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Collaborative Working Practices in Inclusive Mainstream Deaf Education Settings: Teaching Assistant Perspectives

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Collaborative Working Practices in Inclusive Mainstream Deaf Education Settings: Teaching Assistant Perspectives

Abstract

This paper presents findings from an empirical study that investigated the learning experiences of deaf students in mainstream secondary classrooms, from teaching assistants' (TA) perspectives. These findings indicate that effective collaboration between mainstream teachers and specialist teachers of the deaf (ToD) is required to ensure appropriate expectations of deaf students to support improved outcomes. A qualitative, collaborative methodology was developed that facilitated a trustworthy approach to the collection of data to represent TAs' perspectives. The participants comprised 10 TAs, 5 mainstream teachers, 7 deaf students and 3 ToDs. Each TA had a minimum of three years' experience supporting deaf students in mainstream classrooms. The TAs discussed their experiences in focus group discussions and semi structured interviews. Interview data, generated by the other participants, served to validate the TAs' perspectives of their working contexts. Consideration was given to how the TAs talked about learning and the challenges they perceived deaf students encountered, with particular emphasis on specialist knowledge and working relationships in the classroom. The TAs were explicit in their belief that mainstream teachers were frequently unaware of the challenges many deaf students experienced. Analysis revealed the degree of collaboration between mainstream teachers, ToDs, TAs and deaf students, and the limited extent to which specialist knowledge informed pedagogical and support practices.

Keywords: collaborative practice, mainstream, teaching assistants, teacher of the deaf, deaf education, inclusion

Introduction

The majority of deaf ¹ students in the UK are educated within mainstream schools (CRIDE, 2015). Despite considerable technological advances in the detection and audiological management of deafness (Uus and Bamford, 2006; Yoshinaga-Itano, 2003), combined with an extensive body of research into the impact of deafness on children's learning (Archbold, 2010; Leigh, 2008), deaf students continue to underachieve in all curriculum areas when compared with their hearing peers (Hendar and O'Neill, 2016). In 2014 just 36.3% of UK deaf students, identified as requiring additional support, gained the expected level of academic qualifications for 16 year olds, in contrast to 56.6% of the general school population (DfE, 2015).

Within the field of deaf education research, policy and practice has predominantly focussed on language based approaches, leading to pedagogical considerations becoming subsumed into deliberations about language policy (Swanwick, 2017). There is a growing recognition however that, as deaf children are individuals for whom deafness impacts on all aspects of their lives and communication uniquely, there is not a single approach to the education of deaf children (Knoors and Marschark, 2015; Swanwick, 2017; Swanwick et al., 2014). Whilst there has been extensive research examining how deafness influences the development of cognitive, social and emotional skills, there is little research evidence to indicate such findings are influencing practice in the classroom. New perspectives and understandings of deaf children's learning within the classroom are therefore, required (Knoors and Marschark, 2014; Leigh and Crowe, 2015; Marschark and Hauser, 2008).

¹ Within the UK, and in this paper, the term deaf is used to describe all levels of deafness that impact on a person's ability to access spoken language, including in noisy environments

The aim of classroom interaction is to impart knowledge and to facilitate students' structured learning of predetermined curricula, the success of which is ascertained by exam performance. Classrooms however, are complex places in which a myriad of nuanced and interlinked influences impact on interactions; influences present in the classroom and external to it, both in place and time. Each person, be they student, teacher or TA, bring their life experience, skills and resources into this dynamic environment. In order to better understand the influences on learning in the classroom it seems appropriate therefore, to develop an approach that highlights the internal process of the students and the external influences on them, within this dynamic environment. Learning is a complex process that has been studied from different perspectives. This includes Piaget's early work (Piaget, 1952), situated within the field of psychology and Vygotsky's (1962) seminal work on thought and language which sits within the field of social constructivism. These two approaches have been considered to loosely form either end of a continuum of perspectives on learning (Bruner, 1997). In recent years, consideration has been given to the development of a holistic theoretical approach that aims to capture both the psychological and social constructs of learning (Illeris, 2003; Jarvis, 2005). Illeris (2005) developed a theoretical framework, the Complex Model of Learning, that embraces the internal processes and the external influences on learning, and this model supports the analysis of the data. This paper considers the working practices between mainstream teachers, teachers of the deaf (ToD), teaching assistants (TAs) and deaf students from a holistic perspective.

Current UK context

In the UK, deaf students attending mainstream schools will receive support from a ToD, who will work alongside other professionals to determine the nature and level of support the student requires. Such support is determined by the students' learning needs,

rather than a predetermined language or placement policy (DfE and DfH, 2014). The process includes consideration of the deaf student's language skills and the communication support they require to fully engage in classroom interactions. It is likely to include the provision of audiological technology and, when appropriate, access to sign language support through British Sign Language (BSL) and/or Sign Supported English (SSE). Where a student requires support for communication and/or learning they are likely to receive this from a TA. The term TA is applied generically to educational practitioners, excluding qualified teachers, who support teaching and learning in the classroom and include individuals with particular skills and knowledge to support specific students. It is unlikely that such support would be provided by a deaf TA within the mainstream classroom. A deaf TA, usually referred to as a Deaf Instructor, is likely work one-to-one with a deaf student, or within small group teaching situations.

