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Programme **Early Years and Deafness**	**Module Leader** **Imran Mulla**	
Module title: Research Methods and Dissertation		
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Date 29 April 2020

Will an Adult-Led Intervention Programme Increase the Attention and Listening Skills of Children who are Deaf?

A study submitted in partial fulfilment of the requirements for the degree of Master of Science/Master of Arts of the University of Hertfordshire.

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Contents

Word count – 13189 excluding abstract, acknowledgements, definitions, footnotes, graphs, tables and references:

List of Tables

Chapter 3 – Methodology

Chapter 4 - Results

List of Figures

Acronyms

British Sign Language	BSL
Department for Education	DfE
Department for Education and Skills	DfES
Early Learning Goals	ELG
Early Years Foundation Stage	EYFS
Early Years	EY
National Health Service	NHS
New-born Hearing Screening Programme	NHSP
Public Health England	PHE
Teacher of the Deaf	ToD

Glossary

Free flow	Opportunity where children can explore their environment and make their own choice of activities
Interlocutor	Maintaining attention to the person speaking or an object associated with the conversation.
Joint Attention	Face to face interactions or focusing on the same object as an adult.
Meaningful	Actions or initiations that had a positive outcome such as using eye-gaze to follow a routine.
Pedagogy	Method and practice of teaching, considering the interactions that take place during learning.
Proprioception	Awareness of position and movement of the body.
Total Communication	using a combination of actions, gestures, gaze and signing rather than only verbal responses.

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Susan Ingram – May 2020

Abstract

Children who are deaf require parents, carers and educators to help them build their attention and listening skills in their Early Years (EY). They need to use their eyes to acquire the information on the social norms around them and to learn ways of initiating conversations with adults and peers. All too often in busy environments there can be more focus on communication through speech rather than building the foundation skills that can promote the development of language.

This action research involves a multiple case study (Thomas, 2017:156) involving two children who are deaf and were moving from a preschool/nursery setting into a maintained school setting, both at the beginning of accessing their final year of the Early Years Foundation Stage curriculum (EYFS: Department for Education (DfE), 2017). It utilises a mixed methodology approach, collecting both quantitative and qualitative data through structured and non-structured observations. This will aid the exploration as to whether a carefully planned creative adult-led intervention based around the principles of a circle-time session, delivered by educators, will enable the children to extend their attention and listening skills.

Data was analysed to consider the progress made over a period of seven sessions implemented over the same number of weeks, building on the children's already acquired skills from their previous settings. Unstructured observations were completed prior to the intervention programme starting and background information was gathered from the Teacher of the Deaf (ToD), to gain a baseline assessment of the children's development. Further systematic structured observations were completed during delivery of the schedule of activities to assess any progress made during the sessions.

The aim of the plan was to highlight to educators the significance of providing regular opportunities within EY settings, and how planning these sessions incorporating focused activities can help the children make the best use of their acquired joint attention abilities, as well as increasing communication skills through spontaneous interactions with peers and adults. It was presumed that this intervention when applied would lead to an increase in the use of evidence-based strategies to increase attention and listening skills in children who are deaf.

The results of the study did not indicate significant results due to being small-scale and restricted to seven weeks, but the structured observations did highlight the importance of planning the session, using repetitive activities and visuals to support the children's understanding of routines. This was shown by an increase of meaningful interactions between the participants and researcher. Therefore, this research can be considered as adding a positive approach to the limited existing literature around supporting children who are deaf in EY settings.

1. Introduction

1.1 Background

Building a child's attention and listening is a fundamental skill needed to develop spoken language (Ormel et al., 2010:350) and is a prime area of learning in the Early Years Foundation Stage curriculum (EYFS: Department for Education (DfE), 2017). All children learn by doing and being supported as active participants in what they are attempting to achieve. There is an increased emphasis on how children with Special Educational Needs and Disabilities (SEND) are supported in Early Years (EY) settings[1] to attain in line with their peers.

By 2006, all babies were offered screening for hearing loss through the New-born Hearing Screening Programme (NHSP: Harrop-Griffiths, 2016), also referred to as Early Hearing Detection and Intervention (EHDI) in America. The programme has shown positive outcomes in diagnosing children who are deaf within four weeks of birth and identified the early involvement from professionals that allows families to access the support required (Joint Committee on Infant Hearing, 2007). However, it is the early interventions – strategies to support learning - that will maximise opportunities for children who are deaf to develop their attention and listening skills.

1.2 Rationale

As the government has continued to implement further funding streams to assist parents with childcare costs, this means that for some children who are deaf[2] can be spending up to 30 hours per week, 38 weeks per year attending a busy EY setting. It could be stated that some settings provide excessive auditory and visual input at a time when a child's brain is less able to focus on an activity, whilst still processing auditory information from their environment (Patel & Feldman, 2011:304).Yet, a child's language environment has been shown to have a significant influence on cognitive systems that support spoken language (Dye & Hauser, 2013:94).

[1] Throughout this research the term 'setting' has been used to denote the provision of nursery and preschool education.

[2] This case study involves two children who are deaf and will be referred to using the terms 'children who are deaf' and 'children' throughout this research. The reason for this is to put a greater emphasis on the child rather than their levels of hearing loss. The term 'deaf children will only be used when quoting directly from literature.

Although, this research is based on an adult-led intervention programme[3] delivered in a circle-time format. It aims to build on effective practices that are already happening in settings, and to promote further consideration by educators on how children who are deaf learn within an EY setting, with a focus on the role attention and listening plays in their development of language. Therefore, all activities and resources used should be easily accessible within everyday practice, thus, providing these children with further opportunities to acquire language.

In addition, the researcher will consider three key themes highlighted below when delivering and analysing the results. The reason for this is to take account of the uniqueness of each child and how different experiences can impact on or promote their learning and development.

- How attention skills link into further areas of development such as social and communication.
- How children's previous experiences impact on their ability to attend an activity, shift-attention and self-regulate their own behaviour[4].
- How a busy environment can impact on children's ability to listen.

1.3 Outline of Chapters

Chapter 2 will begin by reviewing literature relating to early identification of deafness and early intervention followed by considering the development of listening and attention skills in children who are deaf. Finally, reflecting on effective EY provision before considering the implementation of the different sections of the plan.

Chapter 3 will explain the action research approach and methods used to collect data before and during implementation of the programme. Chapter 4 outlines the results from the analysis of the information gathered and will explore common themes plus the benefits and barriers to implementing the activities. Chapter 5 will evaluate the results linking them into literature to identify the impact and whether the children who are deaf achieved the targets set.

[3] The adult-led intervention programme will consist of a schedule of various activities planned in advance of delivery.

[4] Throughout this research the term 'behaviour' has been used to denote any movements or actions made by the children that could be linked to attention and listening.

The conclusion (chapter 6) pulls together the research and concludes whether the use of such strategies implemented in EY settings will extend attention and listening skills in children who are deaf.

2. Literature Review

2.1 Introduction

A selection of different databases were used to collect evidence during this research to determine how children who are deaf develop their attention and listening skills. Information was sorted through using keywords such as ‘attention’ and ‘deaf children’ which led to several journal articles being identified.

To extend my search the Boolean operators were implemented, in this instance ‘and’ and ‘or’ which helped widen the search to include primary peer-reviewed articles that gave a greater focus to all aspects of the study (Grewal et al., 2016:635). In addition, current government legislation was considered around children with SEND and the EYFS curriculum (DfE, 2017) and primary sources were researched to identify journals focusing on ‘circle time’ and ‘intervention programmes’.

This review begins by examining early identification of hearing loss in young children, enabling a clearer understanding of how early development impacts on the progress of preschool children. It will reference past and present literature on the development of joint and visual attention plus the importance of developing attention and listening skills prior to considering effective EY provision.

Finally, although resources were limited, there will be a reflection on the benefits and effectiveness of small group circle times, with the key element being to consider the literature, examining any methods previously implemented, including any barriers to consider around delivery.

2.2 Early Identification of Deafness and Early Intervention.

Early identification is relevant to this research as there are an increased number of children who are deaf attending EY settings. We as professional educators have a duty, guided by legislation, to make sure we work with parents to ensure that all children regardless of disability make progress (Department for Education (DfE), 2015). According to the EYFS (DfE, 2017) it is the parents that are the child’s first and most important educator, therefore they can provide the maximum information for us as secondary educators to support their child’s learning and development in an educational setting.

Furthermore, with the implementation of the NHSP (2006: Harrop-Griffiths, 2016) identification of children with a hearing loss is now established across many countries

such as United States of America, United Kingdom and Europe (Fickensher et al., 2015). As a result, further joint working between Public Health England (PHE) and the National Health Service has shown that the NHSP has not only 'reduced the age of diagnosis to an average of 60 days' but that amplification can be fitted by 90 days (PHE: NHSP Standards 2016 to 2017).

This early fitting of amplification has given children who are deaf a better chance of developing speech, language and communication skills through increasing auditory input and thus reducing the chances of 'structural and functional reorganisation' of the brain at a cortal level (Patel & Feldman, 2011:304). However, recent data highlights several factors such as residence locations and socioeconomic factors that can lead to delayed early identification, possibly leading to lifelong language complications for the child (Bush et al., 2017:359).

Nevertheless, visual experiences underlie learning and language development in the first 6 months of life, an important time when children become inquisitive about the world around them. This is an opportune time for parents with the support of early intervention professionals to stimulate their child's language growth, hopefully minimising any delays in development (Sass–Lehrer, 2014).

2.3 Listening Skills

Development of speech and phonological awareness which can facilitate reading relies on a child's ability to listen (Ormel et al., 2010:350; Shaywitz et al., 2008:458). As learning is often based on a rich acoustic environment (Sininger et al., 2010:169), children who are deaf are more likely to be disadvantaged due to missing out on early auditory stimulus. According to Clark (2007) children who are deaf develop these skills at a slower rate than their counterparts, as highlighted above, they must learn to listen and filter information, making use of any residual hearing or amplification such as hearing aids or cochlear implants.

Validation of research focusing on how children who are deaf acquire good listening skills is limited, and there has been a greater focus on the development of joint and visual attention linking into promoting increased auditory abilities. However, there are several evidence-based programmes such as Auditory Verbal (Fickenscher et al., 2015), for children with a severe to profound hearing loss which begins with an emphasis on auditory closure, a listening and speaking strategy where the adults

start the song or sentence and the child is encouraged to fill in a verbal response. This practice enables educators to start to assess the child's expressive language competences (Fickenscher et al., 2015).

Rhoades (2013) and Moog and Stein (2008:135) referred to this practice as auditory oral education, and both highlight that auditory practices facilitate the use of developing effective listening abilities, with the aim of enabling children who are deaf to communicate using speech. Yet, they both agreed that for the practice to be successful these children will only be able to build their listening skills if supported by good management of amplification, quiet environments and partnership working with parents.

Simultaneously, many short term studies indicated that there is growing evidence that auditory verbal practices carried out directly in the home or clinic have shown effective intervention, meaning the child had shown reasonable progress in acquiring spoken language over the period of the research (Eriks-Brophy et al., 2006:60; Dornan et al., 2010:73). This may be due in part to the extent on which the child listens to speech rather than just hears it (Houston & Bergeson., 2014:2). Leigh (2008, cited in Marschark, & Hauser, 2009: 24-51) instead, acknowledged that there is further evidence that early intervention at home has increased spoken language, yet for children who are deaf attending EY settings further research is required to show how auditory verbal style practices are implemented.

