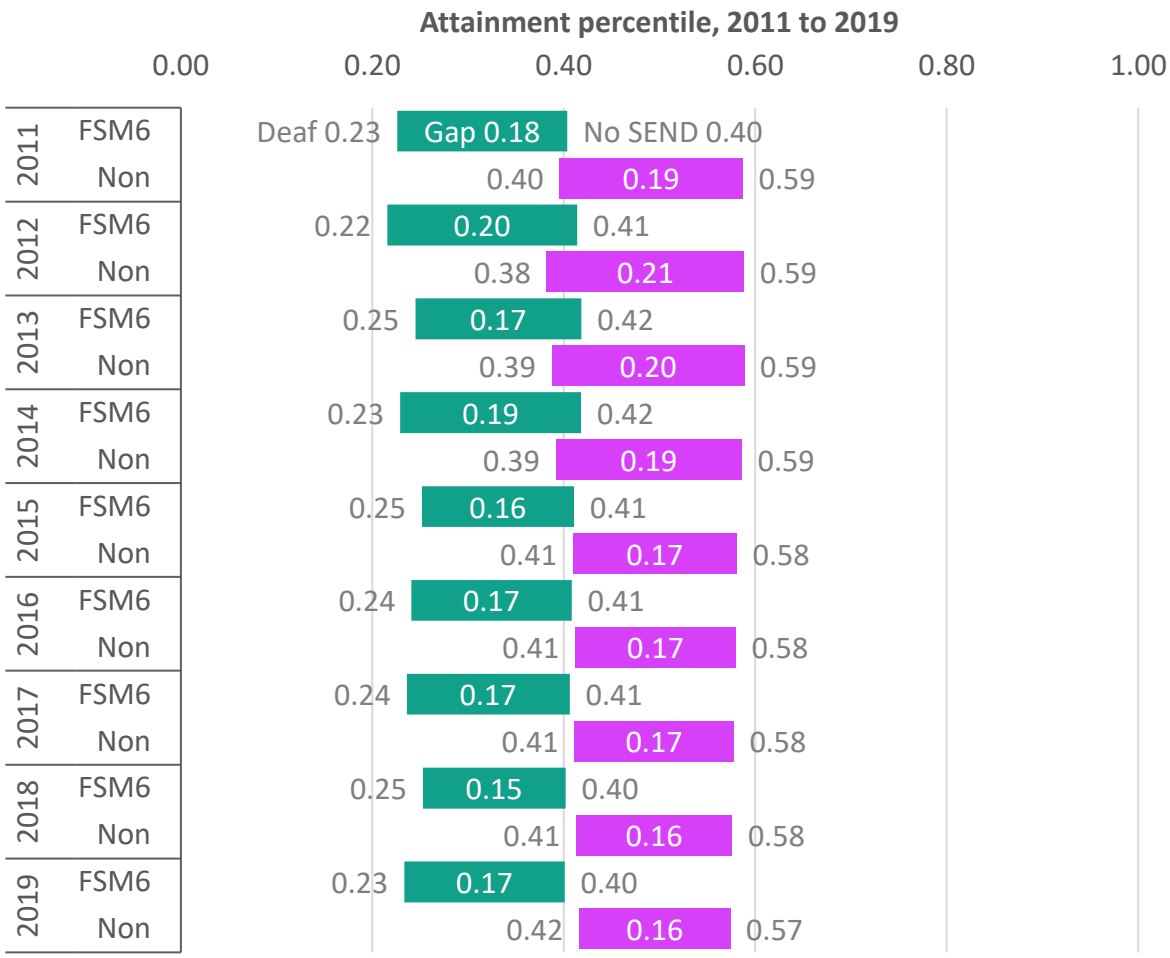
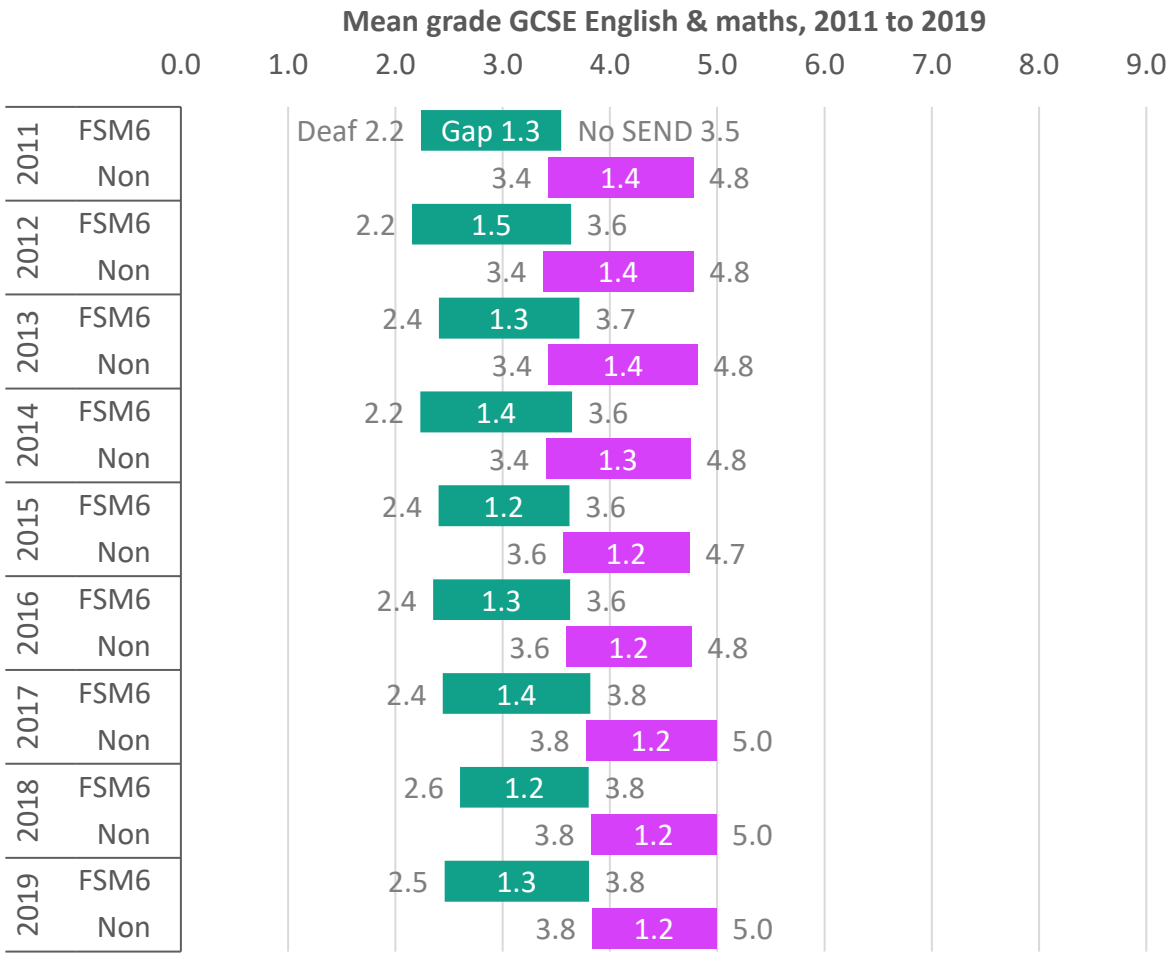


Figure 6b: Deaf GCSE attainment by disadvantaged status, 2011 to 2019 (mean 9-1 grades)



Deaf GCSE attainment by persistent disadvantage

In addition to the disadvantaged group based on eligibility for free school meals (FSM) at some point over the previous six years, we also analyse deaf attainment for a second disadvantaged group labelled 'persistently disadvantaged'. This group is a subset of disadvantaged pupils who were eligible for FSM for at least 80 percent of their schooling. This subgroup has been growing in size in recent years as poverty has deepened, and has a larger GCSE attainment gap than the disadvantaged group which has shown no clear improvement since 2011.

The deaf/no SEND GCSE attainment gaps for persistently disadvantaged pupils and non-disadvantaged pupils did not overlap in 2011 and moved further apart by 2019. Deaf non-disadvantaged pupils in 2011 had a mean GCSE grade of 3.4, the same as the mean grade for persistently disadvantaged pupils with no recorded SEND.