The potential benefit of TA support for all students has been scrutinized (Alborz et al., 2009; Webster et al., 2010), and it has been suggested that it may be detrimental to students' academic outcomes, particularly for those students identified with special educational needs (SEN) (Blatchford et al., 2009). Such conclusions are frequently based on a general or a 'simple classification of SEN' (p.136) (Blatchford et al., 2011) which is problematic as students identified with SEN are not a homogenous group, but represent a diverse set of individuals with multiple learning experiences, skills, abilities and needs. Despite these findings, very little research has investigated TAs' perspectives of classroom practice, to inform our understanding of their role or the learning environment. Some studies have engaged TAs in evaluating training (Butt and Lowe, 2012) and investigated the sensitive topic of their own status in schools (Watson et al., 2013), but not their understandings of classroom practices. TAs remain a predominantly untapped source of information and their perspectives are

underrepresented in informing our understanding of students' classroom experiences, despite accounting for approximately 25% of the school workforce (Webster and Blatchford, 2013). The wider study, from which this paper reports, aimed to address this situation.

The main role of the ToD is to ensure 'the raised achievement of children and young people who are deaf' p.4 (NCTL, 2014), and ToDs are required to undertake mandatory specialist training. How the role is executed will depend on where the deaf student is educated and the nature of their needs. Deaf students attending special schools and resource bases (co-located provision) will be taught directly by a ToD for at least part of the time whilst the majority of deaf students attending mainstream schools will not. Peripatetic or itinerant ToDs increasingly work within an advisory capacity (CRIDE, 2015), providing information and training for mainstream teachers and TAs. In a primary setting, where a deaf student spends their time predominantly with one teacher, there is the potential for the ToD, teacher and TA to develop effective, collaborative practices. Within a secondary setting this is more challenging, as the deaf student will be taught by different subject teachers. Responsibility for the deaf student remains with the class/subject teacher and the mainstream school, therefore the class teacher will make decisions about classroom practice to meet the needs of the entire cohort, of which the deaf student is a part. Whilst there is no requirement for a mainstream teacher to engage with specialist teachers, nor to accept and follow their advice, schools are required to meet the needs of their pupils by removing barriers to learning and ensuring full access to the curriculum (DfE and DfH, 2014). Yet the particular challenges a deaf student might encounter may not be immediately evident to a mainstream practitioner. Indeed there may be a perception that if a deaf student has functional language skills, and is able to hear what is being said, or can access speech through an interpreter, they will be able to learn in the same way as their hearing peers

(Swanwick and Marschark, 2010). Such perceptions may be further exacerbated if a deaf student works closely with a TA (Webster et al., 2013). The TA is likely to adapt and introduce support strategies in response to the student's learning experiences and, consequently, the teacher will not be fully aware of the challenges, resulting in differentiation, support strategies or significantly the implications for the student's learning and potential progress. This further rationalises the need to investigate TAs' perspectives of classroom practices.

For students with SEN to be successful their teachers need to be flexible in their thinking and pedagogical practices. They need to engage in collaborative professional relationships (Fisher et al., 2003) and to have a clear understanding of the challenges the students encounter. For deaf students such knowledge and understanding is extensive, as evidenced by the requirement for specialist teachers (NCTL, 2014). Effective collaboration between teachers, ToDs, TAs, other educational professionals and parents needs to underpin educational practice if the knowledge and understanding of the impact of deafness on learning, for an individual student, is to successfully shape classroom pedagogies. Such collaboration requires cooperation, acknowledgement, respect for contributions from a range of professionals and sufficient time given for planning, monitoring and evaluation (Webster et al., 2011).

Within a mainstream secondary classroom, in which there is a deaf student requiring additional support, it was anticipated that the practitioners would include a mainstream teacher, TA, and ToD, and that the deaf student would develop a working relationships with each of them. It was also anticipated that team members would liaise with each other (figure 1) as recommended in the SEN Code of Practice (2014). Meetings between the teacher, TA and deaf student were expected to occur more frequently as they are all based in the same establishment than with the peripatetic ToD.