2.4 Attention Skills

For the last 25 years joint and visual attention have been a popular research area within experimental psychology (Findlay & Gilchrist, 2012:900). According to studies joint attention can be described as having a greater focus on the coordination of orienting between two people towards an object (Deluzio & Girolametto, 2006:214; Shaw et al., 2017:268). Whereas, visual attention is perceived as a set of cognitive processes that select and filter information from visual scenes (McMains & Kastner, 2011:591). These two areas tend to become intertwined when considering the early interactions of children who are deaf around describing attention skills.

2.4.1 Joint and Visual Attention

Joint attention has been identified as developing in the first two years of all children's lives, with skills starting around the age of six months. It is around this age when

children start to foster attachments and bonding between themselves and their parents which could lead to increased interaction between the parent and child (Lieberman et al., 2014:2). Further studies show the age of eighteen months, as a crucial time when children start to develop language and when any delay in progress starts to appear in children who are deaf (Prezbindowski et al., 1998:378; Spencer, 2000:293).

Nevertheless, peer-reviewed studies by Morales et al. (2005:261) and Vaughan van Hecke et al. (2012:7) had a greater focus on these children linking joint attention and emotional regulation. For example, this study highlighted that in EY settings two-year olds spent more time using joint attention during a free flow session compared to an adult-led structured session; it was during this period that children were better able to use self-regulation strategies.

In addition, it identified that children who are deaf were more likely to actively shift their attention to other activities available to them plus initiating play with peers. However, Duncan (2001) agreed with this theory, also stressing that a child's ability to gain joint attention skills did depend on the quality of activities on offer. This could suggest that there are more communicative interactions during child-directed activities such as role play compared to adult-directed activities such as messy play.

As stated above, birth to two years of age is a critical time for language development and is often a time when children who are deaf are deprived of auditory stimulation (Humphries et al., 2012:3). Therefore, for communication to be successful these children need to observe both a visual clue and a visual sign shifting their eye-gaze from one to the other to gain information (Harris & Chasin, 2005:4).

Although, visual attention skills are initially fostered at home between parent and child (where their surroundings can be quieter) these skills most likely need to be transferred into an EY setting where the demands for visual attention are increased due to distractions such as other children moving around. In these busy environments whilst children explore the activities around them, it is important to establish alternation of gaze between object and educator in order for interaction to be successful (Lieberman et al., 2012:12).

A common theme through most of the research was firstly, how a child developed joint and visual attention skills, varying between children who are deaf born to deaf parents, compared with those born to hearing parents (Giromanalto & Weitzman, 2002:280). Secondly, that parents as the primary caregiver can influence emotion regulation through the responsiveness of their interactive behaviours with their child (Morales et al., 2005:259). These could possibly be because deaf parents invest more effort in ensuring they gain their child's attention before any interaction takes place and have a better understanding of the importance of visual gestures.

Whereas, hearing parents could be less likely to spend time making sure they have gained their child's attention before offering any interaction with them. Yet, there appears to be a lack of research carried out as to whether educators in an EY environment would increase their use of strategies to gain the attention of a child who was deaf before interacting or delivering an instruction to a group of children (Lederberg & Everhart, 2000:305).

From research visual attention appears far more complex than joint attention due to relying on the children who are deaf to be cognitively aware that they need to remember to wait for another person's attention before any interactions can take place; definitely a complex skill at an early age (Moll & Tomasello., 2006:610). In fact, an American study by Crume (2013) highlighted that it was only by the age of four that these children were able to self-regulate attention to a visual language, but this can only happen through careful orchestration of the child's visual gaze and engagement on the part of the educator. This could suggest that the success of an intervention depends on the child's ability to self-regulate and to filter relevant information from the environment.

2.5 Effective Early Years Provision

The following part of this literature review will move from the theoretical literature to look at the more practical aspects of current EY practice, including legislation and effective EY provision.

2.5.1 Quality Preschool Provision

Attending an EY setting for many children who are deaf will probably be the first encounter they have of a social setting outside the home; a place where they are left to learn new routines (Knight, 1996). For this reason, it is important that these

children receive a good quality learning experience including a broad and balanced curriculum. Recently there has been more prominence placed on a 'person-centred approach' to learning using a curriculum that guides all children's learning and development through scaffolding and monitoring their interactions, but is also flexible enough to incorporate the child's interests (Johnson et al*.,* 2005).

Much of the emphasis throughout literature tends to be on 'quality', and statutory frameworks and legislation often describe 'high quality provision' as a differentiated and personalised curriculum that will meet the needs of the majority of children (SEND: Code of Practice, DfE, 2015). Section 21 of the Children and Families Act (2014) highlights that for some children who are deaf, there is a requirement for additional planning and delivery of specialised activities to help them achieve in line with their peers. These views are reinforced by Government in the EYFS (DfE, 2017), highlighting that children should be able to acquire a range of skills including attention and listening and transfer them to various situations.

The word 'quality' is often used in early childhood services, but research looks deeper into this concept and has been much debated over the past decades, leading to the Understanding Quality Project (Cottle, 2013). Tanner et al. (2006:8) describes the definition of quality as something that can be measured and evaluated, such as inspection gradings.

Whereas, Osgood (2006:7) considered it to be more about social and emotional relationships, that lead to quality provision. The reason for the lack of definition could be due to the range of stakeholders involved in the early year's arena such as children, parents, politicians and educators, thus making it difficult to define (Sylvia et al., 2004). In current practice, this could be seen as a combination of gradings, how well the EYFS (DfE, 2017) curriculum is implemented by educators and the progress achieved by the children.

A lack of definition around quality provision means there remains a lack of clarity around what it looks like. However, a review of documentation by Teager (Early Intervention Foundations (EIF): 2018) and Bonetti (Education Policy Institute (EPI): 2018) looked at the key features of 'quality' in EY settings. From these reports there appeared to be two key factors around implementing programmes, leading to child-effective learning.

Firstly, lower children to staff ratios lead to better children's outcomes. Secondly, strategies delivered using a set plan of activities for the children did prove effective. It was a lack of detailed description of the individual sections that made it unclear which elements of the plan showed success and thus led to the improvement of outcomes for children who are deaf. This leaves an opportunity for further research.

2.6 The Intervention Programme

As this research focuses on a planned adult-led intervention programme, this section aims to look at the importance of circle times in an EY settings. There will be an emphasis around the benefits of promoting attention and listening skills, as well as, identifying areas for consideration.

2.6.1 Circle Time: An Adult-Led Focus Group

Glazzard (2016) carried out research into whether circle time is an effective strategy in educational settings. Over the last 20 years there has been an increase in publications offering advice and guidance on delivering a circle time effectively. Yet, there is still limited efficiency-based research to prove the effectiveness of using this strategy (Lown, 2002). However, literature does highlight some benefits, such as building children's social and emotional aspects of development helping them to maintain positive relationships with peers (Canney & Byrne, 2006:20).

Therefore, as discussed by Turan (2010) circle time can incorporate several activities offering a holistic approach to learning. With more children starting to attend EY settings at a younger age due to government initiatives such as additional funding to support childcare costs, it is questionable whether this strategy benefits those children under the age of 3 years, as there is very little research within this age group. Although, Mosley (2018) does suggest if running a group with younger aged children, it is beneficial to also have some slightly older children as role models.

Nevertheless, it is important for educators to consider the focus and delivery of the session, as well as the reasons for the plan (Lindon, 2001). Girolametto and Weitzman (2002:273) highlighted that educators need to be informed about the potential effectiveness of strategies used during circle time, especially those around promoting visual attention in children who are deaf.

Two points to further consider were firstly, a study by Spencer (2000) which focused more around the triadic pattern of visual attention that children who are deaf use, for

example the need to switch attention between communication partner, an object and back again to receive visual communication. As a result, additional wait time could be required during the session to allow time for the child to process the auditory information and offer a response to their communication partner (Cole & Flexer, 2011:240).

Secondly, one must reflect on where the children are sitting whilst in the circle. For example, the results of an Australasian study by MacFarland and Dealtry (2017:109) that included 69 three to five years olds in an EY settings gained the perspectives of both children and adults. This study identified that to ensure children can hear optimally in group situations they need to be in a position where they can see as well as hear, as the hardest time to listen to speech is when speakers' faces are not visible to a child.

Thus, to gain better outcomes in circle time sessions it will be particularly important to take into consideration that children who are deaf must work harder to listen and attend. This is due to having to shift eye-gaze from object, practitioner to gestures, as well as listen for speech from peers and adults. (National Deaf Children's Society: NDCS: 2015).

2.6.2 Visual Clues Enhancing a Visual language

Visual languages such as British Sign Language (BSL) provide linguistic information visually and require a certain amount of attention and shifting of eye-gaze for children who are deaf. Indeed, Humphries et al. (2012) supports early exposure to a visual language stating that visual learning alongside a visual language can naturally evolve throughout the world, in the same way that a cup looks very similar wherever you go.

This may be because access to a visual language changes the visual processing which in turn increases joint attention competences. To promote these processing skills, adults can link the language being used through pointing to direct the attention of a child who is deaf towards the person speaking, or to an object (Graham, 2015). With continued prompting and practice the child should eventually be able to maintain their focus from one place to another. By having the ability to effectively use this turn taking mechanism between communication partners, it may enable children to socially interact with peers and express feelings and ideas as this practice develops (Paparella & Kasari, 2004:269).

2.6.3 The Benefit of Including Music and Songs

There have been several studies completed around the benefits of music and singing for young children (Council on Communications and Media, 2009, Moreno & Bidleman, 2013:86). More recently, Graham et al. (2015) completed a joint study by the University College London and the Institute of Education Ear Institute in collaboration with the multi-arts charity Creative Futures. It reported the importance of including 'repetitive singing activities for both deaf and hearing children' in EY programmes, showing positive auditory perceptions in an awareness of ranges of sound as well as pitches of voice for all the children, a skill that is associated with developing reading skills.

According to this research younger children are more likely to have significantly fewer words and restricted attention skills (Moreno & Bidelman, 2013:88). This adds to the growing body of previous research that suggests children who have access to music and songs gradually increase their range and pitch-matching accuracy, enhance their listening brain and develop higher cognitive and linguistic abilities (Hedden, 2012; Rocca, 2015).

2.7 Literature Review Conclusion

On reflection, this literature review has highlighted the vast amount of information available around developing attention skills. However, the benefits of effective EY settings and circle time was limited with a barrier being a lack of effective-based strategies around implementing an intervention programme for developing attention and listening skills.

With a greater focus on supporting the emotional development in children, further reflection on the question being asked, led to the researcher reassessing the plan of activities. The plan was changed to incorporate opportunities for social and emotional development, and to introduce turn-taking games that the children who are deaf could take an active part in.

3. Methodology

3.1 Introduction

This chapter sets out the methods used to gather and analyse data to determine whether a small focus group adult-led intervention programme will extend the attention and listening skills of children who are deaf. The study uses a mixed method approach exploring the children's current levels of skills through gathering background information and unstructured non-participant observations, which provided qualitative data prior to planning the schedule to obtain a base-level assessment. Further structured participant observations were completed using a set criterion, focusing directly on attention and listening skills, where quantitative data was obtained during the implementation of the intended activities.

