Inclusive Deaf Education: a summary of academic and social inclusion for the mainstream teacher.

Judith M. D. Philip

(PGCE Secondary Science: Biology, 2009-2010)

e-mail: judith.philip@cantab.net

Abstract

The Salamanca Statement committed signatories to provide mainstream education for all children unless it was clearly demonstrated that a regular classroom was incapable of meeting a pupil’s educational or social needs. This summary is intended for teachers new to deaf education. It reviews data concerning academic inclusion in terms of benchmark examination results of deaf pupils and the learning by deaf pupils when taught through a range of signed and interpreted methods. Social inclusion is discussed from findings of a qualitative study of deaf pupils’ opinions.

Observations from the author’s school placements during her initial teacher education are included. The stance taken in this article is that all classrooms should be able to accommodate deaf pupils in terms of curricular and academic inclusion. However, in order to also achieve social inclusion, the best educational choice may be in designated mainstream schools with hearing support units.

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Inclusive Deaf Education: a summary of academic and social inclusion for the mainstream teacher

The 92 governments and 25 international organisations who signed the United Nations Educational, Scientific and Cultural Organization (UNESCO) Salamanca Statement and Framework for Action on Special Needs Education committed themselves to the belief that:

“every child has a fundamental right to education…those with special educational needs must have access to regular schools which should accommodate them within a child-centred pedagogy capable of meeting these needs.”

(UNESCO, 1994, para. 2)

Since the United Kingdom is a signatory of the Salamanca Statement there is a legal and, many would argue, moral obligation for all UK schools to provide for all pupils regardless of whether they have educational needs resulting from physical or sensory impairment, language difficulties, behavioural problems or are at risk of being excluded due to gender, ethnicity or academic ability. However, the Salamanca Statement acknowledges that there are some individuals for whom special schools, or units within schools, may be needed if they are to be “given the opportunity to achieve and maintain an acceptable level of learning” (UNESCO, 1994, para. 2). Permanent education outside of the mainstream classroom “should be the exception” and only occur where it is “clearly demonstrated that education in regular classrooms is incapable of meeting a child’s educational or social needs” or is required for the welfare of other children (UNESCO, 1994, para. 9).

Here, the specific case of where deaf pupils should be educated is considered. Whether or not deaf pupils are a group whose needs are best accommodated away from mainstream classrooms is an area of controversy amongst education professionals, the families of deaf pupils and the deaf pupils themselves.

Following the convention used in a report on inclusion by the Royal National Institute for the Deaf (RNID, 2002), “deaf” is used here to indicate any person with an “educationally significant hearing loss”. It is not intended to specify whether or not a particular individual uses British Sign Language (BSL) as their first or preferred language or identifies themselves with the Deaf community. Although the Salamanca Statement uses the term ‘regular classroom’ to indicate a non-selective, non-specialised place for education, within this article the term ‘mainstream’ classroom has been
chosen because this is the term used by deaf people to indicate education in a classroom containing mainly hearing pupils (for example NCDS, 2008).

Deaf children have both sensory and language needs that need to be supported within the classroom. Within the UK, deaf children may receive their education in mainstream classrooms (full inclusion); mainstream classrooms with some time in a hearing support unit attached to the school, or in special schools, which may use oral English, Sign Supported English and/or BSL as the medium for education. In all cases, each pupil is likely to be supported by a specialised Teaching Assistant (TA) who may act as a note-taker, BSL interpreter or lip-speaker as appropriate to the child and situation. This article draws on the author’s initial school placements in two schools, one primary and one secondary, which hosted country hearing support units.

According to recent UK Government statistics from the then Department for Children, Schools and Families (DCSF, 2009a), the prevalence of deaf school pupils in England was approximately 0.2 % in January 2009 (equivalent to 2.2 % of children identified as having a special educational need). These statistics are likely to under-represent their true prevalence as they only include pupils with a statement of special educational need or on School Action Plus (School Action is omitted) and do not count those pupils for whom hearing impairment is a secondary need. Of these reported deaf pupils approximately 11 % were in special schools (all ages), 46 % were in state-funded primary schools and 43 % in state-funded secondary schools (DCSF, 2009a). The school data does not distinguish between deaf pupils educated in schools with hearing-support units and those who were the only deaf pupil within a mainstream school.