Deaf children who were also persistently disadvantaged experienced a mean GCSE grade of just 2.2 and this had not improved at all by 2019, while persistently disadvantaged children with no SEND had a barely improved mean grade of 3.5.

Over the same period, deaf non-disadvantaged children's attainment improved from 3.4 to 3.9, and the mean grade of children who were neither deaf nor disadvantaged improved from 4.8 to 5.1. The unchanged attainment of persistently disadvantaged children combines with the deaf attainment gap to leave this group with two additional needs at the 20th percentile, which is behind 80 percent of their peers.

Figure 7a: Deaf GCSE attainment by persistent disadvantaged status, 2011 to 2019 (percentiles)

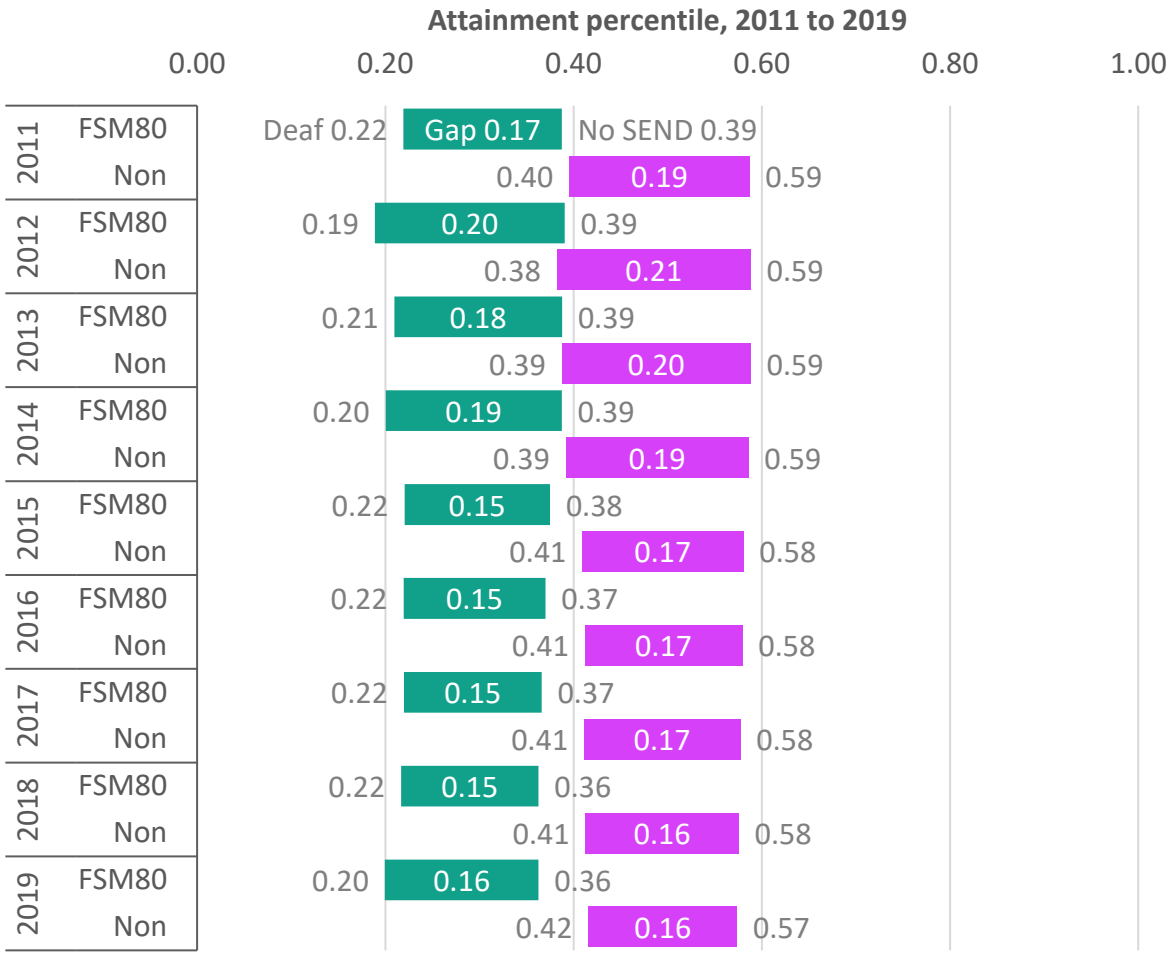
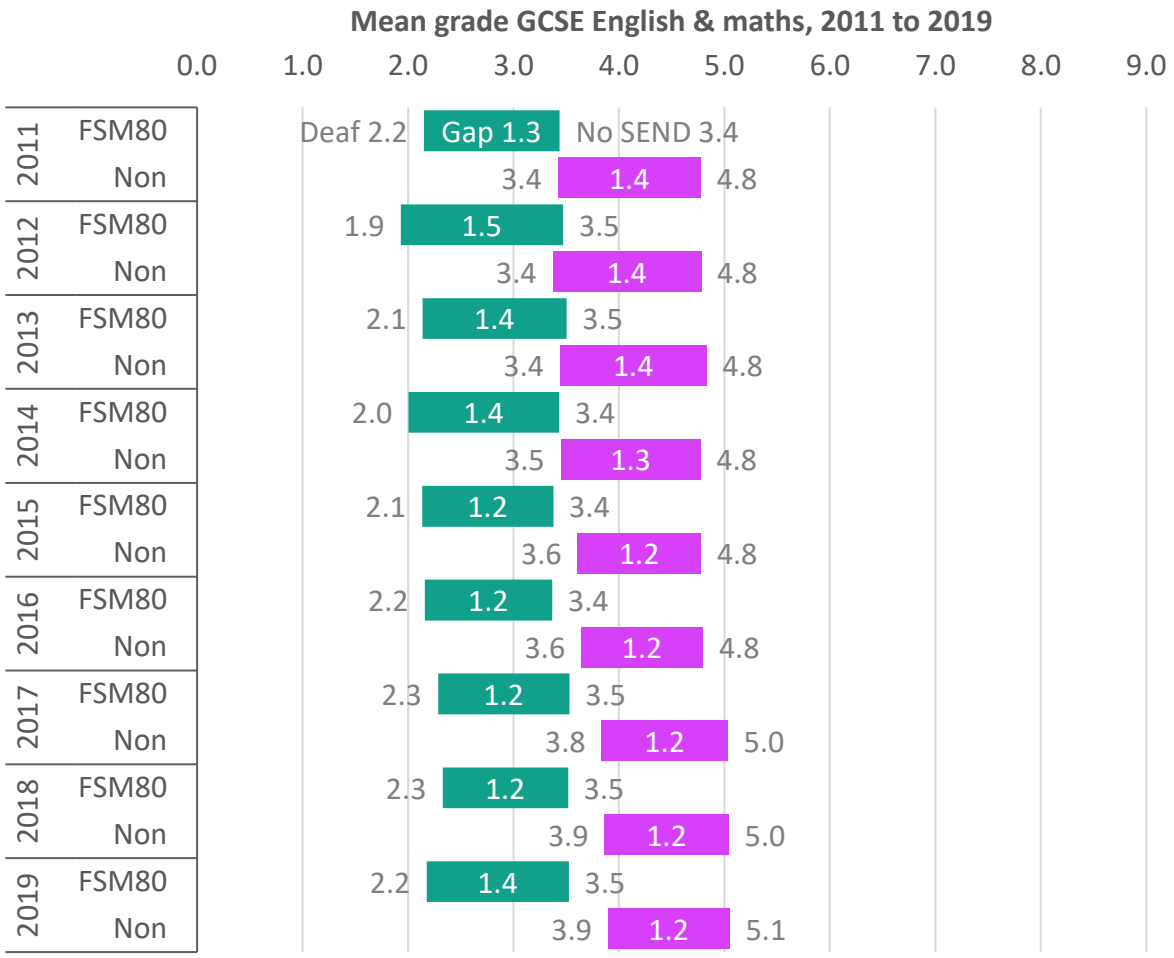


Figure 7b: Deaf GCSE attainment by persistent disadvantaged status, 2011 to 2019 (mean 9-1 grades)



Deaf GCSE attainment for children with English as an additional language

In most years from 2011 to 2019, children with no SEND who speak English as an additional language (EAL) had slightly higher attainment by age sixteen than those with no SEND and no EAL. These groups had the same attainment in 2018 and the pattern reversed in 2019 but the difference was small. This reflects the general pattern for all children (irrespective of SEND) whereby the GCSE attainment of children who speak EAL has improved over the long term until they were above-average attainers.