A timeline was used in this case study to explore a small number of well-chosen cases in depth (De, et al., 2013:393). However, consideration will be given when evidence is evaluated against each other to avoid subjectivity, as there could be a bias toward verification; that is, a tendency to confirm the researcher's preconceived notions (Flyvbjerg, 2006).Therefore, care needs to be taken that personal biases do not play a part when analysing the data for the results (Noffke & Somekh, 2009)

3.1.1 Design Frame

Two design methods were considered for this research, evaluation and action research. Both can be applied to the implementation of a focused adult-led intervention. However, the main differences are that the method of evaluation is an approach that lends itself to larger groups of participants taking part in the study. In addition, there is no assumption that what is being studied feeds back in a systematic way to the schedule of activities, leaving the evaluation to be conducted at the end of the collection of data before deciding whether to continue or withdraw the programme (Thomas, 2017:138).

On the other hand, action research provides a continued cycle of reflection that can inform current practice through a broader and deeper understanding. It can determine whether changing these practices will make a difference to the outcomes of a smaller group of children who are deaf (Hohmann & Mamas, 2015:4). It is a 'generative transformational process' where data and interpretation from earlier collection cycles can be tested and evaluated in later ones. This will help to confirm

validity and identify any potential barriers, so in this instance, it was the preferred approach for this study (MacNaughton & Hughes, 2009:127).

The rationale for using an action research design frame over the evaluation method was that firstly, it is increasingly used to aid professional development and improve learning outcomes within education, health and social care sector (Denscombe, 2004:122). Secondly, it involves a cycle of evaluating your own practice (or in this case an area of child development within an educational environment), to examine a situation for the purpose of planning, implementing and evaluating change (Thomas, 2017:154) giving further reliability to the outcomes of the intervention programme.

3.1.2 Research Approach

According to Thomas (2017:156), action research can be divided into several different forms, for example it may involve a single or multiple case study. Having a multiple case study involves more than one person or place in its subject, enabling the researcher to cross-reference data. For this research, a greater understanding around similarities and differences of the children taking part can occur through exploring older and current evidence between the cases, leading to results that provided more validity (Gustafsson, 2012) and offset any challenges that may occur.

Multiple case studies are often broken down into more specific subdivisions, for example, a parallel study (participants are observed at the same time but considered as individuals) or comparative study (participants are compared, and differences identified) (Robert-Holmes, 2011:82). Literature is limited on the ideal number of participants, although the higher the number the more time consuming than a single case study due to the collection of data.

In addition, Morse (2015) believes that the more useable data that is collected from each partaker, then the fewer the number of participants required, so two children were deemed suitable in this situation. If cases are chosen carefully it will provide an opportunity to explore the similarities and differences, and it will consider the characteristic and environmental factors. In addition, it will offer a wider exploration leading to more positive reliability to the outcomes of this research (Eisenhardt & Graebner, 2007:29). Even so, with all studies it is

important that the researcher can purvey to the reader the context in which the study was conducted (Gustafsson, 2012) so that the outcomes can be fully understood and analysed by the reader.

Both subdivisions require planning of time to ensure consistency of recording information, as having to observe more than one person at the same time could mean that gathering useful data could take longer compared to a single case (Thomas, 2017:160). Yet, for this research the numbers for this study were partly decided by the number of places allocated for children who are deaf per year group in the school by the Local Authority.

3.2 Participants

The participants consisted of two children who were deaf and were just about to transition from an EY setting into the reception class. They were both entering the final phase of accessing the EYFS (DfE, 2017) curriculum, in a mainstream primary school, where they will be attending full-time, (table 3.1). A purposive sampling method was used to decide on participants for this research due to the focus being on children who were deaf, therefore, enabling the research question to be answered.

Table 3.1 Children's Characteristics

Participant	C1	C2
School Cohort Year	2014/2015	2014/2015
Hearing Loss	Moderate Bilateral sensorineural	Profound Bilateral sensorineural
Identification	NHSP	NHSP
Current Amplification	Hearing Aids (HA)	Cochlear Implant (CI)
Age at fitting	21 months (HA)	27months (HA) 33 months (CI)
Type of EY Setting	Maintained EY Setting (nursery run by a primary school)	Private EY Setting (Day Nursery)
Hours attended weekly	15 (Term time only)	30 (Full time- attendance not consistent)
Current Levels of Learning –attention and listening (using the Early Learning Goals (ELG: Department for Education (DfE), 2012)	22-36 months	22-36 months

Main Language spoken at home	English	Polish

The parents of three children who are deaf were approached at the school in conjunction with the Teacher of the Deaf (ToD) to explain the reason for the intervention programme. All the children considered to be suitable candidates for this study had already been notified to our service via our health professionals. Two families agreed for their children to be part of the study. For the third family their child did not match the criteria set out below due to being too young, see table 3.2.

Table 3.2 Criteria for Inclusion

1	Diagnosed with a hearing loss and has met the criteria for allocation to a ToD caseload.
2	Born between September and the following August so in the same EY/school cohort
3	To have attended an EY setting prior to transitioning to maintained school

3.2.1 Ethical Consideration

Prior to any data being collected, permission was formally gained in writing from those who wished to participate in the study, and an Information Sheet provided (Appendix 1). The potential benefits of the intervention programme for children who are deaf were discussed with the ToD, the aim being that in the future it could be used within other EY settings.

To assure that all data was anonymised during the collection of information for this final research (Davis, 2012), gender has not been included and participants will be referred to individually as C1 and C2 to maintain anonymity. In addition, Ethical approval for the research was obtained by the Ethical Research Committee, University of Hertfordshire (Appendix 1).

3.3 Data Collection

Data collection methods were used to evaluate whether a focused adult-led intervention would extend the attention and listening skills of children who are deaf. In addition to the methods set out below, further background evidence was collected

from the ToD already working with the children and stored on the Local Authority database.

3.3.1 Observations

Both structured and unstructured observations were deemed an appropriate method of data collection for this study rather than relying solely on current pre-recorded assessments. Observations could enhance the evidence already gathered and support the mixed methods approach. Furthermore, they enabled the researcher to identify non-verbal behaviours, interaction between adults and peers and how the children responded to following routines, all of which would inform how the programme was set up (Mortimer, 2007:18).

This method is a vital way of collecting evidence in educational research, yet this does not come without its risks. Firstly, it is essential to determine what role the researcher will play to ensure facilitation of the study (Connelly & Clandinin, 1990:10). Secondly, once children know they are being observed they could change the way they behave, for example attention seeking behaviour, often known as the Hawthorne effect (Thomas, 2017:148) which could compromise the reliability.

However, all these elements of data were interlinked to produce a fuller account of the research problem (Zhang & Creswell, 2013:54), and provided information that could be cross-referenced to show validity and assess how effective this strategy had been.

3.3.1.1 Unstructured Observations

A proforma was used to gather evidence through written non-participant observations based on the Lancaster and Broadbent (2010) schedules, to systematically answer a series of specific questions (table 3.3). They were completed individually for each child prior to the structured observations (Appendix 2). Each initial observation was carried out by the researcher, during a free-flow session in the classroom, and lasted between 20 to 30 minutes giving time at the end to note any important kinds of behaviour linked to attention and listening skills.

***Table 3.3* Specific questions for unstructured observations**

1	How did the children use their attention skills?
2	Did the children initiate interactions with adults and peers?
3	Could the children follow instructions?
4	What activities did the children like to play with?

3.3.1.2 Structured Observations

During the delivery of the programme, structured observations were carried out by a member of school staff, following a set criterion – table 3.4, 3.5, 3.6 – in line with Flanders Interaction analysis (2004, cited in Seale, 2004:111-116). This would enable there to be a focus on children who are deaf, linking joint attention and emotional regulation (Morales et al., 2005:261). Behaviours that were meaningful and clearly met the criteria were recorded on a tally chart as they occurred (Appendix 3), providing evidence to track progress of the children, to be analysed against the toolkits highlighted below. By using quantitative data in this research, it will enable progress of attention and listening skills of the children to be measurable and support and enhance the information collected, allowing it to be reliable (MacNaughton & Patrick, 2009, p.158).

The main benefit of using this Flanders interaction analysis method is that it offered a systematic schedule of behaviours, rather than looking at the cognitive abilities of the children. Therefore, this can be measured in quantifiable elements to support the assessment (Thomas, 2017:227), justifying the use of the action research method.

However, the drawback is that these observations can be very specific to the participants of the study leading to a challenge in justifying the outcomes especially as the aim is to transfer this programme to other EY settings (Denscombe, 2014).

Table 3.4 Criteria for Attention Behaviours

Shift Attention – two-ways	Ability to shift attention from adult to object
Shift Attention – three-ways	Ability to shift attention from adult to object to adult

Attentive	Follow routine and clues such as pointing and were the children watching the adult when talking
Responsive	Could the children follow the instruction, and did they ask questions?

Table 3.5 Criteria for Distraction and Self-regulation Behaviours

Distraction	Did the children keep looking at something else around them?
Self-Regulation	Did the children fidget and were they able to re-focus back to the activity?

Table 3.6 Criteria for Listening Behaviours

Follow a two-keyword instruction	Responding to an instruction that has 2 keywords – supported by visuals e.g. Where is the car? = where and car are the keywords
Follow a three-keyword instruction	Responding to an instruction that has 3 keywords – supported by visuals e.g. Where is the blue car? = where/blue/car are the keywords
Plays with sounds	Do the children join in making different vocal sounds
Joins in songs and rhymes	Do the children do the actions, vocalise and follow the song
Can distinguish sounds	Do the children know which object made which sound
Initiates Conversation	Do the children carry on or start/follow a conversation

3.4 Data Analysis

Data from the unstructured observations was analysed to group interactions and behaviours. During these observations one of the barriers to gaining relevant information was that there can be an immense number of interactions going on all the time. For example, children talking, noise from the moving of toys can all lead to various distractions and can limit the auditory input for children who are deaf. Here the risk would be that vital occurrences could be missed that could validate the findings (Robert-Holmes, 2011:115). Previous research does highlight free-play being an effective medium for fostering appropriate turn-taking and sharing interactions (Barton & Wolery, 2008:115) a good baseline to scaffold future learning.

This then involved linking the observations into the following non-statutory tools (table 3.7), as they were child-centred, and play-based so more likely to gain the best outcomes (Mortimer, 2007, p.12).

3.5 Assessment Toolkits

The following three assessment toolkits were used as part of this research to track the progress of the children who are deaf. These were chosen for the reasons identified in table 3.7.

Table 3.7 Criteria for using the chosen Assessment Toolkits

	Assessment	**Reasons for suitability**
1	Development Matters in the EYFS (DfE, 2012)	• Criteria tracks children's progress from 0-5 years. • Split into three prime areas which includes attention and listening. • EY curriculum used across all EY settings. • Already being used to track the children's progress.
2	'Early Steps' (B-Squared, 2016)	• Criteria tracks children's progress from 0-5 years. • Breaks down the ELG (DfE, 2012) in smaller steps • Can confirm reliability of data gathered • Goals feed into the ELG (DfE, 2012)
3	Early Support: Monitoring Protocol for Deaf Babies and Children (DfES, 2006)	• Criteria tracks children who are deaf up to 3 years. • Steps to progress have a focus on speech sounds • Designed to for parents with support from ToD • Goals feed into the ELG (DfE, 2012)

The targets for attention and listening from each assessment tools were cross-referenced to produce five objectives to enable progress to be tracked easily, and on which to clearly measure outcomes (table 3.8). In addition, using these three documents provided triangulation, identifying strengths and weaknesses across the key areas of attention and listening. This offered a more detailed picture of the children's current achievements and a starting point from which to track progress (Robson, 2007).