The range of educational provision for deaf pupils in England, and the rest of the UK, indicates that there is disagreement as to whether it has been “clearly demonstrated that education in regular classrooms is incapable of meeting a child’s educational or social needs” (UNESCO, 1994, para. 9). A difficulty faced by families, teachers and researchers interested in deaf education is deciding which factors are most important when considering whether inclusion is successful. A deaf pupil could be successfully included academically, in the sense that they are able to access the full curriculum alongside their hearing classmates, but could fail to be included socially. Conversely, a deaf pupil could be included socially but excluded academically.
Few research papers simultaneously consider markers of both academic and social inclusion when discussing deaf education. The research and data discussed below examine (1) academic inclusion in terms of the GCSE results of deaf pupils in England (DCSF, 2009b; Powers 2003, 2007); (2) an experimental approach that compared teaching deaf learners (both school pupils and university students) through a range of signed and interpreted methods (Marschark et al., 2006) and (3) the findings of a qualitative study of deaf pupils’ opinions of their education and social inclusion (RNID & University of Hertfordshire, 2002 and associated papers).

The stance taken in this article is that all schools should be able to accommodate deaf pupils within mainstream classrooms in terms of curricular and academic inclusion. However, in order to also achieve social inclusion, the best educational choice may be in designated schools with hearing support units.

**Academic Inclusion**

**School Census Data**

The most recent report of GCSE results attained by pupils in England at the end of Key Stage four (the benchmark examinations taken by 15-16 year olds) shows that pupils categorised as having hearing impairment performed less well than their peers who had no recorded special educational needs (Figure 1). Only 29% of deaf pupils achieved five good passes at GCSE including both mathematics and English. For comparison, this benchmark was achieved by 61% of pupils with no identified educational needs and 48 % of hearing children using English as an Additional language (a group that could be considered a useful comparison for native BSL users being taught and examined in English). Using either control group, deaf pupils perform less well than their hearing peers (Figure 1).

A difficulty with these DCSF statistics is that they provide no information at the level of the individual pupil. It is not possible to determine the type of school provision or other factors suspected to be correlated with the educational attainment of deaf pupils such as: extent of hearing loss, cause of hearing loss, date of onset of hearing loss (prelingual or postlingual), use of hearing aids or cochlear implants, language use at home (signed or oral), presence or absence of early
educational interventions, family history and attitude to deafness, educational attainment of parents, socio-economic background and prior educational attainment (Powers, 2003).

Figure 1: GCSE attainment of hearing impaired children when compared with those with no identified special educational needs. Produced from data from DCSF (2009b).

These factors are important when trying to determine whether educational attainment, as a measure of academic inclusion, is different for deaf pupils educated by full inclusion, supported by a unit at a mainstream school or in a special school. A further confounding issue is that these factors are interrelated in many, complex ways. Those deaf pupils educated in mainstream schools are likely to have less severe hearing loss, score more highly on intelligence tests and have fewer additional educational needs than deaf pupils educated in special schools (Powers, 2003).

More detailed surveys, with questions specific to the education of deaf pupils, are collected annually by the British Association of Teachers of the Deaf (BATOD) but low return rates have meant that data on attainment has not been published by this organisation (Powers, 2007). Those studies that have tried to control for confounding factors has reported that school placement has little effect on attainment (Kluwin, 1992, cited by Powers, 2003).

To summarise, the most recent quantitative data on educational achievement by deaf pupils in the UK shows that deaf pupils score poorly when compared to their hearing counterparts. However, incomplete data sets and the presence of complex interacting factors mean that it is inconclusive.
whether or not different school types are equally good at meeting the academic needs of deaf pupils. Other methods are required in order to determine what type of educational environment is best for deaf learners and whether mainstream classrooms can effectively meet the needs of this group of pupils.

Experimental Comparison of Learning through Signed Instruction, Sign Language Interpreting and Text Alternatives.