Life and learning are more complex for children who must navigate a second language at school as well as being a deaf child. It is not hard for non-deaf people to imagine why these two additional needs compound one another, because both are differences of communication from that used by many of their teachers and school friends. This is likely to be contributed to by the varied healthcare and educational backgrounds of migrant children, some of whom began their childhood and/or education in other countries where systems for the identification of deafness are not as established as in England. However, given that most children with EAL do start reception at school in England, it appears that this is not a combination of needs that schools in England are well-adapted for as evidenced by the GCSE attainment of deaf EAL pupils.

In 2011, deaf EAL pupils had GCSE attainment at the 29th percentile and by 2019 this had only slightly improved to the 31st percentile, leaving this group of deaf children with GCSE grades lower than over two thirds of children. In GCSE grades on the 9-1 scale, this translates to a mean grade of 3.5 for deaf EAL pupils in 2019, a gap of 1.8 grades behind children who speak EAL but have no recorded SEND, and 0.6 grades behind deaf children who speak or sign English as their first language. The deaf/no SEND attainment gap for children with EAL is virtually unchanged since 2011.

Figure 8a: Deaf GCSE attainment by EAL status, 2011 to 2019 (percentiles)

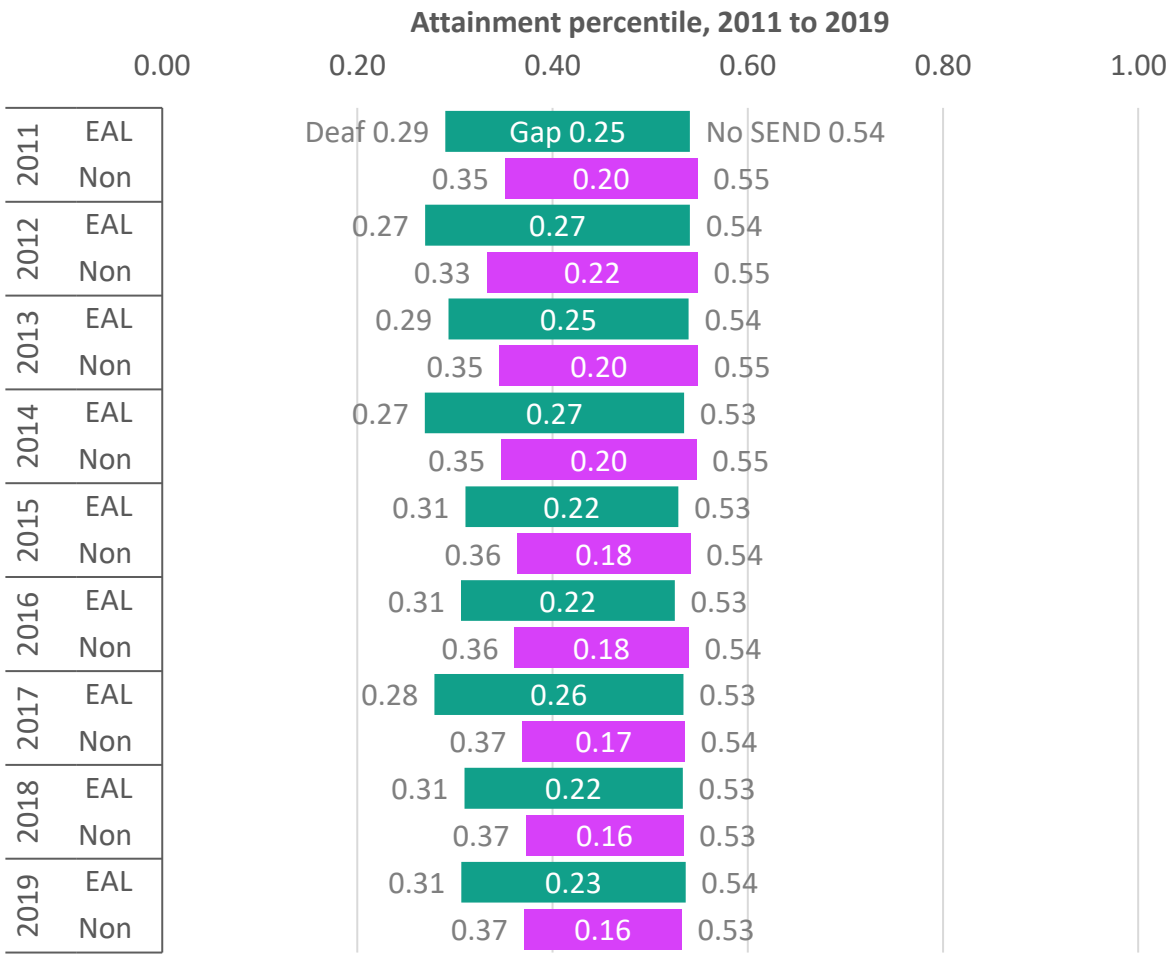
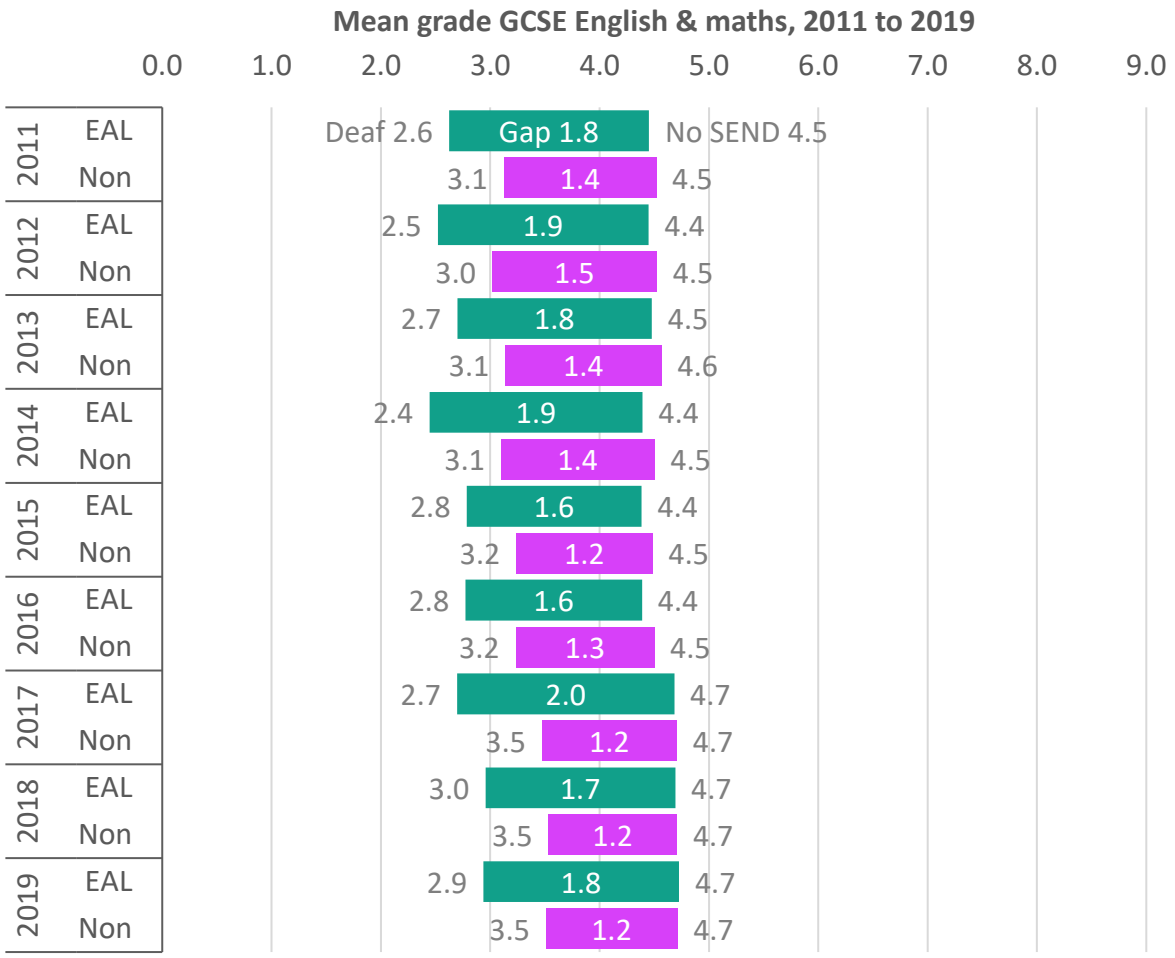