Table 3.8 Objectives to Track Progress

Objective 1	Children will start to engage in action rhymes/songs using communication methods e.g. voice/sign/gesture
Objective 2	Children can focus their attention and follow a routine – pre-empting what will happen next
Objective 3	Children can recognise and respond to different sounds
Objective 4	Children can respond to two/three-keyword instructions
Objective 5	Children will be able to shift attention between peers and objects

The Early Support: Monitoring Protocol for Deaf Babies and Children (DfES, 2006) was deemed suitable, due to both children's current baseline assessment being in a lower age group (table 3.1). In addition, this document provided a greater focus around the production of the sounds of speech such as consonant and vowels, rather than the other two toolkits which tended to focus on statements of what the children can do, such as naming an object. This was important as children need to master the skills of attention and listening to be able to reproduce the sounds of speech (Morales et al., 2005).

Another assessment tool considered was the Integrated Scales of Development (Cochlear, 2010). As the participants of the study were fitted with different kinds of amplification this document was deemed unsuitable as it is aimed solely at children fitted with cochlear implants. The benefit of using the ELG (DfE, 2012) as highlighted above is that they are already embedded as common practice in educational settings as part of the EY national curriculum.

3.6 Intervention Programme

The intervention programme was designed by the researcher using activities planned from information gathered from the observations, offering opportunities for the children who are deaf to join in (table 3.9). Future sessions would be adapted through regular analysis of the structured observations (Barton et al., 2011:5) to ensure the children were always fully involved in being able to take part, by including activities that encompassed opportunities for active participation such as turn-taking.

Furthermore, the children were invited to take part in the session as all children learn by doing, and being supported as active participants in what they are attempting to learn (Turan, 2010), giving them a chance to express their views (MacNaughton & Hughes, 2009, p.93). Yet by aiming to keep the sessions time-limited to 15-20 minutes, this would allow the children who are deaf to develop listening and attention skills, and take account that they often have to work harder than their peers to maintain concentration for any length of time (NDCS, 2015).

Table 3.9 Example plan of activities – see full plan Appendix 4

Session 1	**Beginning**	**Middle**		**End**
Flashing Balls – this will be the **object of reference**. Children invited to join the group.	Hello song - Visuals/Signing and syllable clapping/body tapping to names - **proprioception**	**What's in the bucket?** Selection of objects such as gloop, duck, flower, pot, cars	**Incy Wincy/Zoom, Zoom, Zoom** Visuals/objects for songs – **auditory visual presentation**	Pass the bell around to and say goodbye to everyone.

3.6.1 Delivery of the Programme

The programme was set up in a circle time layout, appendix 5, which is often recommended in EY environments as a period to focus on communication and language development for children, through targeted activities (DfE, 2017). However, as the majority of children who are deaf rely on some degree of visual support, several forms of visual clues (see Appendix 5) were used throughout the delivery. For example, visual routines, gestures and BSL were used so all linguistic information is provided visually to give the children the best opportunity of successful interactions to take place (Leiberman et al., 2014). For this reason, educators need to have a clear understanding that these children are more reliant on visual strategies such as facial expression to receive the linguistic input, after which the sessions are more likely to be successful.

Furthermore, using proprioception through syllable clapping or body tapping at the beginning of the session will enable self-regulation, greater attention and the ability to learn (Clarke, 2019).

3.6.2 Songs and Ling Sounds

Songs provided quantitative data through the structured observations and were limited to two per session due to the allocated time to carry out the intervention. They were carefully chosen for two reasons:

Firstly, to try and include the Ling sounds. Ling sounds approximately cover the range of sounds in the 250 – 4000Hz range and represent speech in the low, mid and high frequencies, so broadly represent sounds needed to hear spoken language. Incorporating these sounds will link in the Early Support: Monitoring Protocol for Deaf Babies and Children (DfES, 2006) criteria to provide a clearer assessment of the children's ability to form speech sounds and increased access to the songs. In addition, visuals added differentiation, making them suitable to be used with all age groups of children and with all forms of amplification (Advanced Bionics, 2014). Yet, a disadvantage is that the level of hearing loss does depict the Ling sounds that a child who is deaf can detect, thus, the need for auditory visual presentation of the song, see table 3.6.

Secondly, the advantage of using nursery rhymes and songs is that they were already familiar to the children, due to having been sung in their previous EY setting. Both children are still at an age where these songs hold their interest and can be made visually pleasing to hold their attention. The importance of including singing as part of the programme was that these could possibly increase development of perception skills later in life (Moreno & Bidelman, 2013) and contribute to brain development (Sarkar & Biswas, 2015:107). However, reliability of evidence will depend on any distractions that might occur during the session and recording of information accurately.

3.7 Reflexivity

Reflexivity is a continuous process of reflection on how our knowledge influences research (Hesse-Biber, 2007:17). I work as an experienced EY Teacher who has worked with children who are deaf within the school and nursery environments, being actively involved in supporting the children in their learning and development. This research will challenge the perspectives and assumptions of my views about whether running a programme to include planned focus activities is what is required to extend the attention and listening skills of children who are deaf. Questioning the views will enrich the research process and its outcomes

(Palaganas et al., 2017: 429). Having a passion to continue to provide the highest level of quality practice, that could possibly lead to more EY settings providing interventions for the children who are deaf in their care, ultimately going on to improve social outcomes for them in adulthood.

It was imperative that all those involved were clear about the reasons behind the research and how the outcomes were going to be used in the future. When working with EY children it was important that their voices were always reflected during the observations and the scheduled sessions, taking time to answer questions, and providing opportunities for them to be involved, thus being fully included in the decision-making process.

3.8 Conclusion

This chapter has discussed the research approach and outlined the methods implemented in this study and its validity. A small number of participants were carefully targeted and recruited leading to this case study. The key research tools were observations which were analysed against the assessment tools manually, and the results and findings of this dissertation are discussed in chapter 4.

4. Results

4.1 Introduction

The research question that has guided this study asked whether an adult-focused intervention programme will extend the attention and listening skills of children who are deaf. This chapter sets out the results identified through the collection of data to understand whether the question has been answered, and what the outcome was. It was a case study consisting of two children being observed at the same time during the delivery, evidence gathered for each child was then analysed individually (Robert-Holmes, 2011:82).

The qualitative information will be presented through interpreting transcripts from the unstructured observations, sorting and coding the observational actions made by the children during a free-flow session, that could be linked to the objectives (table 3.8). Quantitative data was gathered from the structured observations during the implementation of the programme, located in the appendices. If only the data from the observations was used to determine the results, then this could question the reliability of the outcomes shown in this chapter. Therefore, qualitative data from the unstructured observations and background material on the children gathered from the ToD will also be considered, as this will provide greater validity to the results set out below.

4.2 Background Data

An analysis of statistics gathered about the children's characteristics (table 3.1) identified four key differences between the children. These will be considered when analysing any specific progress that the data shows, as all could impact on their development of attention and listening skills:

- Age of identification of a hearing loss
- Type of amplification
- Levels of hearing loss
- Languages spoken at home

4.3 Analysis of the Unstructured Observations

Unstructured observations followed the Lancaster and Broadbent (2010) method, a systematic way of identifying attention and listening initiations that the children made during a timed free-flow session (table 3.3).

Table 4.1 shows that both children engaged in some attention and listening initiations during the free-flow session. Their use of these initiations during these observations suggested that they had already acquired the skills to maintain two-way interaction through using purposeful shifting of eye-gaze from object to adult, providing a predictable baseline on which to plan activities for the focus group and therefore scaffold learning, giving the children the ultimate opportunity to make progress.

Table 4.1 Sample of Attention and Listening Behaviours Identified during the Unstructured Observations

Child	Attention	Listening
C1	• Shifted attention from peers to an adult to object • Looked at the paper when cutting • Counted the strawberries as they were put in the basket • Asked 'what I do?' and 'can I have…?'	• Sat on the carpet at the right time • Initiated conversation • Looked up when the whiteboard was turned on. • Was unaware when peers were still talking.
C2	• Eye-gaze to an adult either for an item or for an action • Gestures used such as thumbs up and wagging finger • Glancing at peers • At times struggled to share • Will stand next to and looking at the adult for attention. • Appears to take the lead with peers	• Will follow some instruction from an adult but this needs to be support by sign

Table 4.2 demonstrates how the children used their attention and listening skills to engage an adult for C1 during a short carpet time and for C2 during the free-flow session.

Table 4.2 Example of Children's Attention and Listening Skills

C1 sat on the carpet following the routine, facing the teacher the other children were going out to wash their hands for snack and whilst waiting C1 gained eye contact with the teacher by saying 'going on a bear hunt' ***Adult Response*** - The teacher answered and then asked C1 to go and get ready for snack, using gestures to support the language.
C2 *gathered paper and stamps together and kept them close not wanting to give one to a peer, looking at an adult before being reminded to share.* ***Adult Response-*** C2 would glance at an adult to see their reaction waiting for the adult to remind C2 of the social norms during play.

Qualitative data from the unstructured observations showed that both children had a desire to learn, were attentive and had the ability to effectively shift eye-gaze between communication partners, appearing to use these skills to enable them to follow the routines of the session (Turan, 2010). With the support of the adults this helped the children to socially interact with their peers and be part of the play helping them understand what they needed to do and when.

However, what was unexpected was the difference between how the children used these skills. Firstly, for reassurance – looking at an adult before completing a task - and secondly around confirming boundaries with peers. Both reflect purposeful meaning of their actions supporting the Spencer and Koester (2016) theory that the initiations the children are using promote interactions with their peers (table 4.3).

Table 4.3 Examples of the Children's Positive Interactions with Peers

C1	Was able to shift eye-gaze consistently between activity and a peer/adult when playing at the dough and initiated conversation.
C2	Would take the lead telling peers through gaining eye-gaze, what to do through using a 'thumbs up' or 'wagging' finger gesture to denote they were doing the right thing or not to do something.

The above results identified some positive interactions, however, when analysing the initiations further, the researcher also detected some barriers that may explain the reduction in the children's ability to initiate conversations with peers (table 4.4).

Examples were gathered during the unstructured observations and were categorised into areas that could present a barrier to making progress and developing attention and listening skills. These observations were then taken forward to see if the same barrier occurred during the focus group, so further planning around activities could be implemented.

Table 4.4 Examples of Barriers to Learning

C1	Was not always aware that peers were still talking before starting a conversation.
C2	Mainly used signing as a form of communication but did not always link the correct sign to the word.

Identifying barriers to learning also provided a baseline assessment from which to scaffold development, helping to guide the children. As identified by Humphries et al. (2012), through supporting both children's communication with peers, by using a visual language, enabled an increase in positive attention and listening initiations recorded in the coding below.

4.4 Analysis of Attention and Listening Initiations

The analysis below shows the data gathered from the structured observations during the implementation of the programme, using the principle of circle time. The researcher logged notes at the end of each session, which were sorted into specific initiations and are available in the appendices.