Marschark et al. (2006), report the results of four separate, but related, experiments investigating the learning by deaf participants (of school and university age) when different teaching and interpreting methods are used. Of these, Experiments Three and One are most relevant to the issue of whether all schools can successfully provide full academic inclusion for deaf pupils.

One of the main arguments in favour of special schools for the deaf is that they are able to provide direct instruction in sign language and so avoid the time-delay and possible misunderstandings introduced by interpreting between spoken and signed language (Marschark et al., 2006). Schools using sign language as a teaching medium are also more likely to employ deaf teachers and so provide lessons by deaf people for deaf people and so reduce the chance of bias towards a style of teaching more suitable for hearing pupils (Marschark et al., 2006).

Experiment Three from Marschark et al. (2006) was conducted in an Australian special school using Australian Sign Language (Auslan) for instruction complemented by real-time text translation into English. The experimental classroom educated 15 pupils simultaneously with five seeing Auslan only, five seeing Auslan and captions (provided on laptop screens) and five seeing the captions only (on a large screen). Three 20 min geography lessons were conducted within a week (covering similar content on the three cities London, Jakarta and Los Angeles). The pupils rotated round the three experimental conditions, experiencing all three conditions over the three lessons. The pupils were aged 12 –16 years and the material was new to all of them. Recall was tested immediately after each lesson using a 50-mark written test (covering new vocabulary, multiple-choice questions and true or false questions) and retested a week later.
To control for age- and grade-related differences in reading ability, the authors standardised the results from the learning assessments by the reading scores for each pupil (data from the Woodcock Reading Mastery Test). The method of this standardisation was not given.

The mean standardised scores (and standard deviations) following immediate testing show an interesting result (Table 1).

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean standardised score (standard deviation)</th>
</tr>
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<tbody>
<tr>
<td>Auslan only</td>
<td>0.44 (0.20)</td>
</tr>
<tr>
<td>Auslan and text</td>
<td>0.45 (0.25)</td>
</tr>
<tr>
<td>Text only</td>
<td>0.40 (0.19)</td>
</tr>
</tbody>
</table>

Table 1: \( n = 45 \), based on table 3, Marschark et al. (2006)

The authors state these test results were not significantly different by either parametric or non-parametric tests. Thus, for these deaf pupils there was no inherent advantage in receiving instruction directly through a signed language as opposed to via a text translation.

Given the potential significance of this negative result, further consideration of the sample sizes is warranted. Using an online post-hoc statistical power calculator my estimate is that, with the above conditions and an assumed normal distribution, one should expect to be able to detect a significant pairwise difference of more than 0.17 or 17% \( (p < 0.05, \text{http://statpages.org/postpowr.html}) \) between the Auslan-only and text-only conditions. Sadly, this experiment did not include a hearing control group receiving the text-only condition to see whether hearing pupils would have scored 62% in comparison to the 40 – 45% scored by the deaf pupils. However, the scale of differences in learning between hearing and deaf participants in the experiment discussed below was in the region of 24% so even this small-scale study might have been powerful enough to detect if direct instruction in sign language was sufficient to remove the disadvantages experienced by deaf pupils.

Taking into consideration the caveats above, these data give preliminary evidence that there is little advantage of instruction directly in a signed-language even for those pupils confident in this method of communication. This is a very important result for the teaching of deaf pupils in mainstream schools. If there is no inherent academic advantage to direct signed-instruction then a major barrier to justifying fully-inclusive education has been removed. Following on from this it then becomes
important to investigate which method(s) of interpreting spoken instruction are most beneficial to deaf learners.

Experiment One from Marschark et al. (2006) addresses this issue. This study recruited 95 deaf students and 32 hearing students from the Rochester Institute of Technology which includes the National Technical Institute of the Deaf as one of its constituent colleges. Two introductory level lectures were recorded along with American Sign Language (ASL) translations of this material. Real-time text was produced using the C-Print method (which via a trained operator, or automatic speech recognition, captures the essence of the lecture. It does not reproduce text verbatim). Participants then watched the lecture on life-sized video projection screens accompanied by (a) a life-sized projection of the interpretation, (b) a laptop displaying the C-print text or (c) both interpretation and C-print text. Hearing students watched the recording of the lecture on a television screen.