Figure 8b: Deaf GCSE attainment by EAL status, 2011 to 2019 (mean 9-1 grades)



Deaf GCSE attainment by pupil ethnicity

Our ethnicity analysis of deaf GCSE attainment uses five-year pooled GCSE cohorts to boost the sample numbers of deaf children in smaller ethnic groups. This provides over 30 cases for all 'minor' ethnic minority groups apart from Traveller of Irish Heritage children, for whom fewer than 11 deaf children were recorded in the 2011 to 2015 pooled cohort and in the 2015 to 2019 pooled cohort.

This group is excluded from the analysis to prevent statistical disclosure of information about individuals. It is known that some Irish Traveller and Gypsy Roma families ascribe their children as either White Irish or Other White ethnicities due to stigma, discrimination and/or bullying of GRT children, so some of the Irish Traveller group (that is not reported separately) are likely to be subsumed in these other larger ethnic groups.

Figures 9a and 9b show that the order of ethnic groups by GCSE attainment is broadly similar for deaf children and children with no SEND but there are some small differences. For example, the attainment of Other Ethnicity deaf children and Other Black deaf children was the same in the five years to 2019, at the 28th percentile; but the attainment of Other Black children with no SEND was lower than that of Other Ethnicity deaf children (at the 46th and 52nd percentiles, respectively).

As is the case for children generally, the ethnicity with the highest deaf children's GCSE attainment was Chinese in both cohorts. Deaf Chinese children had GCSE English and maths attainment at the 47th percentile in the five years to 2015, and this rose to the 64th percentile which is ahead of almost two thirds of all children by the five years to 2019.

Some of the difference between the two cohorts could be due to differences in the composition of the deaf Chinese pupil group as these figures are based on 33 pupils in the earlier cohort and 38 pupils in the later cohort. However, in both cases this was ahead of the next highest attaining ethnic group of deaf children. The higher attainment in the later cohort resulted in only a small attainment gap between deaf Chinese children and Chinese children with no SEND, of 11 percentiles.

Deaf Chinese attainment in GCSE English and maths was equivalent to a mean grade of 5.3 (on a 9 to 1 scale) in the later cohort. This is defined as a 'good' pass grade. The deaf Chinese attainment in the earlier cohort was a mean grade of 3.8, which is just below a 'standard' pass grade. Chinese children with no SEND attained at an average grade of around 6 in both cohorts, for comparison, giving a deaf gap in grades of 0.8 grades in the five years to 2019 (1.9 grades in the five years to 2015).

The next highest attaining deaf groups were Indian (with a mean GCSE grade of 3.8 at the 43rd percentile), White & Asian (with a mean grade of 3.6 at the 41st percentile), and White Irish (with a mean grade of 3.7 at the 40th percentile).

Of the seventeen ethnic groups, deaf children's GCSE attainment increased from the five years to 2015 to the five years to 2019 in fourteen cases. This was usually accompanied by a reduction in the size of the gap between deaf children and those with no recorded SEND, but not always. The exceptions to this were as follows:

- Deaf White Irish pupils whose mean GCSE grade fell from 3.9 to 3.7;
- Deaf Other Ethnic pupils whose mean grade fell from 2.8 to 2.7; and
- Deaf Gypsy/Roma pupils whose mean grade fell from 0.9 to 0.7 (based on pupil numbers that increased from 36 to 67).

After Chinese pupils, the ethnic groups with the largest improvements in deaf attainment were the following Asian groups:

- White and Asian pupils whose mean GCSE grade increased by +0.5 grades;
- Other Asian pupils whose mean grade increased by +0.5 grades; and
- Bangladeshi pupils whose mean grade increased by +0.5 grades.

Black groups were clustered at the lower end of the table by deaf GCSE attainment. This ranged from deaf Black Caribbean children whose mean grade was 2.6 in the five years to 2019, through deaf Other Black children (2.7), deaf White & Caribbean children (2.8), deaf Black African children (2.9), up to deaf White & African children (3.1). The group with the lowest deaf GCSE attainment by a considerable margin was Gypsy/Roma children, with a mean grade in English and maths of just 0.7 in the five years to 2019.

Figure 9a: Deaf GCSE attainment by ethnic group, 2011-15 and 2015-19 (percentiles)

