



Education and Culture Committee

Background briefing: sensory impairment and attainment

12 May 2015

Introduction

The Committee has agreed to hold an Inquiry into the educational attainment of school pupils with a sensory impairment. Sensory impairment includes pupils with a visual impairment, a hearing impairment as well as pupils with a dual or multi-sensory impairment (deafblind). This briefing provides background information on the number of pupils with a sensory impairment and data on their attainment.

Numbers of children with sensory Impairment

Below are figures on the number of children with a sensory impairment. For all sensory impairment categories there are gaps and limitations to the data, which mean a full and accurate picture of the number of children with any sort of sensory impairment is difficult to measure.

Visual Impairment

The [Scottish Sensory Centre](#) notes a dearth of accurate information on the number of children in Scotland who experience a visual impairment. It states that the true number of children with a visual impairment is significantly more than the number recorded on the official blind or partial sight register.¹

In 2012 there were 869 children on the blind and partial sighted register in Scotland², while the total number of school age children in Scotland that are blind or visually impaired is estimated to be 2,080. This latter figure is suspected to be an underestimate, with a further 800 children undetected³.

The causes of visual impairment in childhood are different to those affecting adults. In adulthood, visual impairment is more commonly a result of deteriorating health of the eye, whereas in children, visual impairment is more commonly a result of damage to the optic nerve or the brain. As a result, visual impairment in childhood is often accompanied by

¹ This is a result of the register being developed to identify people of working age who are not in employment because of sight loss; meaning the register is not effective at capturing the number of children and young people with visual impairments.

² <http://www.scotsman.com/news/health/numbers-of-blind-children-rise-across-scotland-1-3423037>

³ <https://www.tes.co.uk/article.aspx?storycode=6333680>

other impairments/disabilities⁴. It is estimated that approximately seventy per cent of visually impaired children have an additional impairment.

Hearing Impairment

The [Scottish Council on Deafness](#) states that every year in Scotland around 75 children are born deaf, with around five experiencing severe or profound hearing loss. Data from the Consortium for Research into Deaf Education (CRIDE) reports that there are approximately 3,057 deaf children in Scotland⁵. CRIDE also report on the communication methods used by deaf children⁶. This suggests that 3 per cent of deaf children solely use British Sign Language (BSL) a further 12 per cent use sign language in combination with another language and 0.6 per cent use a sign system other than BSL.

National Deaf Children's Society (NDCS) contends that figures on the number of deaf children are higher than that provided by CRIDE (due to limitations in the methods used in the CRIDE survey)⁷. However, there is no complete national data set on the number of children and young people who are deaf or have a hearing loss.

There are no data on the extent to which children with a hearing impairment also experience another disability. [NDCS](#) cites a number of conditions that can cause hearing loss in childhood. This includes: cleft palate; meningitis; damage to the cochlea, damage to the inner ear, Cytomegalovirus⁸; or microtia/atresia⁹. It is unknown what the figures are on the number of children that have a hearing impairment only, or that have an additional disability as well as hearing impairment.

Recent research by the University of Edinburgh¹⁰ shows that profoundly deaf children that are currently at school in Scotland are far more likely to have a cochlear implant (CI) (83.3%) compared with those that have left school (35.6%). This indicates that children born profoundly deaf are now far more likely to be offered the option of having a CI than previously. This has implications for the communication choices open to profoundly deaf children.

As Figure 1 shows, the communication preferences for deaf children depend to some extent on the severity of hearing loss. While speech is the communication method preferred by most deaf children, those with a CI have the most varied range of communication preferences, with more citing BSL as the preferred communication,

⁴ <https://www.actionforblindpeople.org.uk/about-us/media-centre/facts-and-figures-about-issues-around-sight-loss/>

⁵ http://www.ndcs.org.uk/professional_support/national_data/uk_education_.html (2014 Scotland report)

⁶ http://www.ndcs.org.uk/professional_support/national_data/uk_education_.html (2013 Scotland report)

⁷ See written submission from NDCS for consideration of the BSL Bill at Stage 1:

http://www.scottish.parliament.uk/S4_EducationandCultureCommittee/BSL%20Bill/NationalDeafChildrensSociety.pdf