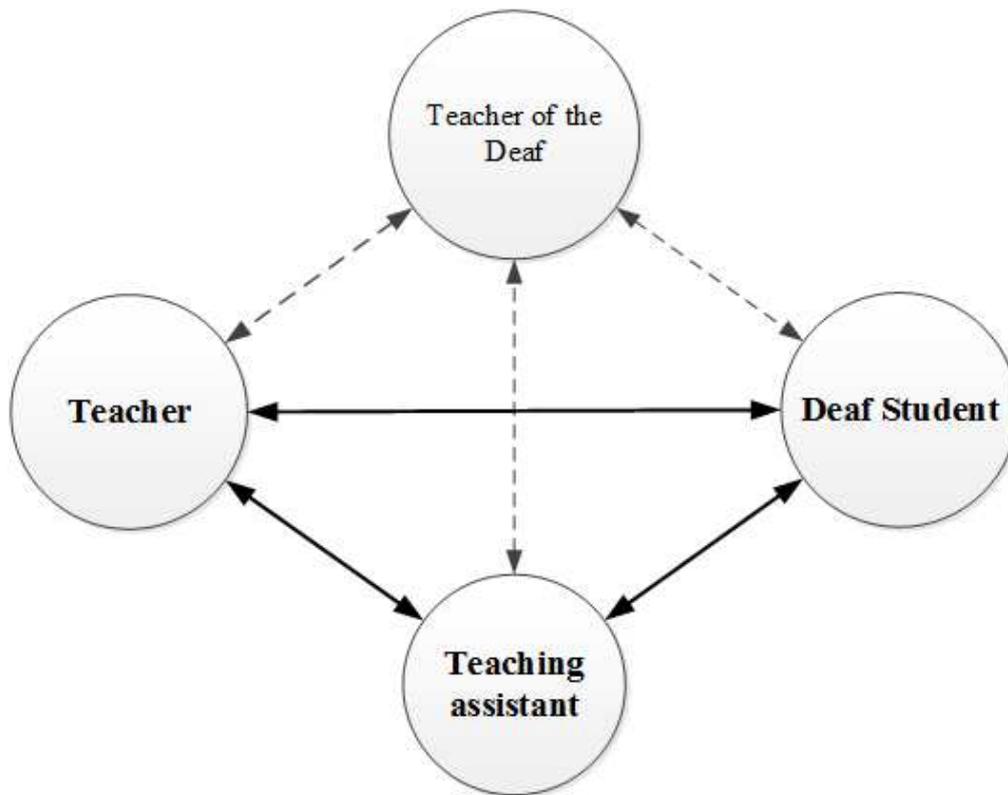


Figure 1 Anticipated working relationships in a mainstream classroom

In order to better understand the relationships and resulting collaborative practices between the teacher, ToD, TA and deaf student, the perspectives of TAs were sought.

The data was investigated to address the following questions:

- What is the nature of the relationships between the teacher, TA, ToD and deaf student in a mainstream setting?
- How does collaboration between the mainstream teacher, TA and ToD facilitate the use of specialist knowledge to inform pedagogical practices for deaf students?

Methodology

The study was designed to enable TAs to develop and share their perspectives of deaf students' learning experiences in mainstream secondary classrooms. In order to ensure

that the TAs' perspectives could be represented as accurately as possible, and remain faithful to their intent, a number of stages of validation were included in the study design. All the participants were provided with clear information about the nature and purpose of the data collection and were able to withdraw at any time. Ethical approval for the research was granted by the University of Leeds Ethics Committee.

The study design

Data was collected using a three stage, iterative, qualitative research cycle that engaged three different groups of participants:

- The Data Group - six TAs from the same local authority, who currently support at least one deaf student each in a mainstream secondary school.
- The Consultancy Group - four TAs from a three different local authorities, who currently support at least one deaf student each in a mainstream secondary school.
- The Reference Group - deaf students, mainstream teachers and ToDs who worked with the TAs recruited to the Data Group

Three core principles were identified that would enable the TAs to talk freely; to develop their understanding of their experiences of mainstream secondary classrooms and to ensure the data accurately reflected their perspectives. To achieve this the data needed to:

- i. reflect the complexity of the classroom environment,
- ii. enable the participants to reflect on and develop their own understanding of their role,
- iii. be interpreted in a manner that ensured the integrity of the TAs' perspectives.

The first two principles were addressed by including an iterative process, over a six month period, involving two different methods to generate the perspectives of the Data Group TAs. This formed the Core Data set. (See Figure 2).