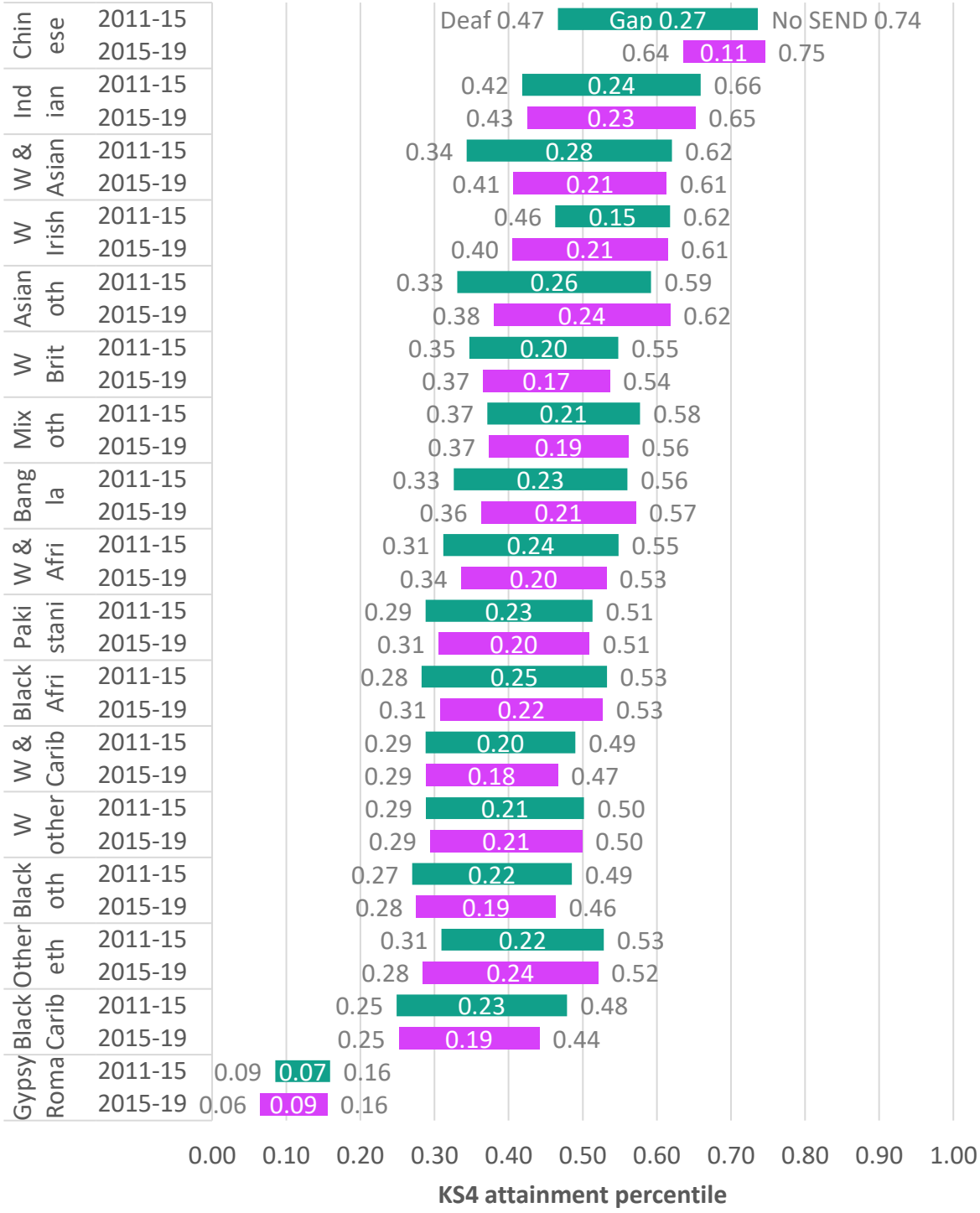
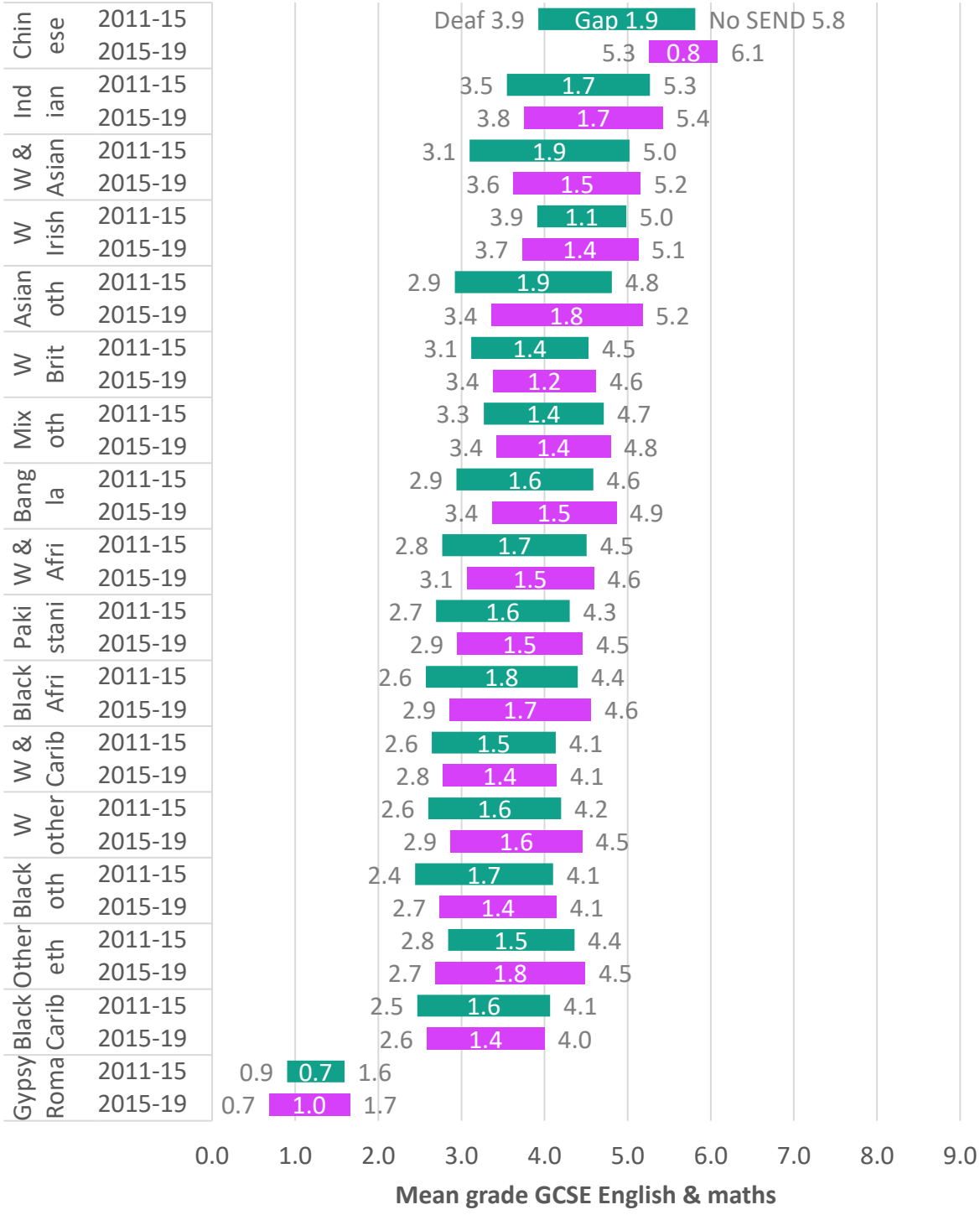


Figure 9b: Deaf GCSE attainment by ethnic group, 2011-15 and 2015-19 (mean 9-1 grade)



School types attended by deaf pupils

Deaf children attended a wide range of school types at key stage 4, and their GCSE attainment was patterned according to this.

Figure 10 shows the pattern of attainment by school type in 2011 and later in 2019. Each chart shows attainment of deaf children on the vertical axis and the size of the gap between deaf children and those with no SEND on the horizontal axis. The size of the bubbles in the chart represents the

number of deaf children in the GCSE cohort in each school type. In the case of special schools there are no children without SEND attending these schools so the attainment gap for deaf children in special schools compares their attainment with that of children with no SEND in the most prevalent mainstream school type at the time; in 2011 this was local authority mainstream schools and by 2019 it was mainstream converter academies (those deemed to have better performance that were not required to be sponsored by a multi-academy trust although some chose to join one voluntarily).

In both years, the highest deaf attainment was for children attending mainstream converter academies. This is unsurprising as these schools were selected as strong schools and often had more affluent pupil intakes. These mainstream converter academies started out as an incredibly selective topslice of the mainstream local authority schools group in 2011 but by 2019 had expanded to become the dominant mainstream school type. The attainment of deaf children in mainstream converters was correspondingly lower than in 2011, but taking into account the origins of the mainstream converters in the local authority group, deaf attainment in mainstream schools actually improved a little by 2019.

Mirroring the process of academy conversion at the top of the mainstream schools group was a corresponding process of brokering schools with lower attainment into sponsorship by multi-academy trusts. The size of the group of sponsored mainstream schools grew from 2011 to 2019 and the attainment of deaf children attending those schools improved a little correspondingly as sponsorship progressed from the weakest schools (measured by attainment) towards the relatively less weak schools over time.

Overall mainstream schools improved a little in terms of deaf GCSE attainment over the nine years analysed but the academies programme did not lead to substantially changed outcomes, inspite of lots of reorganisation. In contrast to this stability, deaf attainment in alternative provision (AP) improved and the gap between deaf children and those with no SEND in AP reduced. These were modest improvements but more marked than those in mainstream schools. Both local authority pupil referral units and academy alternative provision schools were included in one group for this analysis due to the small numbers of deaf children in AP.

Turning to special schools, maintained special schools (both local authority special schools and the later academy and free school special schools in 2019) had larger deaf attainment gaps and lower deaf attainment levels than mainstream schools. This is expected given that only children with needs that cannot be met in mainstream schools are supposed to be placed in special schools. Children attending special schools would typically be more likely to have significant delays or difficulties in language and communication and/or complex combinations of SEND needs, all else (incuding the local authority of residence) being equal.