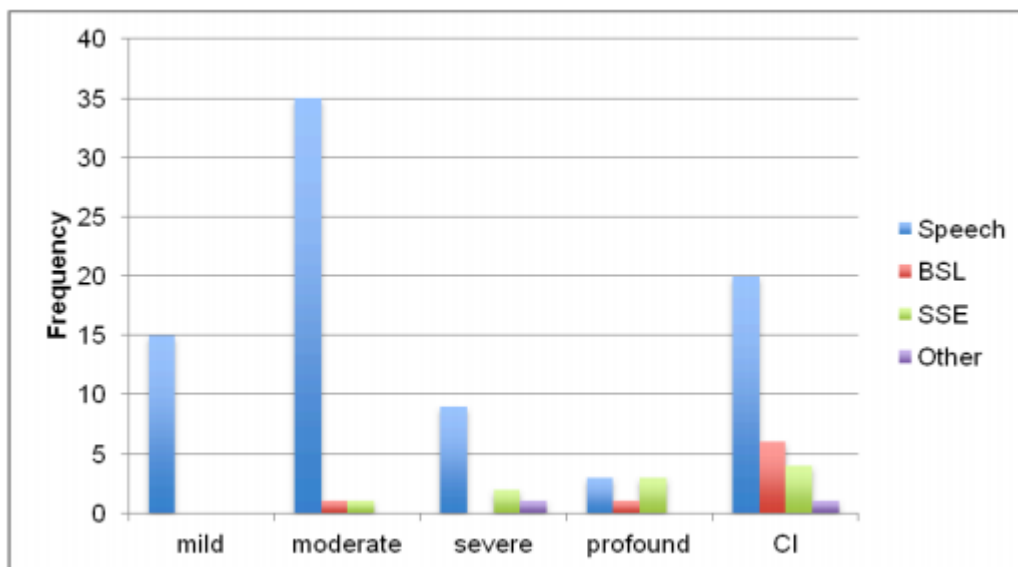
⁸ A congenital condition that can lead to hearing impairment or learning difficulties where the mother is carrying the virus

⁹ A congenital deformity of the outer ear resulting in an absence or closure of the external auditory ear canal

¹⁰ Rachel O'Neill who is giving evidence to the Committee was the lead researcher for this study.

although speech remains the most common preference. While the sample size is small (only 102 deaf children in Scotland), these findings replicate those from other UK studies¹¹.

Figure 1: Deaf children’s preferred communication method, by deafness category



Source: [University of Edinburgh](#)

Multi-sensory Impairment

[Deafblind Scotland](#) estimates there to be around 5,000 people in Scotland with a dual sensory impairment. Dual sensory impairment is commonly associated with ageing, with the majority of deafblind people aged over 60 years. While figures are not available, this suggests that the number of children and young people who are deafblind is likely to be very low.

Attainment Levels

The Scottish Government publishes statistics on the outcomes (both focusing on examination results and post-school destinations) of school pupils in Scotland. The most up to date figures currently available are for 2012-13.

Visual Impairment

Table 1 presents data on the tariff scores and qualifications achieved by school leavers in 2012-13, based on having an Additional Support Need (ASN). Looking at data on school leavers with a recorded visual impairment:

- The average tariff score of school leavers with visual impairment in academic year 2012-13 was 241 compared with an average tariff score for school leavers without ASN of 439.
- While 99.1 per cent of school leavers with no ASN left school with 1 or more SCQF at Level 2 or above, for school leavers with visual impairment the proportion was 87.7 per cent.

¹¹ University of Edinburgh [Achievement and Opportunities for Deaf students](#) Research Report (2014, p.17)

- Looking at those who achieved 5 or more SCQF at Level 5¹² or above, the data show that 64.5 per cent of non-ASN school leavers achieve at this level, relative to 34 per cent of those with a visual impairment.
- A total of 31.5 per cent of non-ASN school leavers achieved 5 or more SCQF Level 6¹³ or above, compared with 11.8 per cent of those with visual impairment.

Hearing Impairment

While school leavers in 2012-13 with hearing impairments achieved slightly higher levels of attainment than those with a visual impairment, the overall trends show lower attainment than those with no ASN:

- The average tariff score for school leavers with a hearing impairment was 289, compared with 439 for school leavers with no ASN.
- The proportion of school leavers with a hearing impairment that achieved 1 or more SCQF Level 2 or above was 90.2 per cent, compared with 99.1 per cent of those with no ASN.
- The proportion of school leavers with a hearing impairment that achieved 5 or more SCQF Level 5 or above was 37.3 per cent, compared with 64.5 per cent of those with no ASN.
- The proportion of school leavers with a hearing impairment that achieved 5 or more SCQF Level 6 or above was 16.7 per cent, compared with 31.5 per cent of those with no ASN.