The children's attention and listening initiations were observed and recorded on a tally chart (Appendix 3). Although, not the original intention, but to improve the clearness of these recordings and enable progress to be tracked the researcher then numerically coded the number of initiations to fit into one of the key areas identified in table 4.5, in line with the EYFS (DfE, 2017). These initiations were further broken down by cross-referencing with the criteria from the Early Steps (B-Squared, 2016) document; breaking the ELG (DfE, 2012) down showed a greater reliability of outcomes. The average score was used, fitting into one of the three areas of development highlighted below.

Table 4.5 Coding for the Initiations of Attention and Listening Behaviours

1 = Emerging	Initiations recorded < than 5 times
1.5	Initiations on the border of emerging and developing between 5 and 7 times
2 = Developing	Initiations recorded > 7 times but < than 15 times used in different contexts
2.5	Initiations on the border of developing and achieving between 15 and 17
3 = Achieving	Initiations recorded > 17 times used in different contexts

4.4.1 Shifting Attention and Being Attentive

Figure 1 indicates a gradual increase in C1 and C2 having the ability to use both 2-way and 3-way initiations over the seven sessions. For the two-way interactions C1 was already achieving this ELG (DfE, 2012) that sits within the 22-36 months age range, originally identified from the background material, as highlighted in table 3.1 'Children's Characteristics.' Session one identified that C1 was already bordering on the area of achievement therefore, confirming previous evidence was accurate. This information was considered by the researcher throughout the planning stages for the programme. C2 also managed to achieve this skill by the end of all the sessions.

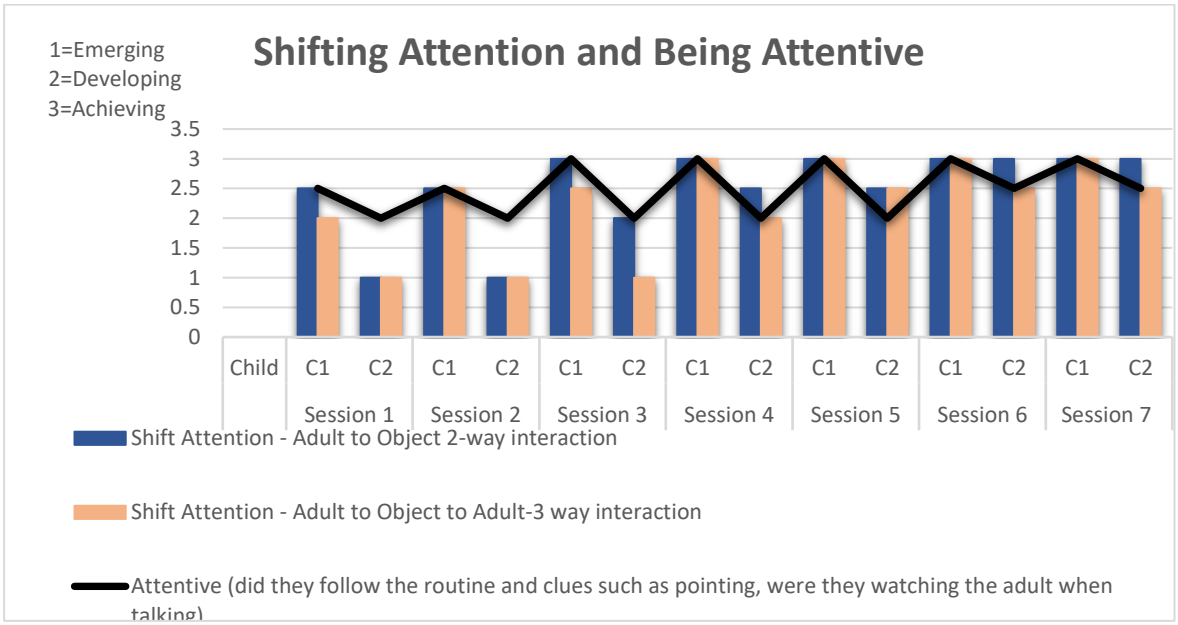

Figure 1- Analysis of children's ability to shift attention and being attentive

Table 4.6 and 4.7 highlight examples of the children being motivated in their initiations when they started to link objects, visuals, pointing and signing to the activity, especially in sessions 4 to 7. This shows that with continued prompting and practice the child should eventually be able to maintain their focus from one place to another (Paparella & Kasari, 2004:269).

Table 4.6 Examples of two-way initiations

C1	Was reluctant to make the flour faces and glanced several times to an adult and back to the flour.
C2	Saw the pretend spider and stood next to an adult signing spider and pointing to it on the box glancing back to the adult.

Table 4.7 Examples of three-way initiations

C1	During the 'what's in the bucket' activity glanced in the bucket, looked at an adult and then to peers before picking up the object.
C2	During singing 'Old MacDonald' glanced from adult to finger puppet and back to adult.

Some of the least successful three-way initiations were in the first weeks of delivery. This could have been due to the routine being unfamiliar to the children as they had not yet learnt the rules of the group. For example, it can be seen from the observation notes that session one identified that C2 attempted to gain an adult's attention by standing close to the researcher and pointing. This suggests that although these initiations were successful because the adult responded, they were not always relevant to what was happening at the time, so further encouragement was needed to increase attention to the activity in the early sessions.

These results do confirm that to maintain a consistent success rate of increasing attention skills, it does rely on consistency of the delivery, giving the children an opportunity to practice familiar routines, which in this case resulted in their ability to maintain their focus from one adult to object and back to adult. In fact, corroborating the research by Paparella and Kasari (2004:269) that eye-gaze is an effective turn-taking mechanism that will gradually help increase the children's understanding of what was expected from them. Both contributing to the

achievement of objective two and five (table 3.8) devised from the assessment tools.

Expectations of the children were established in the initial sessions, and the benefit was shown in Figure 1. Where the children gradually increased their ability to effectively shift attention when joining in the action songs, looking at each other with one prompting the other to do the actions, providing opportunities to socially interact with each other.

4.4.2 Responsiveness and Asking Questions

Figure 2 highlights how both children responded to following instruction during the activities and Figure 3 shows whether they asked questions. Overall, both children increased their ability to follow the routine as the later sessions progressed. C2 had the biggest increase in development with starting in the area of 'emerging' and by the final session was bordering on the area of 'achieving'. It could be debated that C2 had a greater reliance on using a visual language such as BSL, to enhance the visual clues. This being due to a profound hearing loss, which in turn could change the way information is being processed (Graham, 2015) therefore, enabling more social interaction (Paparella & Kasari, 2004:269) to take place. Whereas, C1 having a moderate hearing loss was more reliant on verbal communication but was still learning to master the skill of knowing how to conduct a two-way conversation.

Sessions 5 to 7 showed the biggest increase in responsiveness for example, at the beginning of the session the researcher was pointing to the visual routine (order of the session) and when it got to the songs C1 asked *'what songs today?'.* This again highlights the importance of the visuals to support understanding and an ability to link the visual with the activity. It identifies awareness of routine, thus, providing further evidence towards achievement of understanding and following a routine.

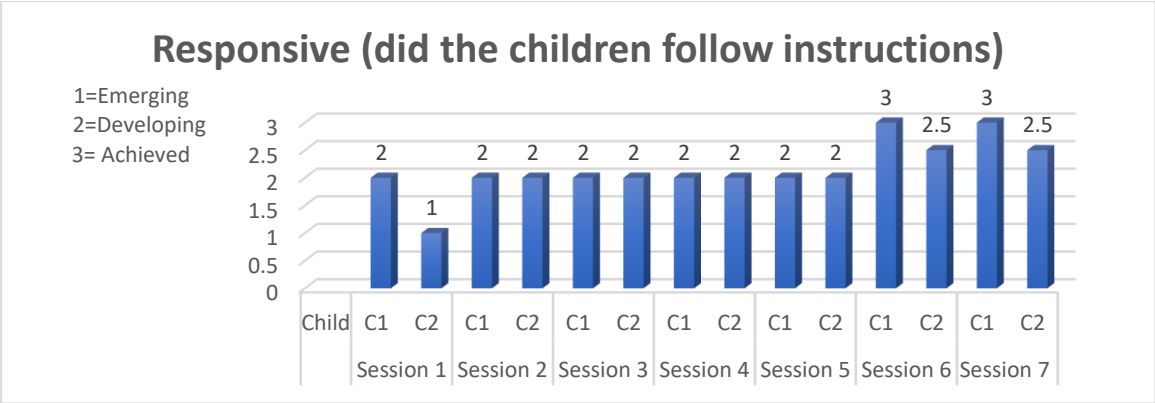

Figure 2 - Analysis of the responsiveness of the children and whether they followed an instruction

There were opportunities for the children to ask questions throughout the sessions, due to the pace of delivery being driven by the children's level of interest in the activity. Data in Figure 3 shows questions asked by the children were limited as both remained in the area of 'emerging'.

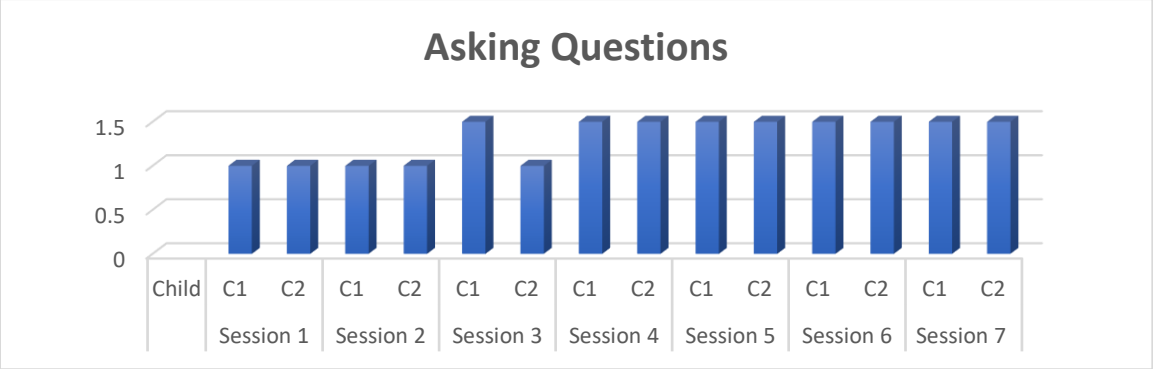

Figure 3- Analysis of questions asked by the children

However, table 4.8 does highlight that C1 was motivated to ask a greater amount of questions linking to the activities through using more meaningful speech and gesture. This initially suggested that C1 was more successful at using verbal language. Yet, further analysis identified that on average C1's questions mainly focused on the songs that were going to be sung or something that had been missed out of the routine, so could be classed as familiar rather than inquisitive questions.

C2 was more likely to use visual skills to pick up on the clues and gesture made by the researcher who was reinforcing the questions C1 asked, then repeat it using

signing later in the session. However, these initiations still provided opportunities for the researcher to reinforce, model and extend the language being used.

Table 4.8 Examples of questions asked by the children

Asked by the child
C1 – Rocket today? (verbal/gesture) C2 – Rocket and balloon? (signing/gesture)
C1 – Going to sing the rocket? (verbal/gesture) C1 – Where did the balloon go? (verbal/gesture)
C1 – Going to say goodbye? (verbal/gesture)
C1 – What songs today? (verbal/gesture)

When it came to the researcher asking the children 'what' and 'where' questions, there was a difference in responses especially when singing 'Old MacDonald', Corroborating once again Humphries et al. (2012) theory that if children have exposure to visual learning alongside a visual language then progress can be achieved (table 4.9).