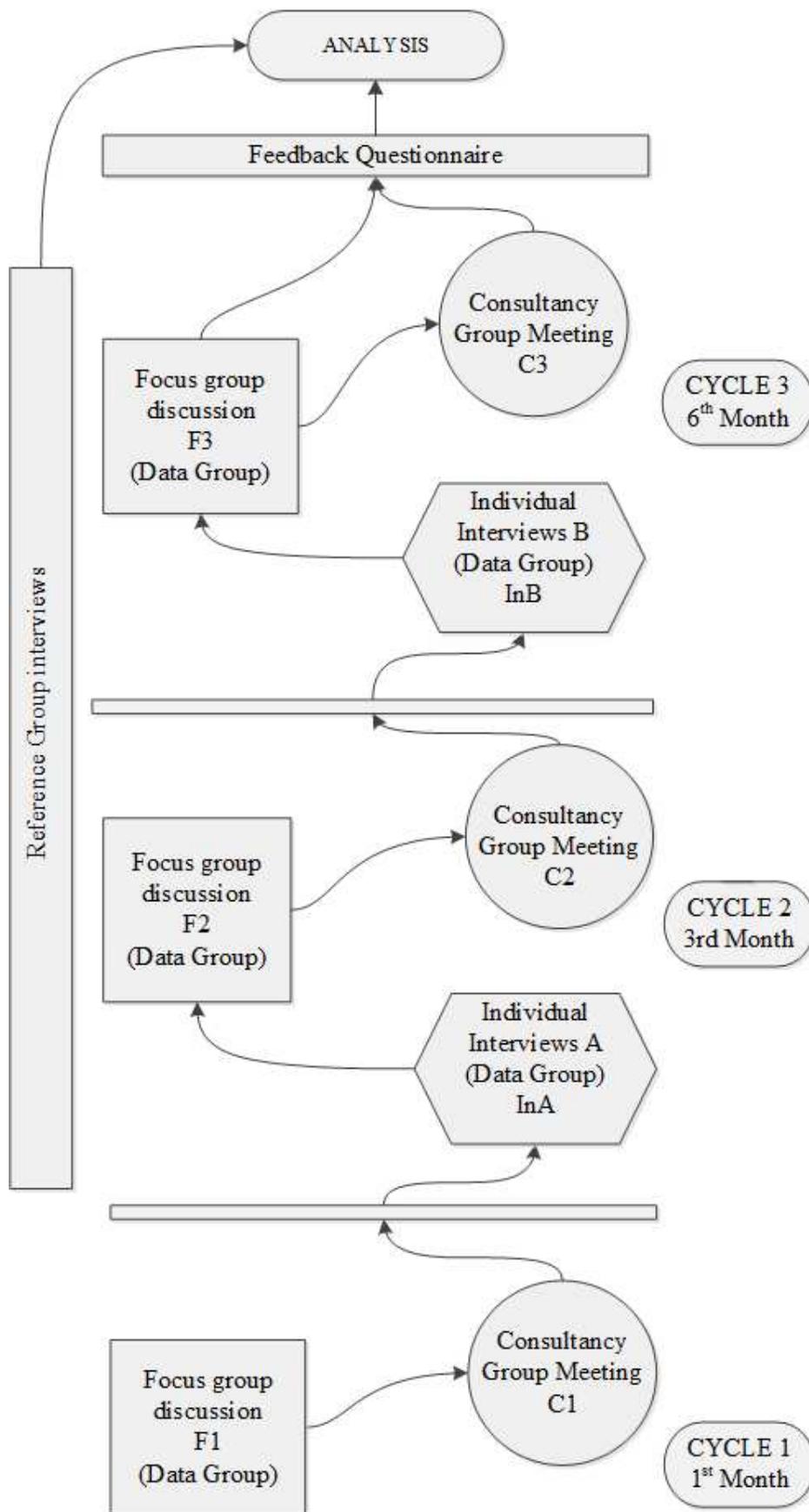


Figure 2 Study Design

In the first cycle, data were generated through a focus group discussion (F1). The agenda of the meeting comprised three questions developed to encourage discussion about classroom practices:

1. What is the purpose of your role within the classroom?
2. What things do you need to be aware of when supporting a deaf pupil?
3. If you were mentoring a new TA, what are the key issues you would want to ensure they understood within the first few months

The second cycle included individual, semi-structured interviews (In.A), with each member of the Data Group, followed by a focus group meeting (F2). Each interview included a video recording of the TA working with a deaf student, to provide stimulus for the discussion. The TA was free to use the recording as they wished to describe their practice. The agenda of second focus group discussion (F2) was developed by the TAs. Each TA identified a specific issue they encountered in their role that they had discussed during their individual interview. These formed the agenda items.

The third research cycle consisted of individual interviews (In.B), with the TAs, and the final focus group discussion (F3). The interview included a second video recording of each TA working with a different pupil, or the same pupil in a different lesson. Again the TA was free to use the recording as an artefact to stimulate discussion. For the final focus group meeting (F3) each TA was asked to identify three significant challenges encountered, these were collated to form the final agenda. All focus group discussions, and individual interviews, were audio recorded and transcribed verbatim. These transcripts formed the core data set.

The final principle identified, to ensure the data remained true to the TA perspective, was address using two strategies. First, the Consultancy Group provided confirmation that the initial interpretation of each of the focus group discussions

retained the TAs perspectives, prior to the subsequent research cycle. Each member of the Consultancy Group was provided with a full transcript of the focus group discussion and a report containing the initial interpretation of the data. These were discussed during the Consultancy Group meetings (C1, C2, C3) and adjustments made as necessary. Minutes of the meetings were taken and ratified at the subsequent meeting. The second strategy involved the Reference Group members who provided information about the working environments of the individual Data Group TAs, by means of short semi-structured interviews, to triangulate the Data Group perspectives. Each member of the Reference group were asked to comment on:

- a) their involvement in planning the TA support
- b) their role in monitoring and evaluating the TA support
- c) the type of support strategies the TA might use.

These interviews were audio recorded and transcribed verbatim.

Finally, the TAs completed a feedback questionnaire (FQ). Table 1 provides an overview of the provenance and nature of the data collected.