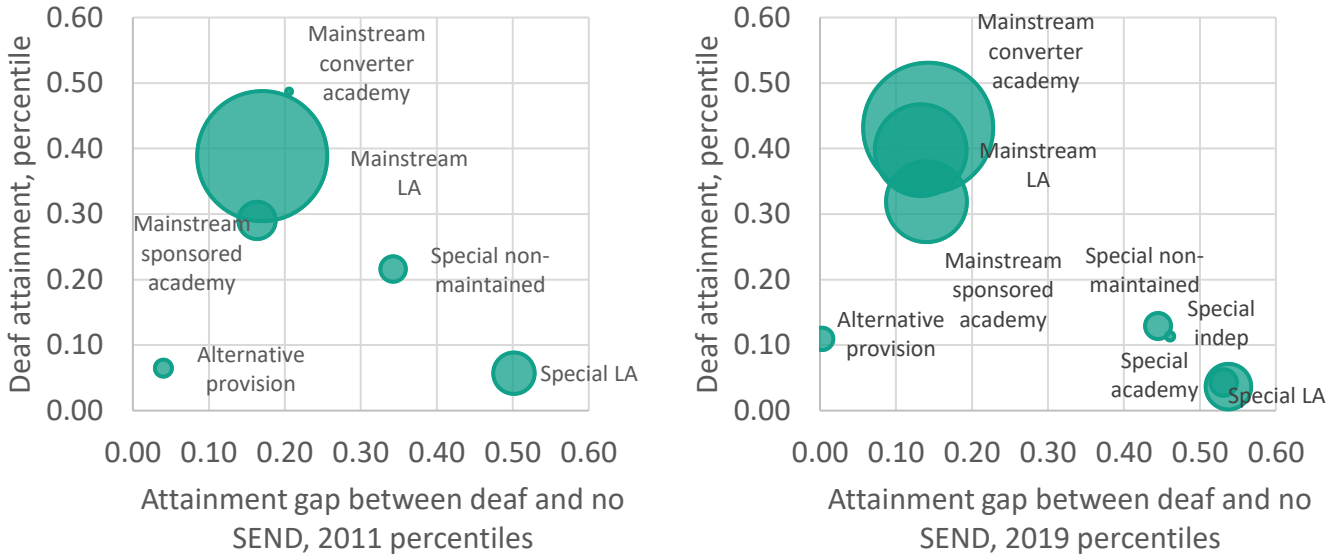
It is perhaps more surprising that following the improvement of deaf attainment in AP schools, deaf attainment was better than in special schools. Typically, special schools are considered to be a more desirable place of learning for children with SEND than AP schools due to the association of AP with pupils who have been permanently excluded from mainstream schools because of challenging behaviour. This is debateable in the case of children with social, emotional and mental health SEND as some AP schools are well-adapted to meet these needs, but this varies a lot from one LA to another, and one school to another.

The wider attainment gap for children in special schools than those in AP is a result of the fact that when we calculate a deaf versus no-SEND gap, then deaf children in special schools have to be compared with children without SEND *in mainstream schools*, as there are no children without SEND in special schools. This generates a bigger gap than the one in AP schools, which can and do educate children with no recorded SEND whose attainment is lower than mainstream school pupils'. Whether those children in AP in fact have no SEND is more debateable, but they are allowed to admit them without assessing and recording a SEND need, unlike special schools where only children under SEND assessment or those already with EHCPs are placed.

In 2011, non-maintained special schools occupied a mid-point between the higher deaf attainment in mainstream schools and the lower deaf attainment in special schools. However, by 2019 deaf attainment in non-maintained special schools had shifted much closer to that of other special schools. This may be as a result of increasing shortages of special school places resulting in LAs paying to place deaf children with more complex needs in those schools, as would the appearance of a very small group of state-funded deaf children in special independent schools with attainment similar to the non-maintained special schools.

The advent of the first deaf children in academy or free school special schools by 2019 did not alter the picture compared with local authority special schools. However, this combined group of LA and academy special schools had slightly lower attainment and therefore a slightly larger deaf attainment gap in 2019 compared with the LA special schools in 2011. This could also be as a result of a shortage of places in special schools, resulting in only the children with the most complex or severe needs securing a place by the time of the 2019 GCSE cohort.

Figure 10: Deaf GCSE attainment levels and gaps in different school types, 2011 and 2019



Comparing deaf children's attainment with other groups

In this section we compare the GCSE attainment gap for deaf children with the attainment gap experienced by other vulnerable groups, to get a sense of where deaf children's attainment fits relative to some benchmarks. To recap, in 2019 the GCSE English and maths attainment of deaf children was at the 36th percentile, meaning that almost two thirds (64 percent) of children had higher grades than the average grades for deaf children. The gap between deaf children and those with no recorded SEND was 18 percentiles, or 1.3 grades in each of English and maths.

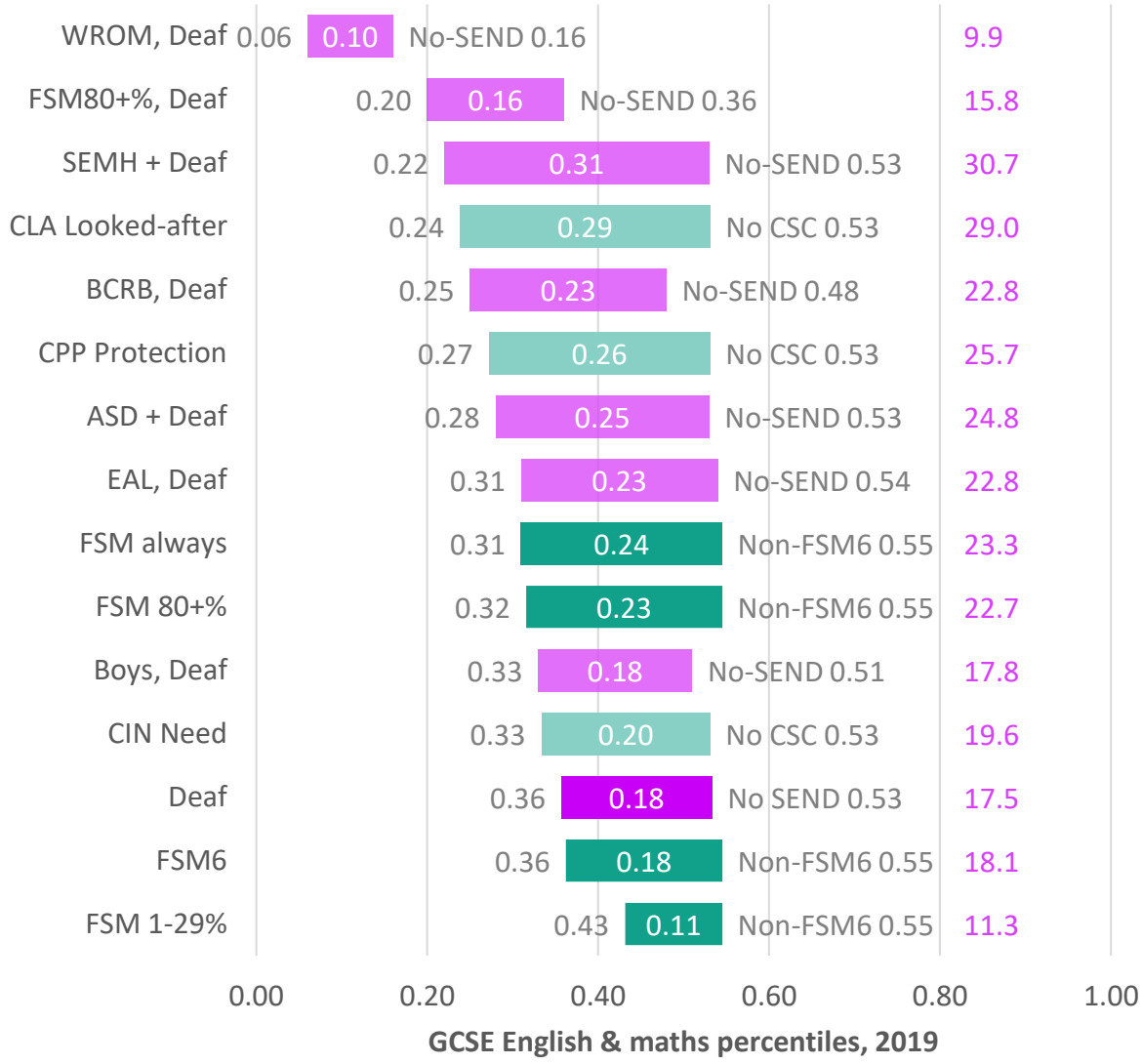
The attainment of deaf children is very similar to that of disadvantaged children who were eligible for free school meals during the six years previous to their GCSEs, and a little higher than that of Children in Need (CIN) who receive support from a social worker. It is somewhat lower than children who were eligible for free school meals for a minority of their time in school.