Multi-sensory Impairment

In 2012-13 there were only five school leavers recorded as deafblind, with an average tariff score of 124. No figures were available on the qualifications achieved by deafblind school leavers in that year. This is a result of the small numbers of pupils in this ASN category.

¹² Level 5 is equivalent to Standard Grades.

¹³ Level 6 is equivalent to Highers.

Table 1: Highest Qualifications Attained by School Leavers, by Additional Support Need (ASN), 2012/13

Reason for support	Total leavers (=100%)	Average tariff score	1+ @ SCQF Level 2 or better	1+ @ SCQF Level 3 or better	5+ @ SCQF Level 3 or better	1+ @ SCQF Level 4 or better	5+ @ SCQF Level 4 or better	1+ @ SCQF Level 5 or better	5+ @ SCQF Level 5 or better	1+ @ SCQF Level 6 or better	3+ @ SCQF Level 6 or better	5+ @ SCQF Level 6 or better	1+ @ SCQF Level 7 or better	3+ @ SCQF Level 7 or better
Total	53,261	401	98.0	97.8	93.2	95.0	83.3	81.1	57.9	54.8	39.4	27.6	18.0	2.4
No ASN	43,947	439	99.1	99.0	96.4	97.7	89.1	86.8	64.5	61.0	44.6	31.5	20.4	2.7
Any ASN	9,314	222	92.9	91.6	77.9	82.5	55.6	54.1	26.6	25.6	15.2	9.4	6.5	0.7
Learning disability	1,150	89	76.0	68.8	46.7	55.0	23.5	24.4	6.3	6.3	3.2	1.7	0.9	*
Dyslexia	1,734	273	98.3	98.1	92.8	94.1	71.7	68.3	34.0	32.6	18.3	11.0	8.6	0.6
Other specific learning difficulty (e.g. numeric)	853	251	96.8	95.9	87.9	91.3	63.5	61.8	29.4	28.0	19.0	10.8	8.9	1.2
Other moderate learning difficulty	899	145	93.9	91.7	74.5	80.0	39.5	39.0	11.3	11.5	5.1	2.8	2.6	*
Visual impairment	203	241	87.7	85.7	73.9	77.8	55.7	54.7	34.0	29.6	17.2	11.8	7.9	*
Hearing impairment	204	289	90.2	89.2	79.4	81.4	64.7	65.2	37.3	36.3	25.0	16.7	12.7	*
Deafblind	5	124	*	*	*	*	*	*	*	0.0	0.0	0.0	0.0	0.0
Physical or motor impairment	414	223	82.9	80.7	69.6	73.9	51.9	49.8	27.8	28.0	16.4	10.1	7.0	1.7
Language or speech disorder	303	107	70.6	65.0	46.9	53.8	27.4	29.4	11.2	12.2	5.9	*	1.7	0.0
Autistic spectrum disorder	619	235	85.6	83.0	70.9	76.1	56.5	57.4	30.9	30.4	17.1	11.6	8.1	1.9
Social, emotional and behavioural difficulty	2,268	118	88.8	87.5	63.5	70.9	33.4	31.8	9.2	8.0	3.7	2.0	1.4	*

* Information based on number of less than 5 have been suppressed for quality and disclosure reasons.

1. Leavers from publicly funded secondary and local authority special schools. All of the 11 leavers from grant-aided special schools were excluded as none could be matched to Pupil Census data.

2. Individuals may have more than one ASN – as a result, the numbers within specific groups will be higher than the total number of leavers.

3. Includes all leavers from special schools and leavers from secondary schools with Additional Support Needs. If none are specified, they are treated as having "Other or unknown" support needs.

Source: Scottish Government [Attainment and Leaver](#) statistics 2012-13

Leaver Destinations

Table 2 looks at the post-school destinations of young people who have been recorded as having an ASN while at school. The information on 2012-13 school leavers (the most up to date currently available) is discussed below.

- School leavers with a visual impairment (85.3%) or a hearing impairment (89.4%) were less likely to be in a positive destination¹⁴ six months after leaving school than those with no ASN (91.7%).
- School leavers with a visual impairment (20.3%) or a hearing impairment (21.8%) were far less likely to be participating in higher education than those with no ASN (40%).
- In contrast, school leavers with a visual impairment (42.9%) or a hearing impairment (41%) were more likely to be participating in further education than those with no ASN (22.5%).