CORE DATA	VALIDATION of CORE DATA
Data Group	Consultancy and Reference Groups
3 Focus group discussion transcripts	Validated by the Consultancy Group during Consultancy Meetings
12 Individual interview transcript	Triangulated using the Reference Group Data i.e. Semi-structured interview transcripts: 5 Mainstream teachers, 5 Deaf students , 3 ToDs
8 Feedback questionnaires	

Table 1 Nature and provenance of the data collected

Recruitment

TAs were recruited to the study in response to a request for interest, distributed by Heads of Sensory Support Services, to all TAs employed in their authority. TAs identified for the Data Group met with a researcher to discuss the implications for their work colleagues, i.e. ToD and mainstream teachers, and for the deaf student. These potential participants were provided with information about the research and needed to be willing to participate, in order for the TA to be accepted.

The Participants

The Data Group comprised six TAs from one local authority. They each supported at least one deaf student in one of four schools. The Consultancy Group comprised four TAs from three different local authorities, who supported deaf students within three different schools. All the TAs had a minimum of three years' experience, with over 50 years between them. Throughout the course of the discussions TAs referred to both previous and current experiences. At the time of the research, none of the Data Group TAs were supporting students who required BSL or SSE communication support, however two members of the Consultancy Group were. The Reference Group consisted of five mainstream teachers; seven deaf students and three ToDs who worked with the TAs recruited to the Data Group. It included two maths teachers, two English teachers and a drama teacher. The deaf students consisted of: 1xY7; 1xY8; 3xY9 and 2xY10 students and included three girls and four boys. Two students had a mild hearing loss; one a moderate loss; one a severe loss and three a profound loss. Two of the students were described as having additional learning needs. The seven pupils were under the supervision of three ToDs, one of whom visited two of the schools.

Analysis

The analytical process applied to the core data set was designed to reveal how TAs talk about learning, and how they describe the issues that deaf students' experience, to inform a wider study regarding deaf students' learning experiences in a mainstream classroom. Data specifically relating to working relationships in the classroom, and the use of specialist knowledge to inform pedagogical practices, were identified as part of this process, to address the research questions presented in this paper.

The analytical process consisted of four stages, each stage prepared the data for the subsequent stage.

Stage 1 involved the initial interpretation of the focus group data at the end of each research cycle. The interpretation was validated by the Consultancy Group to ensure it was representative of the TAs' perspective

Stage 2 occurred on completion of the data collection. The TAs had discussed a wide range of issues and it was therefore necessary to identify data related to the how TAs talk about learning and how they describe the issues that deaf students' experience, from within the data set.

Stage 3 involved coding the data identified in stage two using an analytical framework and coding strategy developed from Illeris's (2005) Complex Model of Learning. In order to interrogate the data from a holistic perspective it was necessary to develop an analytical process that highlighted both internal and external aspects of learning. This is not to suggest that such aspects of learning are separate or mutually exclusive, but rather that they are different views of the same complex situation. Illeris's (2005) Complex Model of Learning was developed as a framework for analysis to ensure that the significant impact of deafness on interaction and communication was also exposed in the data. The resulting framework identified six key aspects of deaf students' learning experiences within a classroom environment:

Internal factors

- Content: internal cognitive function and content of learning
- Incentive: physical and mental balance required for effective learning
- Internal Interaction: students' linguistic skills and communicative resources

External Factors

- External Interaction: external process of interaction between the deaf student and others
- Social Situation: organisation and culture of the classroom
- Wider Societal Situation: influences on the classroom organisation and culture originating externally

Stage 4 involved analysing thematically the data within the coded categories using Rabiee's (2004) framework developed for focus group data. The framework advocates consideration of the data using eight criteria: words; context; internal consistency; frequency; intensity of comments; specificity of responses; extensiveness and the big picture

During Stage 2, 3 and 4 a second researcher also analysed parts of the data to ensure there was high inter-rater reliability. Finally, consideration was given to the feedback questionnaire and the Reference Group data to validate the findings.

Results

The data analysis revealed common experiences regarding the working practices of TAs, ToDs and mainstream teachers, and the TAs' experience supporting deaf students. It also indicated that specialist knowledge of the impact of deafness on learning was having limited impact on classroom practices.

Working relationships in the mainstream classroom

The TAs revealed a number of challenges in respect of the different working relationships that exist within a classroom. They discussed their relationship with the deaf student and reported limited opportunities to liaise with the mainstream teacher or the ToD. Additionally, the TAs described meetings between the ToD and mainstream teacher as being rare.

The TAs reported that some mainstream teachers anticipated that the presence of a TA would ameliorate the challenges deaf students encountered.