The largest univariate GCSE attainment gaps are for children who are looked after by and live in the care of their local authority (CLA). However, intersectional analysis of deaf children with other risk factors reveals that deaf Gypsy/Roma children (6th percentile), persistently disadvantaged deaf children (20th percentile), and deaf children with social, emotional and mental health needs (22nd percentile), each had even lower GCSE grades than looked-after children (24th percentile).

Deaf children who speak or sign English as an additional language (EAL) had GCSE attainment similar to children who were always eligible for FSM (both at the 31st percentile behind two thirds of children) and a little better than children who are the subject of a local authority child protection plan (CPP, 27th percentile). Meanwhile, deaf Autistic children (28th percentile) had GCSE attainment slightly better than children with CPPs, but slightly lower than deaf children with EAL. Deaf boys had similar GCSE grades to children supported by a social worker (CIN, both at 33rd percentile).

The aim of these comparisons is not to find a group that is worse off than every other, nor to argue for gold-plated support for one type of additional need at the expense of all others. Instead, it is to increase awareness of lesser-known attainment gaps and shed light on the heterogeneity of the experiences of deaf children in England and some of the most challenging complex needs within the group.

Figure 11: Comparison of deaf attainment with other vulnerable pupil groups, 2019 GCSEs



Attainment by local authority and specialist teachers

Contents and methodology for the local authority analysis

In this section we briefly summarise our analysis of deaf attainment in different local authorities. Deaf attainment gaps are presented comparing the attainment of deaf children with that of the national average for children with no recorded SEND, but the local figures reported for children with no SEND are those of children living in each local authority as these provide additional context. Detailed local authority comparison tables are found in the separate accompanying file to this report. This analysis makes use of pooled cohorts to increase the number of deaf children in the analysis in each local authority so that information about smaller LAs is maximized without disclosing small numbers.

Time series analysis makes use of three-year pooled cohorts while a five-year pooled cohort is provided to supplement the information about the smallest LAs. After pooling, only City of London, Rutland and the Isles of Scilly have no information on deaf attainment. Kensington and Chelsea only appears in the five-year pooled analysis and Hammersmith and Fulham, Kingston-upon-Thames and Richmond-upon-Thames have some missing attainment cohorts in the three-year pooled analysis. As well as different sizes and demographic composition of local school populations, differences in local SEND recording practices can also contribute to these 'small' deaf populations.

In addition to information about the attainment of deaf children living in each area and how this has changed over time, these tables also contain data collected by CRIDE[1][viii] on the number (full-time equivalent) of specialist Teachers of the deaf. In order to count as a specialist teacher of the deaf, teachers must either hold the mandatory qualification (MQ) or be in training for the MQ or intending to train within 3 years. The CRIDE figures include those working in peripatetic services, resource provisions, special schools or colleges not specifically for deaf children or young people and/or working flexibly across these settings. They do not include figures for Teachers of the deaf working in the 18 special schools for deaf children in England. Nor do they include any Teacher of the deaf posts that were vacant at the time of their survey or that were filled by people who did not hold the mandatory qualification or were in training for this.

We use the CRIDE data combined with our own analysis of the numbers of deaf children recorded as having hearing impairment grossed up across year groups from Reception to year 11 to create a deaf Pupil Teacher Ratio (PTR). Where shared services deploy Teachers of the deaf across more than one local authority those teachers are assumed to be accessed equally in each area within the service relative to each authority's number of deaf children. Where there were fewer than 11 deaf children in the assessment cohort for a local authority even after pooling the data over three years and we were unable to present attainment data we still give an approximate PTR by assuming 5 deaf children in the triple cohort and grossing this up to account for the twelve compulsory school year groups.

[1] Consortium for Research into Deaf Education (CRIDE) conducts and reports on annual surveys of local authority specialist educational services for deaf children. CRIDE is a consortium bringing together a range of organisations and individuals with a common interest in using research to improve the educational outcomes achieved by deaf children. See www.ndcs.org.uk/CRIDE.

Because our analysis uses figures on numbers of deaf children recorded as having a SEND, it may not match figures around caseload ratios that services use or which are shown in the CRIDE reports. This is particularly the case where there are significant variations in the numbers of deaf children recorded by schools as having SEND.

Local authorities with the highest and lowest deaf attainment

The local authority with the highest deaf attainment pooled over the five years to 2019 was Wokingham. Deaf children in Wokingham had GCSE English and maths grades at the 58th percentile (based on 59 pupils); this is five percentiles higher than the national average for children with *no* recorded SEND. This had increased over the course of the 9 years from 2011 by 20 percentiles.

Wokingham had an above-average deaf Pupil Teacher Ratio (ie. *fewer* specialist Teachers of the deaf than average) and these are provided by a service shared with West Berkshire, Reading, Bracknell Forest, Windsor and Maidenhead and Slough. Within this service, deaf attainment ranged from the 34th percentile (ie. lower than almost two thirds of children) in Slough and Reading up to the highest nationally in Wokingham. This mixed picture points to the importance of deprivation and other pupil characteristics among deaf children in influencing their GCSE attainment.

The next highest local authorities for deaf attainment were Bromley and Buckinghamshire, which both had deaf attainment at the 50th percentile (based on 75 and 84 pupils respectively), exactly halfway from the top of the national distribution and three percentiles below the average for children with no SEND.

At the bottom end of the scale, the lowest deaf GCSE attainment was found in:

- Nottingham (21st percentile) based on 77 pupils;
- Halton (23rd percentile) based on small numbers (23 pupils);
- Hartlepool (24th percentile) based on small numbers (20 pupils);
- Barnsley (25th percentile) based on 54 pupils; and
- Barking and Dagenham (25th percentile) based on 60 pupils.

On average, deaf children in these authorities had lower attainment than three quarters of children nationally. These areas all had below-average deaf PTRs (i.e. more specialist Teachers of the deaf than average) again pointing to the confounding role of poverty and other pupil characteristics.

It is also worth noting that the local authority high needs budgets, from which support for SEND is drawn, are heavily influenced by the historical spending patterns of those authorities before national funding formulae were introduced. Typically more deprived areas had the highest historical spending, but geographical patterns of deprivation have sometimes shifted since these funding patterns became embedded meaning they are an imperfect reflection of current need.

Local authorities with increased or decreased deaf attainment

Caution must be exercised in drawing conclusions about changes in deaf attainment at the local level wherever these are based on small numbers of pupils or the number of deaf pupils recorded has changed substantially over time. We present and discuss the figures for the largest changes in attainment here to give a starting point for examining the local reasons behind changes in deaf

attainment. These cases should be understood as illustrative of patterns in the data rather than as the 'best' or 'worst' performing systems.

The local authority with the most improved deaf attainment was the Wirral, where GCSE grades increased by +23 percentiles from a low of the 22nd percentile in the three years to 2013 to the 45th percentile in the three years to 2019. This accompanied an increase in the deaf cohort from 39 to 53 pupils which may have resulted in some differences in the composition of the group. However, the five-year average to 2019 was similar to the latest three-year average at the 44th percentile based on 87 pupils, which supports the plausibility of real improvement.

Other authorities with increases of at least 15 percentiles were:

- Wokingham +20 percentiles ending at the 57th percentile, based on moderate stable numbers (34 pupils);
- Westminster +17 percentiles to the 49th percentile, based on small but stable numbers (22 pupils);
- South Gloucestershire +17 percentiles to the 46th percentile, based on moderate stable numbers (38 pupils);
- Merton +16 percentiles to the 46th percentile, based on small increased numbers (27 pupils); and
- Islington +15 percentiles to the 42nd percentile, based on moderate increased numbers (37 pupils).

These improved authorities had a mix of above-average and below-average deaf specialist PTRs.

The local authority *ostensibly* with the largest decrease in attainment for deaf children was Halton, where deaf attainment fell by -15 percentiles from the 39th percentile in the three years to 2013 to the 24th percentile in the three years to 2019. Fewer children were recorded as deaf in the later years (just 11 pupils), which is likely to have contributed to this trend. We recommend caution in interpreting this trend which could be influenced by changes in the composition of the deaf group locally, such as increased deprivation or differences in the language and communication needs of deaf children; it is described here for completeness and to illustrate the caution required in interpreting the local authority tables published in the separate accompanying file to this report. A rule of thumb for determining when there are 'few cases' is for groups smaller than 30 pupils.