Table 2: Percentage of school leavers by follow-up destination and ASN, 2012/13

Reason for support	Number of Leavers	Positive Destinations	Higher Education	Further Education	Training	Employment	Voluntary Work	Activity Agreement	Unemployed Seeking	Unemployed Not Seeking	Unknown
No ASN	43,806	91.7	40.0	22.5	2.6	25.5	0.4	0.6	6.7	1.4	0.3
Any ASN	8,469	81.9	17.3	34.8	5.9	20.6	0.6	2.6	13.9	3.5	0.7
Learning disability	753	79.5	4.5	44.1	6.9	18.6	1.3	4.1	13.9	6.0	*
Dyslexia	1,714	87.0	18.8	35.2	5.3	25.6	0.3	1.9	10.8	1.6	0.5
Other specific learning difficulty (e.g. numeric)	830	84.5	19.8	34.8	5.1	22.7	*	*	13.0	2.0	*
Other moderate learning difficulty	840	82.4	6.9	42.3	8.8	19.6	0.8	3.9	13.7	3.5	*
Visual impairment	177	85.3	20.3	42.9	6.2	13.0	*	*	9.0	5.6	0.0
Hearing impairment	188	89.4	21.8	41.0	3.7	19.1	*	*	7.4	3.2	0.0
Deafblind	*	*	*	*	*	*	*	*	*	*	*
Physical or motor impairment	348	81.9	21.0	39.4	3.4	13.8	2.0	2.3	10.9	7.2	0.0
Language or speech disorder	207	80.2	6.3	54.1	4.3	12.6	*	*	8.2	11.6	0.0
Autistic spectrum disorder	513	87.9	22.2	49.9	3.9	8.2	1.2	2.5	6.6	5.1	*
Social emotional and behavioural difficulty	2,014	70.6	4.7	28.9	9.5	20.8	0.9	5.8	22.6	5.9	0.8

Source: Scottish Government [Attainment and Leaver](#) statistics

* Information based on number of less than 5 have been suppressed for quality and disclosure reasons.

1. Percentages may not total 100 per cent due to rounding.

2. Leavers are identified as having ASN if they have any type of additional support need recorded.

3. This table only includes leavers with a robust match to the Pupil Census.

¹⁴ "Positive destination" is the term used to refer to those taking part in education, training, employment, voluntary work or that have an Activity Agreement. Unemployment is not included in positive destination data.

There were also notable differences in the post-school destinations of those with a visual impairment as compared with those with a hearing impairment. For example, those with a hearing impairment were more likely to be in employment (19.1%) than their peers with a visual impairment (13%), while those with a visual impairment were more likely to be unemployed and not seeking work (5.6%) than those with a hearing impairment (3.2%).

There were no deafblind school leavers in 2012-13.

Research on Visual Impairment and Attainment

The only recent research looking at the educational attainment of pupils at Scottish schools who experience visual impairment was published in 2009¹⁵. The study by the [National Centre for Social Research](#) (NatCen) was based on analysis of data on educational attainment for all four UK countries.

Data on attainment for pupils at schools in England, Wales and Northern Ireland can be analysed in such a way that information can be reported separately on (a) pupils with a visual impairment only and (b) those with a visual impairment and another disability. For pupils at schools in Scotland it is not possible to separate out these two groups of visually impaired pupils. This means that caution should be applied in analysis of trends in relation to attainment among pupils with visual impairment in Scotland as we do not know to what extent poorer outcomes may be related to having a visual impairment or to having another disabling condition.

The data analysed by NatCen was for school leavers who had a visual impairment or multi-sensory impairment¹⁶ recorded as the main ASN or reason for support. Given the age of this research, the figures are not reproduced here, although the trends and main findings are, as follows:

- School leavers with a visual impairment typically performed less well than those without an ASN, but better than leavers with most other support needs.
- The gap in the attainment levels of visually impaired school leavers was narrower when compared with leavers with other ASNs than that for pupils with no ASN. In other words, attainment was closer to that of pupils with other ASN than to pupils with no ASN.
- As the data presented in this research focused on attainment of school leavers (rather than results achieved by the end of S4) this may be hiding a wider gap in attainment affecting pupils with a visual impairment. Leaver data does not tell us about achievement by the end of compulsory schooling and whether more pupils with a visual impairment stay at school for longer to increase their tariff scores.
- A number of pupil and school characteristics were identified as affecting how well a school leaver had performed in secondary education. Educational attainment was reported as being poorer for the following groups of pupils with visual impairments:

¹⁵ Given the age of the data (from 2007) the findings of this research should be treated with some caution as figures will now be very out of date. The broader contextual trends are unlikely to have changed significantly.