Students were tested before and after watching the lectures using multiple-choice questions with four alternative answers. Senior sign language interpreters administered the tests in spoken English or ASL as appropriate.

The results showed that hearing students knew significantly more than the deaf students before watching the lecture. The post-test scores were corrected for this (although the authors do not state the method given). Table 2 shows the learning assessment scores.

<table>
<thead>
<tr>
<th>Group</th>
<th>Deaf</th>
<th>Hearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>0.60 (0.18)</td>
<td>0.84 (0.14)</td>
</tr>
<tr>
<td>Interpreting</td>
<td>0.53 (0.20)</td>
<td></td>
</tr>
<tr>
<td>C-Print</td>
<td>0.67 (0.15)</td>
<td></td>
</tr>
<tr>
<td>Interpreting + C-Print</td>
<td>0.56 (0.15)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Based on table 1, Marschark et al. (2006)

Three main comments can be made from these data. Firstly, the hearing students scored approximately 24% better on post-test scores than did the deaf students. In other words, the hearing students benefited more from the lectures than the deaf students, regardless of how the information was made accessible to the deaf students.
Secondly, although none of the support services helped the deaf students perform as well as the hearing students, the students receiving C-Print alone scored significantly better (p < 0.05) than the deaf students in the other groups. Since C-Print is a relatively cheap method of providing access to auditory material for deaf people (since it can be automated to some extent and the operators require less training and pay than do interpreters and those who produce verbatim transcripts) this may be an important finding for the provision of support services to pupils in mainstream schools.

Thirdly, the deaf students who received interpreting and C-print did less well than those who received C-print alone. The authors interpreted this in terms of the students being uncertain which source of information to focus on and struggling to use both sources simultaneously. Other studies have reported that hearing students benefit from hearing and seeing complementary material simultaneously but struggle when having to split their attention between two sources of visual material (Mousavi, Low and Sweller 1995 cited by Marschark et al. 2006). In this context it might be important that the test lectures did not include visual aids. In a follow-up study (Experiment Two in the paper), in which the lecturers used PowerPoint slides, the advantage of C-Print over interpreting was not replicated.

In terms of curricular inclusion, there appears little intrinsic benefit in deaf learners receiving their education directly through a signed language. When considering the methods available in making auditory material accessible to deaf learners, there is some evidence of an advantage in providing a simultaneous text alternative over sign-language interpreting, although this advantage disappeared when the experimental lecture made use of visual aids (possibly due to visual overload). Those studies that have compared learning by hearing and deaf participants (both children and adults) have consistently found that those who can hear benefit more from the same material. This might be related to a wider general knowledge of hearing people before the new material is presented so that they are better able to accommodate the information. Early differences in background knowledge (perhaps because of conversations overheard by hearing babies and children) could be rapidly exacerbated during childhood (both in formal lessons and informally in playgrounds and at home). Unless, or until, an intervention is found that helps deaf children to overcome these disadvantages, it appears that deaf pupils receive an equally good (or bad, depending on your point of view) education in both special and mainstream settings.
From an academic perspective then, these data support the view that mainstream schools should be able to provide as good an education for deaf pupils as special schools. However, access to the curriculum is what teachers and adults consider to be of over-riding importance when discussing inclusion, whilst deaf pupils themselves focus on friendship (RNID, 2002). It is to the opinions of deaf pupils and their views of social inclusion that we now turn.

**Social Inclusion**

**Pupil Voice**

A major qualitative study of the views of deaf and hearing pupils on inclusive education was carried out on behalf of the RNID and the then Department for Education and Schools by the University of Hertfordshire during the 2001/02 academic year. The research was published as a full report (RNID & University of Hertfordshire, 2002) and a paper of the major research findings (Iantaffi, Jarvis & Sinka, 2003). Earlier in the project, a methodological paper was published as a work-in-progress report (Jarvis, Sinka & Iantaffi, 2002).