'What I find is some teachers just think oh you're deaf [the student] so Miss [the TA] will look after you' (TA2,F3)

Indeed teachers confirmed they regularly allowed the TA to take responsibility for the deaf student:

'you can leave them [the deaf student]...because they've got support' (T-TA3)

Consequently, deaf students frequently acquired information from TAs, both during and after lessons. One TA described her practice in the classroom:

'So that was...working through with him, to show that actually doubling it was completely wrong' (TA5,In.A)

Another a TA described her approach after a lesson

'You'd go through everything, make sure they've understood' (TA6,In.B)

This was confirmed by one class teacher who described her expectation of the TA as:

‘To explain again, to reiterate what I have said in case they’ve not heard it the first time and just to clear up any misconceptions’ (T-TA4)

TAs also reflected on their relationships with the students. They felt that there were difficult balances to achieve, particularly between providing support and ensuring the student could work independently. The TAs felt they knew and understood the needs of the students more comprehensively than many of the mainstream teachers and consequently, the students felt more confident asking them a question, rather than the teacher.

‘Yes they understand you more, because they've got this relationship with you, they can ask you three times, they can't ask the teacher again and again’ (TA2,F3)

‘They find us more approachable than some teachers...they find it easier to talk to us’ (TA6,F3)

This invariably reduced the opportunities for the mainstream teachers to develop their knowledge and understanding of the student.

Opportunities for professional collaboration between any combination of the mainstream teacher, TA and the ToD were described as limited. TAs rarely mentioned the ToD when discussing their working practices, however when TAs had the opportunity to engage with ToDs, they felt the advice was extremely valuable.

‘Without her I wouldn't be able to do some of the things that I can do’ (TA2,F3)

This was corroborated by ToDs, who also described limited opportunities to meet with TAs and mainstream teachers.

‘I think schools generally...need to show that they're coping...it's almost as if they feel that, that's positive... “Don't worry the TA comes on your training, she can train the staff” (ToD-A)

Whilst some ToDs had direct contact with a school's SEN Coordinator (SENCO), and occasionally a mainstream teacher, others ToDs only met with TAs. The approach of a schools' Senior Leadership Team (SLT) was identified as an important influence on the staffs' engagement with the ToDs, and to recognise the diverse needs of the deaf pupils.

‘each school works completely differently...sometimes it's a nightmare, other times it works really well...it's...knowing how to manipulate senior management.” (ToD-B)

The relationships between the deaf student, mainstream teacher and ToD, as presented by the TAs, is illustrated in figure 3. The deaf student spends most of their time engaging with the TA. The student's contact with the teacher and the ToD are limited and not certain. The teacher's contact with the TA, to liaise regarding the deaf student, is limited and not certain. The TA's contact with the ToD is limited and frequently the ToD does not meet with the mainstream teacher. The dominant relationship between the practitioners and the deaf student is, therefore, between the student and the TA.

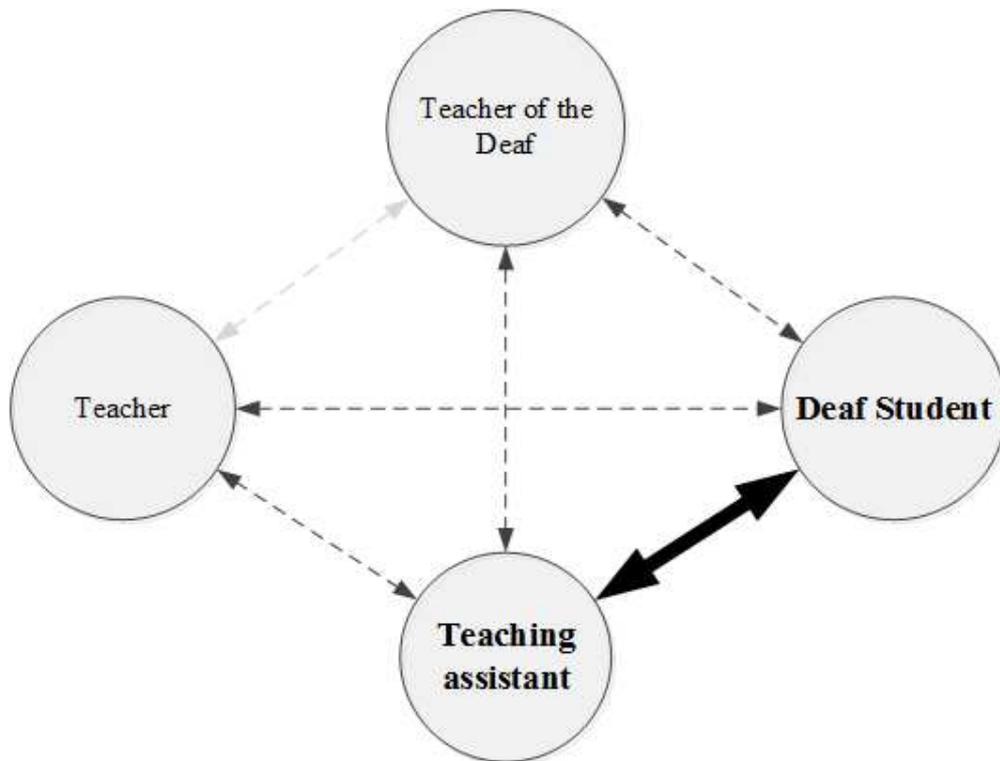


Figure 3 Relationships within mainstream classrooms

The impact of specialist knowledge in the classroom

The TAs were explicit in their belief that mainstream teachers were frequently unaware of the particular challenges deaf students encountered.