¹⁶ Multi-sensory impairment means those with both a visual and a hearing impairment.

boys, those with a disability, those attending special school, those attending a school with high numbers of pupils receiving free school meals, and schools with high proportions of young people from deprived areas.

- Not being able to separate the attainment of pupils with only a visual impairment from those with a visual impairment and an additional disability makes it difficult to be clear as to the potential effects on attainment that relate to visual impairment or to having a disability that affects learning.
- Almost half of school leavers with a visual impairment had attended special school, compared with approximately a fifth of school leavers with other forms of ASN. This may indicate that pupils with a visual impairment required higher levels of support than their peers with other additional support needs. However, there are not sufficient data available to confirm this.

Research on Hearing Impairment and Attainment

A recent study from the University of Edinburgh¹⁷ (led by Rachel O'Neill) on the achievements of deaf pupils at Scottish schools, notes the relatively recent history of improvements in attainment affecting deaf school pupils. Many deaf people who are now in their forties are said not to have been entered for examinations at school, with school attainment significantly affected by late diagnosis and limited early intervention. For many in this age cohort, and older, leaving school early and a lack of formal qualifications will have had a long-term negative impact on employment prospects.

Various policy and legislative changes that have been implemented since the 1980s have significantly changed the way that education is delivered, specifically introducing requirements on mainstream education providers to support the learning of pupils with a range of additional support needs. The Education (Additional Support for Learning) (Scotland) Act 2004 consolidated much of this activity. There are now far higher educational expectations for all pupils. Alongside this, organisations such as the National Deaf Children's Society (NDCS) are working to highlight the educational attainment gap affecting deaf pupils.

Socio-Economic Inequality and Attainment

Comparing tariff scores at the end of S4 between deaf and hearing pupils, the research repeats the finding presented in Table 1, that deaf pupils achieved lower tariff scores than pupils with no ASN. The team looked in detail at the different categorisations of hearing impairment, including the attainment of those with a cochlear implant (CI). They found that those with a CI achieved higher tariff scores than other deaf pupils, although the tariff scores for deaf pupils with a CI remained lower than for hearing pupils.

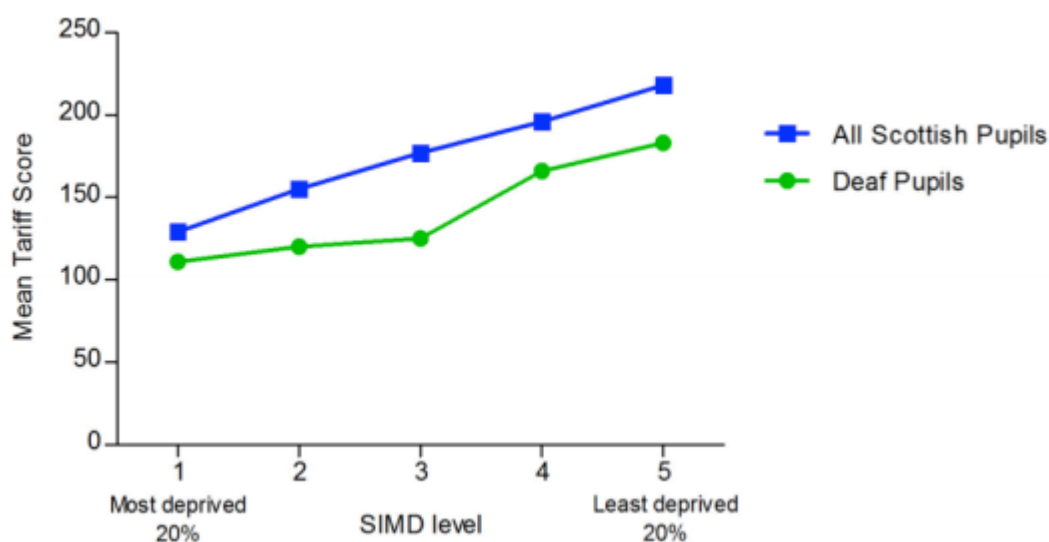
Importantly, the research suggested that any differences in the attainment of pupils by different deafness categorisations were negated once socio-economic inequality was considered:

¹⁷ University of Edinburgh [Achievement and Opportunities for Deaf students](#) Research Report (2014)

“The socio-economic status of the pupils is significantly related to their achievement at school, measured by the tariff score. After controlling for the effect of socio-economic status, the deafness category of pupils has no significant effect on their tariff score.” (p.43)

Figure 2 presents the tariff scores of deaf pupils and the whole pupil population by socio-economic position. It shows an upward trajectory in tariff score for both deaf and hearing pupils at S4, based on socio-economic differences. It also shows that deaf pupils had consistently lower tariff scores than their hearing peers.