61 deaf pupils and 22 hearing pupils were interviewed in the project. The participants were gender balanced (53% female) and all at Key Stage 3 (35% in Year 7, 39% in Year 8 and 26% in Year 9). They were from 25 schools in 16 areas of England which were either mainstream schools with a hearing support unit or mainstream schools with an individual deaf pupil. The deaf pupils had a range of hearing impairments (31% moderate hearing loss, 28% severe hearing loss, 34% profound hearing loss, 7% Cochlear Implant recipients). The participants were interviewed in focus groups (separate groups of hearing and deaf pupils) and as individuals (deaf pupils only). The focus groups and individual interviews were structured and conducted by a single researcher who was fluent in both BSL and English. This allowed the deaf pupils to communicate in their preferred language.

The authors of this report state that friendship was the topic that the pupils most frequently spoke about and concluded that “successful social inclusion firmly underpinned successful academic inclusion” (Iantaffi, Jarvis & Sinka, 2003, p154). The interviewees expressed a range of views but there was a common theme that it was important to have friends like themselves. However, the
following quotations show that for the first pupil someone ‘like’ them is someone who is deaf whereas for the second someone ‘like’ them is someone who shares their interests.

“What hearing are better off, they can hear and make friends with other hearing. Deaf only have to make do with few deaf friends.”

(Year 9 female pupil, profound hearing loss, signing; RNID, 2002, p94)

“I have friends who are a bit like me, we’ve got lots of things in common and we just hang around with each other. We’re completely loud, we are and we’re into the same kind of things, like our favourite subjects are the same and stuff like that, our favourite teacher’s the same, the kind of music, the same taste and stuff.”

(Year 8 female pupil, severe hearing loss, oral; Iantaffi, Jarvis & Sinka, 2003, p154)

Despite the importance of having people ‘like’ themselves, some of the deaf pupils spoke very positively of friendships with hearing pupils whilst acknowledging differences between the two groups:

“All my friends, they treat me like one of them, like I’m not deaf but they do understand if, like, something happens. They do understand that I’m deaf and they know I get bullied for it and they do back me up all the time, they do.”

(Year 8 female pupil, severe hearing loss, oral; Iantaffi, Jarvis & Sinka, 2003, p155)

“I think it’s a good thing to be with deaf people and hearing people because if you were all deaf people, then you’d all be into the same things, like sign language and that, but if you’re in a school like this, with hearing people, they can be different so it’s good to be with different people who all like different things.”

(Year 7 female pupil, severe hearing loss, oral; RNID, 2002, p94)

My impression, from my own school observations, are that it is important for teenage deaf pupils in a mainstream school to have other people like themselves. There seemed to be a security in having a group of deaf pupils together that allowed each of them to then make their own friends and follow their own interests. I am sure that some of the more confident pupils would have coped well in any mainstream environment, but having the group together was a source of security for them all.

Another theme that appeared from the report was that the deaf pupils knew that they needed extra support in class but although they wanted their teachers and TAs to be understanding, they did not want to be singled out for attention. For example:
“Sometimes they’re [the teachers] good, they look at you when they’re explain things. Sometimes they just look at you but then sometimes they really just look at you for ages and then you want them to look at someone else, and then you won’t feel a bit uncomfortable. They do it because they think ‘Oh, she’s got to lipread me, ‘cause she can’t hear me’ and stuff like that.”

(Year 8 female pupil, sever hearing loss, oral; RNID, 2002, p81)

“When we were sitting in a circle [during a mainstream class], we were all talking including myself, and she [teacher] told everyone to be quiet. She started saying ‘You need to be quiet because we’ve got a deaf person’. After she finished, you get them all looking at you and you’re like ‘erm’.”

(Year 8 female pupil, severe hearing loss, oral; RNID, 2002, p78)

I observed this desire to not be singled out for attention when observing a series of science lessons in which there was a male Year 7 pupil with a cochlear implant. The teacher wore a radio microphone so that the pupil could hear her but in one lesson his hearing aid was picking up the radio microphone from a nearby classroom and in another lesson the teacher forgot to turn her microphone off during the group work. In both cases this pupil did not hear what would have been helpful (the correct lesson or the discussion of his group) and did not draw it to the teacher’s or TA’s attention because he did not want to be embarrassed.