‘This project has given me greater insight into the deaf student, I feel this would be beneficial to mainstream teachers and SLT to give them a greater awareness, so they can address the issues that these students face daily’ (TA7,FQ)

‘[I would like to] be more proactive in the classroom regarding the teaching staffs’ awareness. I would like to press harder...giving the teachers a greater awareness of deaf students, encourage teachers to take more responsibility for the learning of the students’ (TA6,FQ)

This assertion was supported by the two themes highly prevalent in the data

- expectations of communication in the classroom
- expectations of the impact of deafness on a student’s academic abilities

The TAs expressed concerns regarding teachers' awareness of the communication challenges deaf students experienced. For example, the need to remind some teachers a deaf student was present:

'unless they wear hearing aids, you can see teachers forget' (TA5,F1)

The TAs discussed experiences of teachers who appeared ignorant of the basic communication difficulties deaf students encountered, by refusing to use audiological equipment:

'No, I don't need to wear the radio aid because when I call her [the student]...she turns around and looks at me' (TA2,F3)

Teachers' lack of understanding of students' communication requirements was reinforced by the students, describing the challenges they encountered. One student describing an incident in which her radio aid was not working, the teacher passed the transmitter to her to fix the problem:

'When you pass it back he (the teacher) will go "Put that down and let me speak first"' (S2-TA6)

TAs also commented on pedagogical practices that indicated a teacher had not fully understood the communication needs of a deaf student:

'watching a video...it's visual, but...[deaf] students cannot hear over the background noise of projector...and subtitles would just be brilliant' (TA4,F2)

The TAs agreed the use of humour was indicative of teachers' limited awareness of the potential impact of their interactions on deaf students:

'when they [the deaf students] find out they've missed out on a joke the rest of the class has had a giggle at - and the teacher has laughed...that can result in bad

behaviour right away...some deaf children do get offended if somebody's laughing and they don't know what they're laughing at' (TA2,F3)

Implicit within these descriptions of the communication challenges is the presence of a socially expected etiquette of communication, particularly within a school environment. Such expectations may lead to misunderstandings as to the intent of a student, e.g. presuming a student raises his voice because he is angry, rather than because he is struggling to hear himself in a noisy environment. One teacher commented:

'He doesn't hear me and then he starts shouting so we need the TA to...calm him down and just repeat what I'm saying...If he's calm then I think he can hear me all the time, sometimes it's just in his head...he's loud and he keeps shouting over me...it's his behaviour as well not just his hearing' (T-TA1)

Interestingly the student concerned described how he found it irritating when teachers whispered:

'I can't understand when the teachers are whispering' (S-TA1)

Knowledge acquisition, as measured by success in public examinations, was described by the TAs as the primary purpose of education and indicated that the grades deaf students were expected to achieve were lower than those for the hearing students:

'my year 11 boy he's getting his Cs which is fantastic, profoundly deaf and he's on his Cs for most of his subjects, he's such a hard worker' (TA5,F1)

Indeed, the notion of deaf students' limited capacity to achieve in line with their hearing peers was not confined to the TAs. Similar expectations were reported as influencing strategic decisions made by SLTs in some schools, as for example with regards to modern foreign language policies:

'There's no point in them [the deaf students] being in a language lesson when they're not able to access English let alone a foreign language so they [the

teachers] take them [the deaf students] out of the modern foreign language lessons’
(TA4,F1)

Discussion: Shaping classroom practice through collaboration

Classrooms are complex dynamic environments that present many challenges to deaf learners. In order to understand how to improve outcomes it is important to understand the nature of the events, interactions and influences that occur and to consider why they have arisen. By investigating the classrooms, in which deaf children learn, from the perspective of the TA an active participant in the environment, new perspectives may emerge. This study has revealed a number of challenges that have been identified previously in respect of working relationships in the classroom (Webster et al., 2010), expectations (Antia et al., 2009) and communication challenges (Wheeler et al., 2004). A new perspective, from within the classroom, however provides a new understanding of why they might occur and how these factors may be contributing to the dynamic classroom situation.

TAs described members of the class community, including teachers and peers, as having incorrect expectations of the interaction capabilities of a deaf student. In particular, they commented on misunderstandings of the limitations of audiological technology (Archbold, 2010; Vincenti et al., 2014), identifying a misperception that it enabled the user to function as a hearing person (Swanwick and Marschark, 2010). Interestingly, the TAs also overestimated the benefits of the technology. Personal experiences of hearing loss and deafness will shape an individual’s attitude towards managing communication with a deaf person. Deafness is a low incidence disability (NatSIP, 2012) and consequently, many educational professionals will not have worked with a deaf child, and will have limited experience of childhood deafness and the technology the deaf children use. Teachers’ experiences of deafness, along with those of