Table 4.9 Examples of children's responses with support from visuals

C1	Could tell the researcher what the animal (cow, horse, chicken, sheep) was, and the noise that it made.
C2	Initially needed encouragement from an adult to copy the sound the animals make.

By session 5 C2 was able to make the sounds for familiar animals independently. Yet, if you asked C2 'what is this?' holding up the sheep/cow the response would be 'baa /moo' suggesting that the link had been made between the animal and the noise that it makes, despite not yet being able to join the name of the animal with the object. To help scaffold this understanding, activities containing animals were included in future sessions, offering further linguistic opportunities including introduction of new vocabulary. Through making the sounds, progress could be linked into the criteria set for the Early Support: Monitoring Protocol for Deaf Babies and Children (DfES, 2006), providing a specific age range that the children were currently working in.

4.4.3 Sounds, Songs and Rhymes

The analysis of Figure 3 reveals an unexpected reluctance from both children to play with sound and join in the songs, which could suggest that the songs were unfamiliar to them. This goes against the researcher's original theory that the children would be familiar with the songs. It could also be the case that in previous experiences visuals had not been incorporated as part of the programme. Hence, being in line with the study by Graham (2015) about the importance of including repetitive singing activities in the EYFS curriculum (DfE, 2017); therefore, the songs were repeated. Once the children were more familiar with the songs there was a greater willingness to join in with the sounds and actions.

Furthermore, simple activities were implemented such as the researcher modelling counting the beats on the drum for the children to copy, this gradually increased in difficulty over the sessions. This again was a visual activity and confirmed C2's ability to make progress using visual skills to take part in an activity playing with sounds.

These activities provided opportunities for both children to become familiar with the actions to the songs and develop their listening skills over time (Clark, 2007). Here, the results indicate the range of development that was recorded, identifying that C1 progressed from emerging to developing on the scale, and C2 who appeared more motivated by counting the beats on the drum, made greater progress moving from emerging to bordering on achieving. Again, providing further information to support the use of sounds, songs, and rhymes in aiding positive auditory perceptions in an awareness of ranges of sound (Graham, 2015).

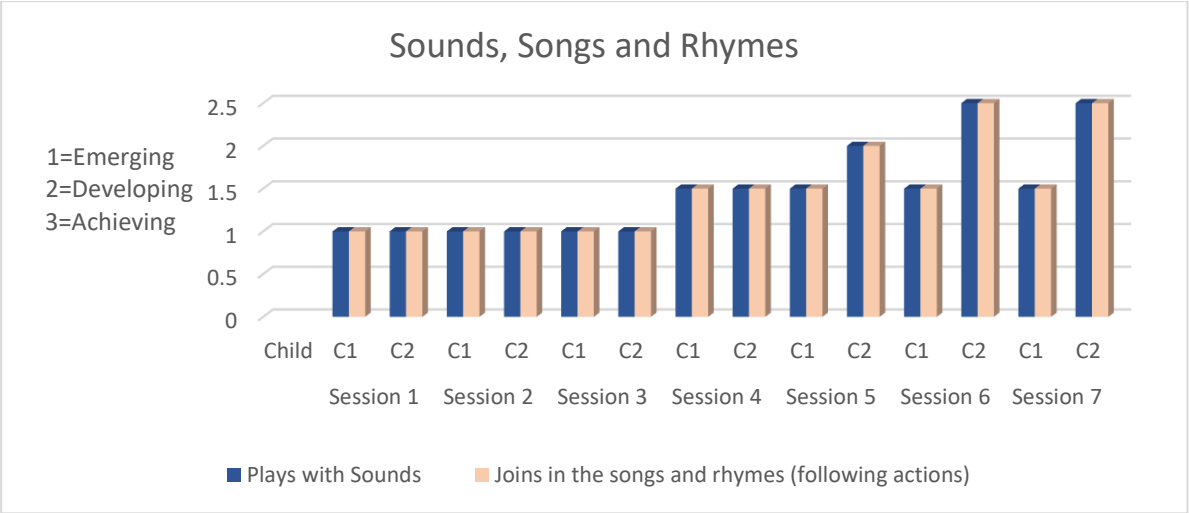

Figure 4 - The development of listening skills whilst using musical instruments and singing songs

4.4.4. Distinguishing Sounds

Figure 4 identifies the progress made during the activity implemented to distinguish sounds. This activity consisted of locating and identifying the difference between a bell and a drum. On average there is an increase in progress made across the sessions by both children of 0.5 from their starting point, confirming their progress made was identical.

However, adding the third sound (a squeaker) did not prove successful, possibly due to the pitch of the sound which may have been too high for their auditory range or distinguishing a sound in an environment with some background noise, meaning the clarity of the sound could have been masked.

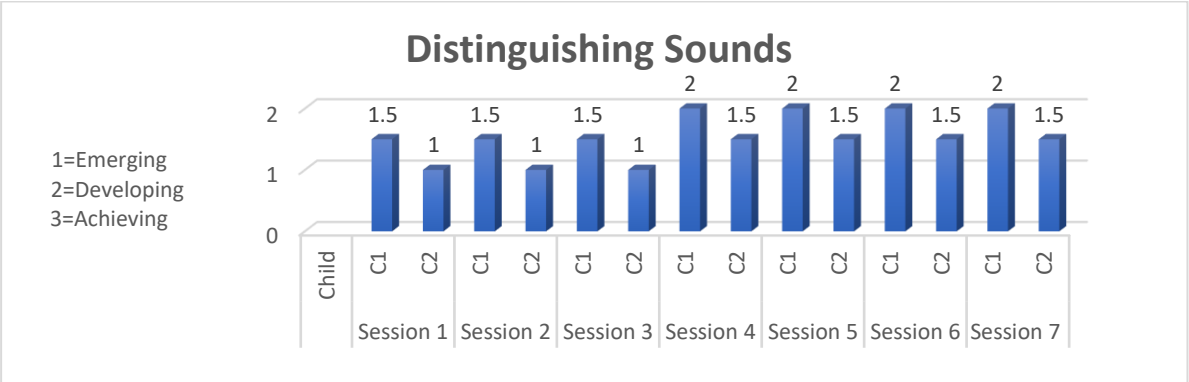

Figure 5 - Analysis of children's ability to distinguish sounds

4.4.5 Following Instructions

As an additional measure of the children's listening skills, their ability to follow instructions were recorded and then sorted into responses made to an instruction. The researcher set up specific activities that would target this area of development giving both children the same chances throughout the session. Visuals clues were used to reinforce the instruction, thus providing an increase in important learning opportunities for the children to link the picture or gestures to language, which highlighted each child's reliance on that visual clue.

Figure 6 identifies the range of progress made following a two-keyword instruction; the children used their attention-gaining skills to help them reinforce the instruction that had been delivered through glancing at the researcher, before completing the instruction. A skill that was also evident in the unstructured observations (table 4.3), reinforcing their ability to use eye-gaze from object to adult.

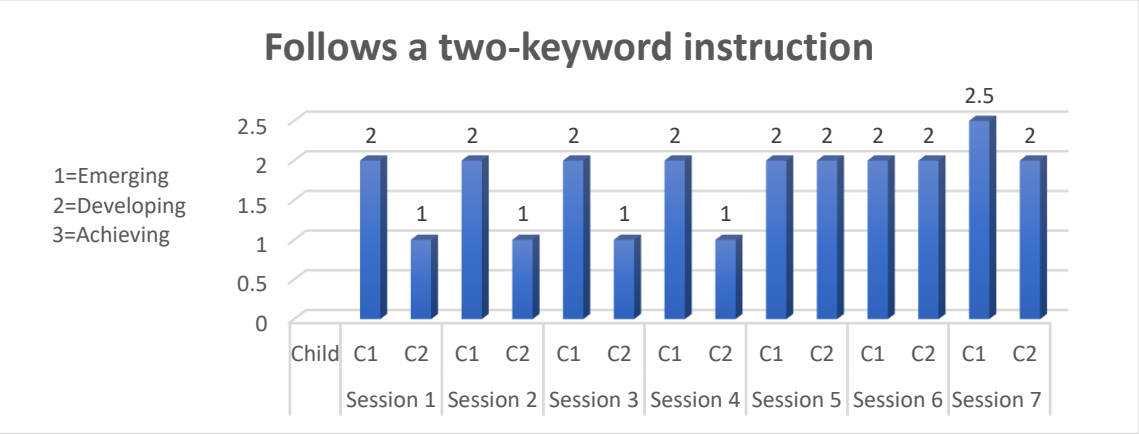

Figure 6 - Analysis of following a two-keyword instruction

4.5 Distraction and Self-Regulation

Table 4.10 shows the data from the tally charts was coded and sorted into the two areas of distraction and self-regulation behaviours, that the children demonstrated during the sessions.

Table 4.90 Coding for the Distraction and Self-Regulation Behaviours

	Distraction		**Self-Regulation**
1	< than 3 occasions		Requires adult encouragement to refocus on task
1.5	Bordering on 4 or 5 occasions		
2	Between 6 and 8 occasions		Requires some adult encouragement but is starting to refocus independently

2.5	Bordering on 9 and 10 occasions		
3	>than on 10 occasions		Able to refocus on task independently

Figure 7 shows that there were several times when the children needed to be refocused during the sessions, with C1 averaging 3.5 distractions and C2 4.4 distractions over the period of the seven sessions. Sometimes, they could refocus themselves independently whereas, on other occasions it was through the redirection and positive encouragement from an adult.

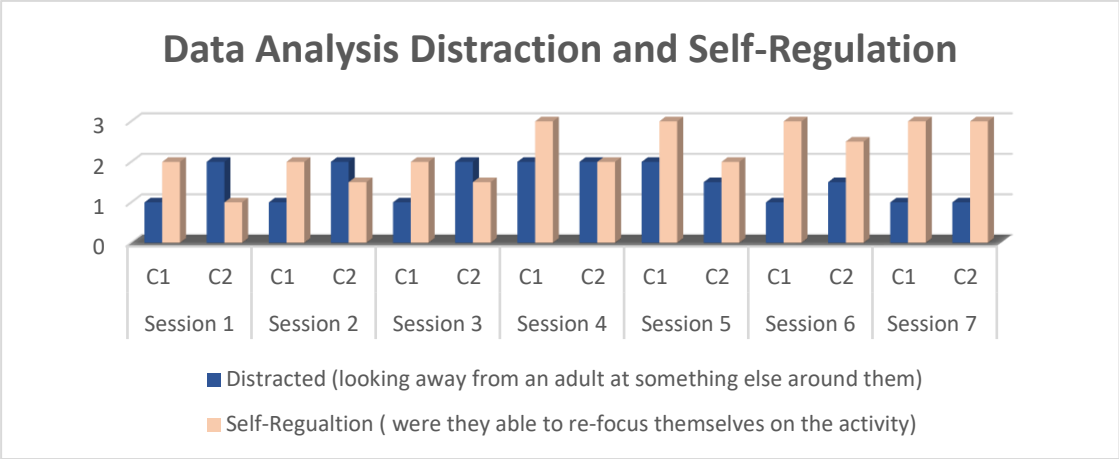

Figure 7 - Analysis of Distraction and Self-Regulation Behaviours

Analysis of data does show that there is a greater emphasis between being distracted and being able to re-focus on an activity. The mode of incidences where the child became distracted highlighted more adult encouragement was required to help the children to self-regulate and refocus, for example see table 4.11.