The next largest fall in deaf attainment was in Dudley where it decreased by -14 percentiles from the 45th percentile to the 31st percentile. The number of deaf children in the Dudley deaf GCSE cohort increased from 59 to 73; while any change in numbers can be accompanied by a change in the composition of the group (e.g. becoming more or less deprived, different language and communication needs of deaf children), against a national context of increases in the number of deaf children, an increase is somewhat less likely to indicate a change in composition than a decrease in pupil numbers would. Further confidence can be drawn from the five-years to 2019 pooled average attainment in Dudley which was similar to the latest three-year average, at the 33rd percentile, based on 120 deaf children.

Discussion and conclusions

Relationship between specialist Teachers of the deaf and deaf attainment

The examples throughout the local authority analysis section of the report illustrate that there is complexity in the relationship between the ratio of deaf pupils to specialist Teachers of the deaf and deaf children's attainment, and that other pupil characteristics play a substantial role in influencing GCSE attainment.

These characteristics include those that are measurable (such as socio-economic disadvantage, or other types of recorded SEND that deaf children have in addition to hearing impairment) and those that are unobservable in the data (differences in the language and communication needs of deaf children, or *unidentified* additional SEND needs, for example).

Other educational factors such as the quality of teachers, their breadth of experience in working with deaf children from difference backgrounds, how specialist Teachers of the deaf are deployed, the overall funding level of the school budget and local authority high needs budget are also candidates for unobserved factors influencing deaf attainment.

An analysis of the data on deaf PTRs and deaf attainment in GCSE English and maths confirms that there is only a very weak relationship between our measure of access to specialist Teachers of the deaf and GCSE performance. This is also the case if we examine changes in the specialist deaf PTR and in GCSE attainment over time. Scatter charts illustrating these relationships can be found in the annex at the end of the report.

This finding does not mean that specialist Teachers of the deaf are not important adjustments to the education of deaf children to enable them to be fully included in school life, but it does mean that even well-resourced services may not be sufficient to overcome the combined effects of multiple special educational needs, or of growing up in poverty, or of speaking / signing English as an additional language as well as being deaf, which complicates the support needed to succeed. Access to specialist Teachers of the deaf may be necessary, but is not on its own a sufficient reasonable adjustment.

Headline conclusions

Overall, our findings demonstrate the considerable heterogeneity of deaf children and their experiences in school.

Deaf children living in affluent areas such as Wokingham have average GCSE attainment that compares favourably with children with no recorded SEND, nationally. But sadly, this picture is not widespread, and on average, deaf children face a similar attainment gap to disadvantaged children (those eligible for free school meals in the last six years) by the age of sixteen.

This average deaf GCSE gap masks not only the high attainment of deaf children in the most affluent areas, but also the worryingly low attainment of deaf children who are socio-economically disadvantaged or have other special educational needs or disabilities.

Considering the time series analysis we began our report with, deaf pupils have experienced moderate improvements in their attainment at each of KS1, KS2 and KS4 in the nine years following

2011 and up to just before the pandemic. The pattern for each key stage was similar, while the accumulated learning as children reached the later stages of compulsory education resulted in larger gaps expressed as months of learning by age sixteen.

One notable difference between the key stages was the dominance of speech, language and communication needs in accounting for the largest share of the overall deaf attainment gap at key stage 1, with learning difficulties gradually contributing more to the deaf gap by key stage 2 and overtaking to become the most dominant contributors to the deaf GCSE gap at key stage 4. This pattern makes sense in terms of child development from key stage 1 to key stage 2, but it's interesting to see the relative contributions of other needs focused on neurodivergence and mental health during secondary schooling, for deaf young people.

Recommendations

Given the range of needs experienced by deaf children that influence their attainment resulting in widely varying results, the government, schools and local authorities need to develop better holistic support packages that recognise these varied and sometimes complex needs.

Turning to school funding, our findings suggest that the national funding formula could be improved if it took account of multiple additional needs of the same individual child, instead of simply summing the numbers of pupils with each separate additional need. The cost of meeting multiple needs can be more than the sum of its parts if one need increases the complexity of meeting another need.

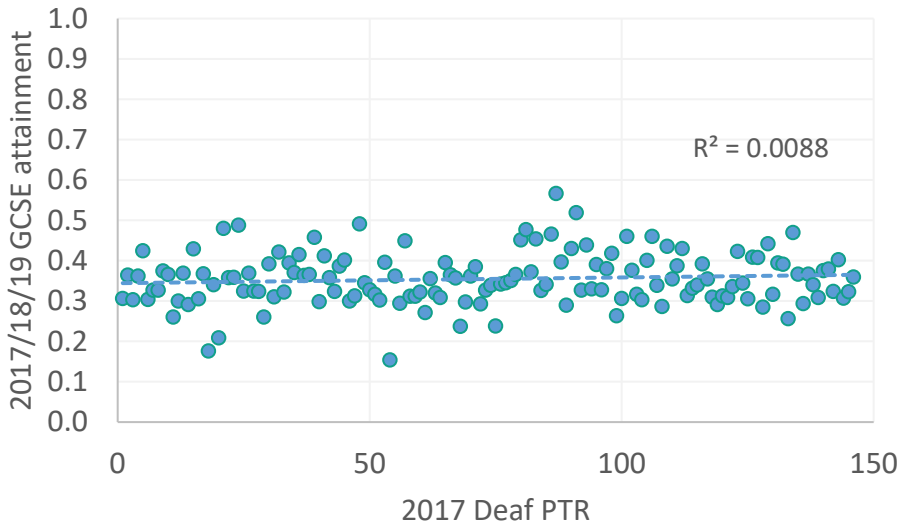
There is also a clear case for the rationalisation of the high needs funding formula, in order to put each authority on an equal footing in receiving funding according to the needs of their population instead of budgets depending on historical expenditure.

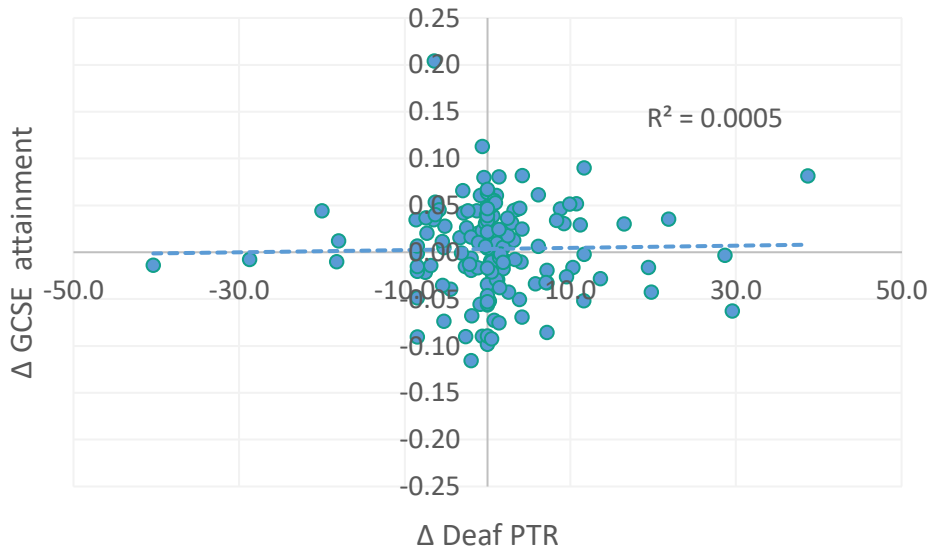
These questions should be addressed as part of a more fundamental review of high needs funding, that takes into account current need and the specialism of the workforce that supports children with specialist needs and conditions.

Beyond the SEND system and the wider education system, the disabling effects of poverty on deaf children's life chances are a damning illustration of the unfairness that results when the government has no strategy to stem the rising tide of persistent poverty among children.

Local authority analysis of deaf children's attainment is published in a separate file at epi.org.uk

Local authority correlation of deaf children's GCSE attainment with deaf children : specialist Teachers of the deaf pupil teacher ratio.





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