It is not possible to prevent teenagers being self-conscious (whether deaf or hearing), but having a group of deaf pupils in a school does provide a peer support network. The secondary school that I observed organised a weekly PSHE lesson for all the deaf pupils in the hearing support unit to discuss issues particularly relevant to this group. These lessons allowed for deaf adults from the local community to be introduced as role models, in addition to the older pupils being role models for the younger pupils. The school also provided lessons in BSL as a curriculum option for hearing and deaf pupils in Years 10 and 11. There may be other advantages of having many deaf pupils in a single secondary school in terms of raising the profile of deaf-awareness in the school as a whole. It might be possible to have regular training for staff in how to make their lessons and classrooms more accessible. In schools with a number of specialist TAs supporting deaf pupils, the TAs could be timetabled to work in particular departments thus giving them the opportunity to develop their subject-specific knowledge.

Paradoxically, there may be a social disadvantage to gathering deaf pupils in a single school with a hearing support unit. Deafness is a low-incidence condition and to have enough students in each unit to reach the numbers required to have a ‘critical-mass’ of a deaf peer-group, the pupils needs to
be recruited from a wide geographical area. In the case of the schools I observed, the hearing pupils lived within the catchment area and either walked to school or arrived by school bus. As such these pupils lived reasonably close together (and so were easily able to meet up in the evenings and at weekends). In contrast the deaf pupils almost all arrived at school in taxis that had carried them from outside the catchment area and so may have found it more difficult to socialise with school friends outside the school day.

In the case of the primary school I observed, despite hosting a county hearing support unit, there were only three deaf pupils in the school (one each in Reception, Year 1 and Year 2). Although these three pupils knew each other they did not appear to form a deaf peer-group like the one I observed in the secondary hearing support unit.

That is not to say that these primary pupils were socially excluded in the classroom. In the case of the deaf girl in the Reception Class (signing with a cochlear implant) she had quickly made friends with a hearing boy in her class. These children played together frequently during the school day. However, this boy’s father expressed to me his concern about how best to invite her to his son’s next birthday party since he had never met her parents, did not know exactly where they lived and was unsure how best to communicate with them as he believed them to also be deaf BSL users. To provide true social inclusion for this pupil I think it would be appropriate for the staff of the hearing support unit to help make the contacts needed to involve her in informal gatherings outside the school day.

Directions for Further Research

As indicated above, the ability of families, schools and policy-makers to make informed judgements about the best educational provision for deaf pupils is hampered by incomplete data. Although surveys collecting information from Teachers of the Deaf have proven impractical at a national level, such data might usefully be collected within a single county. In the case of my area, the Hearing Support service provides Deaf Support Workers and Teachers of the Deaf who, together, form a ‘virtual school’. All the workers in this ‘school’ know each other and are managed from a single office. If there were the will locally, it ought to be possible to collect data on all the deaf pupils being educated in state schools (both mainstream and in hearing support units) within
the county. These data could then be used to more satisfactorily answer questions about the academic inclusion, attainment and progress made by the deaf pupils.

In order to determine whether my concerns about the distances travelled by deaf pupils to specialist units are warranted, data should also be collected on the time of commute for each deaf pupil to school. Qualitatively, the views of the deaf pupils themselves should be sought with questions specifically addressing the time they spend with friends both within and outside school hours. To my knowledge, data of this type has not previously been reported.

**Conclusion**

In conclusion, there is no straightforward answer to whether all schools can fully accommodate all deaf pupils’ needs. From an academic perspective no system has yet found a way to compensate for the disadvantages experienced by deaf pupils and every school should be able to provide the support needed to include deaf pupils in their curriculum. However, if having deaf peers is an important part of a deaf pupil’s education then not all schools can provide this. In my view the best compromise seems to be to have designated mainstream schools with units that provide supported education for groups of deaf pupils. However, due to the low incidence of deafness many pupils may have to travel long distances to school and so might be disadvantaged socially in the evenings and at weekends.

**References**