Table 4.11 Examples of Distraction and Self-Regulation Behaviours

C1	Would touch an item on the table then put it down whilst still watching an adult or peer. Would self- regulate or sit down again without adult encouragement.
C2	Would get up from the chair, and touch the objects, then require encouragement to sit down in the initial weeks of the programme.

This may explain the reduced progress over the initial sessions compared to the latter ones. The introduction of syllable clapping at the beginning of the sessions was where C2 started to show an increase in moving towards having a greater ability to self-regulate and re-focus independently.

However, it could be argued that by implementing proprioception (Clarke, 2019) at the beginning of the sessions and planning to include some repetitive elements both increased the focus of the children due to them knowing what is going to happen next, and therefore increased the skills of self-regulation.

4.6 Evaluation of Programme Delivery

In this research the programme was designed to be delivered regularly and seven weekly sessions were completed. The number of sessions the researcher was able to deliver was determined by work commitments and school routines.

In line with the theories of Lindon (2001) and Deluzio and Girolametto (2006), each week the focus, how it was delivered, and the results were analysed. With this information the plan for the next session was adapted to incorporate activities that the children had shown an interest in. During making these adaptations the researcher needed to be mindful of the objectives whilst still offering a holistic approach (Turan, 2010) with an aim to increase the children's engagement.

When analysing the impact of the songs that were sung there was one song 'zoom, zoom, zoom' that was included in most of the sessions. The reason for this was that the children would use meaningful initiations, such as 'rocket or balloon' either verbally or using signing at the beginning of each session. Motivation for the song appeared to come from counting down from 5-1 before the researcher let the balloon fly away. This supports the importance of incorporating visual clues to be used alongside the language, providing a greater understanding of language being used.

4.6.1 Benefits of the Intervention Programme

As the research progressed two key benefits of the programme were identified. Firstly, the combined opportunities for the children to be active participants through turn-taking and presenting the activities in a way that promoted inquisitiveness, in this case, putting the activity in the bucket, which could suggest an increase in maintained visual attention of the children, leading to improved progression of skills.

Secondly, all sessions combined the same elements, followed the same pattern and activities chosen to target the skills being developed. Maintaining a consistent

approach enabled the children to embed the routine, confirmed when C1 reminded the researcher '*we need to say goodbye'*, at the end of session seven.

4.6.2 Challenges Around Delivery

Through delivery of the programme there were three main challenges that needed to be overcome, which will be discussed further in chapter 5.

Firstly, the intention for the intervention to be time-limited, in order to take account of the fact that children who are deaf often have to work harder than their hearing peers (NDCS, 2015), proved difficult to adhere to. In contrast to the researcher's original views, due to the activities being partly driven by the children's level of interest through participation, the length of the latter sessions were altered to incorporate the length of time that the children could focus, rather than sticking to 15-20 minutes as originally planned.

Next, planning the collection of data through subdividing a systematic observation schedule and recording in the form of a tally chart, showed all initiations were accounted for (Thomas, 2017:160). Yet, following this method was reliant on a staff member having the ability to observe and record two children's initiations alongside each other without being side-tracked. This proved problematic due to the space allocated for delivery being too small, plus there was some environmental noise which needed to be considered throughout the analysis, as it could limit the auditory input for children who are deaf. This could lead to a reduction of the number of initiations both children made or that the adult identified due to being distracted.

However, to reinforce validity as identified by Gustafsson, (2012) the researcher linked this information into the current ELG (DfE, 2012) assessments and the children's current development levels identified by the ToD. The results were comparable, suggesting that despite the additional distractions the intervention programme could be considered successful.

Overall, the results do indicate progression, yet having reduced auditory input as highlighted above, it could also explain the reduced results around 'initiating conversation' and 'following a three-keyword instruction'. Further analysis of the data showed that neither child maintained their focus on the researcher to receive the end of the instruction.

> For example, when asking the children '*Can you find the blue car?* They had lost any joint attention by the time the 'car' was mentioned.

For this reason, the researcher decided to focus on the two-keyword instructions and embed these before increasing the difficulty to three-keywords.

4.7 Conclusion

The structured observations provided an insight into the children's attention and listening skills, showing the researcher how they were really using these skills rather than how it was previously thought they were using them. However, while the observations were valuable in providing an impression of the level of skills that the children already had, it was the triangulation with other forms of data that provided the concrete ratification required to determine the effectiveness of the programme.

5. Discussion

5.1 Introduction

The primary focus of this research was to determine whether an adult-led intervention programme delivered to children who are deaf would increase their attention and listening skills.

This chapter provides a critical discussion of findings from the initial analysis (chapter 4), compared against existing literature (chapter 2), to help determine the impact of the programme. Throughout this study a wide body of literature has been identified around establishing joint and visual attention between parent and children who are deaf, which is vital to increase language and communication skills (Fickenscher et al., 2015).

5.2 Considering Learning towards the Objectives

The following section will consider whether the objectives identified in chapter 3 have been achieved by analysing the results to discover any emerging patterns of the progress the children made who were involved in this case study, plus any barriers to learning that they may have encountered.

5.2.1 Engaging in Action Rhymes/Songs and Using Communication Methods

A theme that emerged were that the songs played a significant part in the development and social interaction of the session, although an unexpected barrier identified in the first session was that the songs were unfamiliar to the children. To overcome this the songs were repeated over more than one session, building their attention, and listening skills eventually enabling the children to pre-empt which song was going to be sung towards the end of the session.

This underpins the theory that songs and music play an important role for brain development. It engages and stimulates brain functioning (Sarkar & Biswas, 2015:107), including auditory, visual, motor and memory related processes. Stimulating all areas of the brain simultaneously confirms the benefit of including songs in the sessions promoted positive interactions between the researcher and the children. Given the breadth of possible social benefits this could suggest firstly that children who have access to music gradually increase speech perception and enhanced listening and linguistic abilities (Hedden, 2012), explaining the reason for the progress made by both children during the sessions.

Secondly, singing is already implemented in many EY settings as part of offering a range of activities that lead to a greater development of perception skills. Planning these sessions could be seen as an extension of quality practice offering a differentiated and personalised curriculum (DfE, 2015) incorporating outcomes for next steps, enabling more focused activities to be included. For example, the turn-taking games allowed for expanding receptive and expressive language (Fickenscher et al., 2015) which requires a higher level of attention ability.

Yet having such a focus could also be a barrier to aiding children's communicative development, as research by Duncan (2001) did show a higher number of interactions occurred during child-led activities rather than adult-led ones, although this did depend on how engaging the activities provided were. Therefore, it could be considered if activities are needed to be motivating to inspire the children's interests then educators do need to plan either directly or indirectly in both a focus group and during a free-flow situation.

Finally, using songs as part of the schedule facilitated with visual representations and signing, this gradually developed a shared understanding of turn-taking between the children, providing a platform from which to extend the current planned activities. Furthermore, the acoustics (different pitches in sound) from the songs supported the children's attention skills whilst the visuals helped them make sense of the verbal information (Cole & Flexer, 2011:240).

To support the use of visuals further, Graham (2015) also examined the use of this strategy and concluded that if the language being used is linked into the visuals (with the researcher using gestures to facilitate turn-taking) then there would also be an increase in development in joint attention skills. These combined with the seating layout of the group proved effective due to the children who are deaf having visual contact with everyone in the group (Bednarczyk et al., 1994:13).

The results from sounds, songs and rhymes do suggest that they provided a whole range of opportunities for the children to progress in development of both attention and listening skills. But children will only develop these skills over time so to maximise progress they need to have access to them from an early age from their parents and educators, who need to reinforce them by repeating the activities. However, the fact that there was one song in particular that both the children liked

to sing could mean that other opportunities to engage in new language was overlooked by the researcher.

5.2.2 Focusing Attention and Following a Routine

The study found that the use of visuals and a repetitive routine can contribute to the development of attention and listening skills in children who are deaf. Although evidence confirms that this may be true, results show that it can take a minimum of four to five sessions to embed a routine where the children start to pre-empt what is going to happen next. The data did identify some key patterns such as 'the importance of using visual clues' and 'repetitiveness of activities' through the analysis which could be used to understand the benefits and barriers to such a programme.

One major finding that continually emerged indicated that planning and preparation of the session beforehand increased the children's understanding of the routine (Paparella & Kasari, 2004:269), therefore increasing their ability to shift attention. With this preparation, progress could be calculated against the assessment toolkits (DfE, 2015). Here, the children were shown to offer more spontaneous interactions during the session, which enabled learning and play to be integrated between the researcher and the children, whilst still maintaining a focus on a specific area of development.

Once the children understood the expectations of the session, it was the children who created the conditions to promote participation (Eilertsen, 2017). This suggests the role of the researcher becoming one of mediator, guiding and extending involvement, stepping in at appropriate points to facilitate and extend the activity. In turn, giving the children time to process and successfully initiate their own meaningful interactions between themselves (DeLuzio & Girolametto, 2006:220). These actions had a significant impact on increasing their participation by showing a greater engagement in the activity through a desire to use their communication skills.

This pattern of responses from the children does underpin the theory of Samuelsson and Carlsson (2008: 631) that play, and routine go hand in hand, although it must be organised, so the interaction, knowledge and environment are all intertwined. Yet, it was important through the planning as highlighted above, to

provide activities that the children wanted to communicate about (Duncan, 2001) to encourage that communication to occur.

In addition, categorising the programme into sections enabled elements where the children made notable progress, leading to assessable progression, again identified by Tanner et al. (2006:8) as quality practice. Without the children having access to a routine may have lessened their ability to follow the language being used and would have reduced progress made. In this instance, planning beforehand to incorporate the interests of the children provided an appropriate context for learning language. Furthermore, this was a small-scale study fitting in with a review by Teager (EIF: 2018) and Bonetti (EPI: 2018) that lower children to staff ratios do lead to better children's outcomes and that intervention programmes can prove effective.

However, having the expertise to plan an appropriate curriculum is different from being able to effectively deliver it. Additional research needs to be conducted to determine how well the use of visual strategies incorporated within the schedule further promoted the use of language, as one of the barriers to learning was linking the name of the item in a picture to the object.

5.2.3 Recognising and Responding to Different Sounds

Despite the generally positive findings when sorting the evidence, there was variability between the children increasing their ability to listen and maintain joint attention, through recognising and responding to two different sounds. A surprising result was that they both struggled with the third sound being introduced even with their different levels of hearing loss.

Apart from the challenges to delivery already mentioned in chapter 4 there were several factors that may have impacted on this outcome, such as age of diagnosis, previous experiences or it may be more specific to the environment and how the levels of sound are received. For example, one of the main barriers to achievement to consider would be the range of pitches and loudness levels of the items. This is the same with environmental sounds, with the lower the pitch the higher the intensity which can be easier to identify, accounting for the children being able to identify the drum over the squeaker for example.