other school staff, are likely to be a consequence of encounters with older members of society, rather than children. Until relatively recently deafness in childhood would have been discernible through the speech patterns of an individual, reflecting what they were able to hear, or through a child's use of sign language. New technologies, by providing full access to speech, have enabled many deaf individuals to develop speech patterns that do not alert a listener to their deafness (Wheeler et al., 2004) nor to the potential communication difficulties they may face. This may lead to incorrect expectations of a deaf student's linguistic capabilities and of their ability to communicate effectively within a classroom environment. None of the technology has the capacity to replace normal hearing and whilst some deaf students may be able to function very effectively in a one to one discussion in an acoustically favourable environment, supported by their hearing technologies (Nicholas and Geers, 2013), this is not transferrable to less favourable acoustic conditions. Deaf students' ability to follow a conversation rapidly becomes compromised by the introduction of more conversational partners and background noise, particularly other voices. This may be contributing to misunderstandings regarding academic potential and the presence of additional learning difficulties. The TAs described deaf students frequently being referred to as 'weak' and for whom moderate academic success was considered exceptional. Indeed the TAs referred to moderate academic success for deaf students as being particularly rewarding. Without a clear understanding of the impact of deafness on learning, it is unlikely that a teacher, or TA, would be able to accurately ascertain the ability of a deaf student. This may result in expectations of deaf students not being in line with those of their hearing peers (Antia et al., 2009). Teachers have been shown to adjust their delivery and lesson content in response to their early expectations of students (Blatchford et al., 1989) and that expectations impact on students' outcomes (Sorhagen, 2013; Timmermans et al., 2016). It is important therefore that teachers' expectations are based on a sound

knowledge and understanding of a student's abilities and resources and the potential implications for the deaf student's learning.

Within a classroom, an environment dedicated to interaction and to the transfer of information from one individual to a number of others, i.e. the teacher to the students, the attitude and the expectations of the teacher will shape the nature of the interaction. It would seem reasonable to suggest that for an effective working relationship to develop between a deaf student and a teacher, the teacher needs to interact directly with the student to develop an understanding of the students' language and communication skills. However, the TAs in this study frequently worked directly with the deaf student, taking responsibility for delivering lesson content (Lehane, 2016; Webster and Blatchford, 2013). They considered that their own presence affected direct interaction between the deaf students and teacher, limiting the opportunity for teaching staff to develop their understanding of the student. Whilst the introduction of TAs was to in part address teacher's workloads (STRB, 2001), it corresponded with a significant increase in the number of children with SEN entering mainstream education. Today, TAs work alongside students, particularly those identified as having SEN (Blatchford et al., 2011). The reason for the development of such working practices is unclear, however, it is likely the philosophical approach embedded within the SEN code of practice (DfE and DfH, 2014) and its resulting guidance, which in part supports a deficit notion of disability (Norwich, 2014), may be influential. The policy focuses on the needs of the individual and the barriers the individual needs to overcome to access mainstream education, which for a deaf student is assumed to be being able to hear or access what is being said (Webster et al., 2011).

The evidence from this study indicates it is unlikely that a specialist knowledge of the impact of deafness on learning is informing pedagogical classroom practices, to any significant degree. Consequently, expectations of deaf learners may be incorrect

and, despite technological developments and a growing understanding of the differences between deaf and hearing learners, deaf students continue to underachieve. It would seem important, therefore, to ensure that mainstream teachers are given access to the knowledge they need to shape their practices. The mainstream teacher, as a subject specialist, will have knowledge of concept development combined with effective pedagogical practices for delivering the subject curriculum. The ToD may or may not be a subject specialist, but will have expert knowledge about deafness, language development and learning. In addition both practitioners require a clear understanding of the individual student, to be able to determine appropriate expectations for that student. By ensuring that effective working relationships are established between all three practitioners, to facilitate knowledge exchange, then there is the potential to differentiate and shape pedagogical practices to meet the students' needs. That is: to enable the deaf student to engage with the curriculum; develop concepts with their hearing peers, and to improve the deaf student's learning experience and attainment.

It is proposed therefore, that an audit should be undertaken of the specialist knowledge that currently informs pedagogical practices for deaf students within mainstream settings, and of the extent of collaborative practices between practitioners. This should include senior school managers, as leadership is key to ensuring effective inclusion (Muijs et al., 2010). Consideration then needs to be given to facilitating effective collaborative practices that can inform pedagogy. This will require a team approach in which members value and recognise the contributions each has to bring and central to which is the development of appropriate expectations of deaf students through a better understanding of the impact of deafness on learning.

Conclusion

This study revealed there is frequently a lack of knowledge and understanding among mainstream teachers of the impact of deafness on learning. This is, in part, a consequence of current working practices that do not facilitate effective knowledge exchange between mainstream and specialist staff. It is likely this lack of understanding contributes to inaccurate expectations of deaf learners, and to the engagement of pedagogical practices that create additional challenges for them. Such factors may well be contributing to deaf students' continued under achievement academically when compared with their hearing peers. It seems essential, therefore, to develop and evaluate new models of engagement for ToDs and mainstream teachers, which will facilitate more efficacious and informed collaborative working practices, to improve outcomes for deaf students.

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