Figure 2: Average tariff score of deaf pupils compared with all pupils at S4, by SIMD



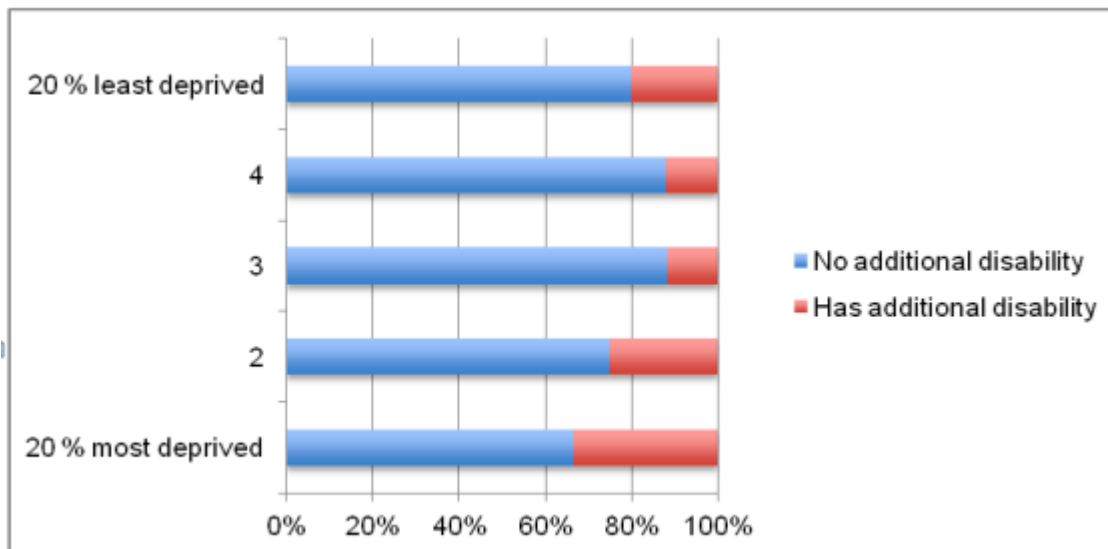
Source: [University of Edinburgh](http://www.ed.ac.uk/research/centres/education-research-centre) (2014; p.44)

Interestingly, the gap in attainment is not the same across all socio-economic groups. As Figure 2 shows, the gap is smallest for those pupils from the most deprived areas, and widest for those in the middle quintile. The researchers suggest that the narrowing of the gap for those living in the most deprived areas can be explained by the effects of targeted support provided to families in the poorest neighbourhoods. Those in the middle quintile are not likely to gain from this targeted publicly funded support and, unlike their more affluent peers, are less likely to benefit from the significant social capital (including parents being highly educated and active in pursuing educational achievements for their children) that is commonly associated with affluence.¹⁸

Added to this, the study also suggests that socio-economic factors may play a role in school placements, with deaf children from more affluent areas more likely to attend either a mainstream school or the specialist deaf school, while those from poorer areas are more likely to attend local authority special schools. Further, as Figure 3 shows, deaf children that have an additional disability are more likely to live in areas of deprivation than their peers with no additional disability.

¹⁸ <http://www.jrf.org.uk/sites/files/jrf/parenting-poverty.pdf>

Figure 3: Proportion of deaf pupils with at least one additional disability, by SIMD



Source: [University of Edinburgh](#) (2014; p.21)

In summary, the research suggests that “socio-economic deprivation appears to affect the schooling opportunities for deaf children, in that they are more likely to attend a special school” (p.31). It also found that deaf children with an additional disability did less well in examinations than deaf children with no additional disability. The team conclude from this that “having an additional disability has a significant [negative] effect on educational attainment.” (p.56)

These briefings are written by SPICe researchers for use by members. They offer brief background to the subject being discussed in Committee. These briefings do not intend to offer a comprehensive review of the literature, but merely to offer members a flavour of some key issues. While every effort is made to ensure information is correct at the time of publication, readers should be aware that these briefings are not necessarily updated or otherwise amended in light of subsequent developments. SPICe researchers are not able to enter into discussion about the content of these briefings with members of the public.