In fact, for the children to be able to play with sounds it needs to be part of the pedagogy in teaching children to listen in order to create an aural repertoire where they can replicate sounds (Hedden, 2012). Even so, it must be considered that the children needed to understand the rules of the game such as counting and waiting and this also required better listening skills (Qayyum et al., 2015:11).

Indeed, this could indicate that the environmental noises occurring in the space allocated for delivery distorted the sounds, making them more difficult to distinguish, resulting in less incidental speech received during the session, which would limit the receptiveness of word endings such as plurals. These environmental barriers were considered through the final analysis to further confirm the reliability of the results (Robert-Holmes, 2011:115).

Although quantitative data identified that both children showed meaningful eye-gaze control, in that they could shift their focus three-ways, one of the children had a greater focus on a 'Total Communication' system, an area where research does report that this system could be a barrier to the development of spoken language acquisition due to segmentation difficulties (Ting et al., 2012:2809). This is an important direction for future research especially considering the reliance on visual clues during this research to aid understanding the session. But, as expected, these results suggest that children who are deaf do rely increasingly on other senses, especially vision, to be able to process auditory information from their environment even when they do not look directly at the sound source (Katz & Schery, 2006:91).

Another important source of research is that there could be an element of how well a child has learnt to listen to the breadth of environmental sounds and speech that surrounds them, otherwise this could be a barrier when socially interacting with peers (Houston & Bergeson, 2014:2). This may explain the difficulties encountered, not only in identifying sound but also being able to answer questions of linking sound to an object.

5.2.4 Responding to a Two and Three-Keyword Instruction

Results show that there were several opportunities through the activities implemented for the children to use their listening skills following a two or three-keyword instruction. Although, there were several occasions where two-keywords

were followed and both children made progress, achievement for three-keywords was more limited.

While this study could not determine the exact reason for this lack of progress there are two theories to consider. Firstly, it could be dependent on the age and duration of audiology deprivation in the EY (Cruz et al., 2013). Although both children were identified through the NHSP the age of fitting of amplification differed and for C2 it was over two years in age, eventually going on to having a cochlear implant fitted at 33 months, so possibly impacting on the rate of development of speech, language and communication skills (Patel & Feldman, 2011:304). In addition, for C2 English was not the first language spoken in the home environment which poses a greater challenge as may not have been exposed to English from birth.

Research carried out by Horn et al. (2005) also identified several studies about immediate sequence memory, reporting that verbal encoding and rehearsal skills appear to be atypical in children who are deaf fitted with cochlear implants. This could explain why some children find it harder to hold onto the keywords to follow an instruction than others. Therefore, it is important for children who have difficulty encoding speech to build up their attention skills and knowledge of the object before being able to categorise and differentiate it (Bruce & Borders, 2005:240), and listening skills to make finer auditory discrimination (Moog & Stein, 2008:135). Further explaining the reduced response to ‘what’ and ‘where’ questions asked.

Secondly, the differences in levels of hearing loss have led to both children relying on different modes of communication. Whichever communication method the child relies on they still need to be cognitively aware to remember to wait for the researcher to finish giving the instruction before providing a response (Moll & Tomasello, 2006:610). Waiting before providing a response was evident in the unstructured observations that both children had yet to master this complex skill, which needs a set of cognitive processes that select and filter information (McMains & Kastner, 2011:591). Throughout the sessions, it was important for the researcher to be aware that language cannot be perceived without visual attention to the interlocutor, so careful orchestration was required to maintain the children’s

attention (Lieberman et al., 2014:2) throughout each session to scaffold and promote increased auditory skills.

To improve development of the programme, gestures could have been extended even further increasing the child's direction to the auditory language (Katz & Schery, 2006:92). Speaking slower could reduce the rate of speech, thus improving clarity and adding visuals for turn-taking, helping to increase attention skills and awareness of social conversational etiquette. Both effective strategies highlighted by Martin-Prudent et al. (2016:14) to extend communication skills.

5.3 Social Inclusion in the Intervention Programme

The results of this study indicated that the children were socially inclusive, and as the sessions progressed, they were more able to self-regulate to refocus. Yet there was still considerable variation in the way the children applied various communication strategies that made participation with peers possible (Eilertsen, 2017). These initial experiences of joint attention suggests that the children were learning to coordinate their eye-gaze, which did serve as an effective cue to scaffold their attention through using visuals (pictures), verbally (C1) and through signing (C2) to build some social norms plus contributing to language development, turn-taking and sharing skills (Vaughan van Hecke et al., 2012:7). As evidence suggests children who are deaf most frequently joined in social or group play rather than cognitive play (Qayyum et al., 2015:9) as this involves rules that are harder to understand. However, barriers to these peer interactions could also be moulded by previous play formats from home and nursery experiences through to copying or imitating behaviours.

The data gathered in the unstructured observations was coded and classified into the type of initiation that the child instigated such as social or communication. This labelling showed how C2 could have applied a learnt behaviour in a social situation. For example, 'thumbs up' was a way of mirroring expressions which allows children to join in social play and participate in reciprocal completion and coordination of actions to get needs met. Corroborating research by Turan (2010) and Clark (2007) that children who are deaf do have a desire to learn and are motivated to be attentive, all of which are the core skills required to achieve

communication and language but also give an insight into the process of how children learn.

Even so, results suggest that difficulties with comprehension caused by a hearing impairment and lack of incidental language learning could have impacted on meaningful participation in interaction during the early sessions. However, this does support the study by Crume (2013) and Moll and Tomasello (2006:610) that it is around the age of four that children who are deaf are more able to self-regulate attention to a visual language independently.

5.4 Evaluation of the Intervention Programme

This study focused on an adult-led intervention programme to target attention and listening skills in children who are deaf. Although the results may not have demonstrated statistically significant results, possibly due to the length and scale of the study, they do suggest progress was achieved by both children through the strategies used and activities that were implemented.

Even so, there were two important themes that threaded through this research that could be argued, provided a detailed description showing which elements contributed to the children's progress (Teager & Bonetti, 2018). Firstly, planning to carefully incorporate the children's interests but keeping the objective of extending attention and listening skills clearly at the forefront, laid foundation for progress to be made. Planning activities that the children could take an active part increased their ability to self-regulate, leading to better long term cognitive and social outcomes. (Canney & Byrne, 2006:20).

Secondly, having a greater awareness of building visual and joint attention skills through use of visuals and a visual language such as BSL, reduces the risk of language deprivation and helped the children to understand the world around them. During the delivery using both forms of visuals gave the children greater access to the language being used during the activities, increasing the communicative interactions between adults and children (Brown et al., 2001:21) during the sessions.

Finally, discussion between the researcher and the school staff enabled clarity on the target behaviours that were being observed in the sessions and so could be logged accurately on a data sheet. These discussions provided further rigour to the

research confirming validity and alleviated any biases between the researcher and the outcomes. In addition, the statement below from the member of school staff collecting the information from the structured observations, emphasised the potential success of the programme, highlighting the progress the children had made.

> *'I have seen the development that the children have made and will be implementing a short programme to help them develop further'*

5.5 Limitations and Future Research

Although there is strong suggestion from the analysis of data that the children who are deaf made progress, the collection of data using tally charts was not without difficulties. In line with the theory of Morse (2015) having only two participants yielded a greater amount of useable information. There was such a large amount of data collected through the structured observations, it offered a wider exploration (Eisenhardt & Graebner, 2007:29) which required further breaking down to gain a broader and deeper analysis and confirm the validity of the evidence gathered. Cross-referencing with a variety of other facts highlighted above underpins research by Flyvbjerg (2006), that using a number of different methods to collect data provides reliability and avoids subjectivity, in this case, identifying that there was not enough proof to include 'initiates conversation' in the final analysis.

Due to the amount of data, and to provide greater validity in future research, the criteria for the schedule of behaviours around attention and listening would need to be reduced. This would enable the researcher to break down the children's learning and have a better understanding of the way they learn plus, any barriers they may encounter.

Furthermore, background information on the children was limited and in hindsight following the method of collection set out by Hohmann and Mamas (2014:4) would have been beneficial. Interviews with the parents would have helped the researcher gain a better understanding of each child's journey through their EY

education which would have added additional data to enable further reflection prior to planning the activities before delivery.

6. Conclusion

The overall aim of this study was to focus on extending the attention and listening skills in children who are deaf through an adult-led intervention programme. This research has evaluated the impact highlighting the benefits and barriers that could play an important role in the development of attention and listening skills for these children.

The focus was on a mixed methodological approach, which produced an immense amount of data that was sorted into categories to determine whether the children had achieved the objectives set from the assessment toolkits. Whilst acknowledging that the results should be interpreted with caution due to being a small-scale study there are still several positive conclusions that can be gained.

There is compelling evidence around the importance of the planning and preparation of the sessions, combined with using visual objects, sign and gestures to support the children's understanding. These were vital for the development of increased ability of the children to understand the routines and therefore increasing their skill of being able to shift attention, leading to more spontaneous interactions. The children taking part in this study demonstrated how through understanding the routines in the visual mode they were able to pre-empt what was going to happen next.

For children who are deaf, it is usually the home environment that provides the building blocks for later learning in all areas of the EYFS (DfE, 2017). But we as educators also need to understand the importance of planning and incorporating visual clues to support the development of these children, through activities that provide meaningful experiences and encourage active learning, to help them achieve better outcomes in acquiring language. We need to consider that all children are unique and therefore, those previous home and nursery experiences prior to starting school will be different but are equally important.

Nevertheless, this research has shown some promising results by running a planned intervention programme. In order to gain the maximum benefit, it is important to remember that children who are deaf will still require a holistic approach to learning, combining free flow and focus groups, both of which provide opportunities to explore, interact with their peers and practice any newly acquired

skills. They need to be given opportunities above and beyond their hearing peers, which need to be planned and implemented by educators in EY settings. It is a combination of a number of elements mentioned above that is classed as quality practice. Yet ultimately, an environment in which increased attention and listening can be achieved, provides the required backdrop against which communication and language skills can be developed.

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Appendices

Appendix 1 – Ethics Approval Forms

University of Hertfordshire UH Ethics Committee

UNIVERSITY OF HERTFORDSHIRE
ETHICS COMMITTEE FOR STUDIES INVOLVING THE USE OF HUMAN PARTICIPANTS ('ETHICS COMMITTEE')

FORM EC3
CONSENT FORM FOR STUDIES INVOLVING HUMAN PARTICIPANTS

I, the undersigned *[please give your name here*, *in BLOCK CAPITALS]*

……
of *[please give contact details here, sufficient to enable the investigator to get in touch with you, such as a postal or email address]*

…..……
hereby freely agree to take part in the study entitled *[insert name of stu*dy *here]*

Will an Adult-Led Intervention Programme Increase the Attention and Listening Skills of Children who are Deaf?
…….

UH Protocol number -EDU/PGR/CP/04357 - approved by the Social Sciences, Arts and Humanities ECDA.

1 I confirm that I have been given a Participant Information Sheet (a copy of which is attached to this form) giving particulars of the study, including its aim(s), methods and design, the names and contact details of key people and, as appropriate, the risks and potential benefits, how the information collected will be stored and for how long and any the length of the research and that information collected will not be used in any follow up studies.

2 I have also been informed of how my personal information on this form will be stored and for how long. I have been given details of my involvement in the study. I have been told that in the event of any significant change to the aim(s) or design of the study I will be informed and asked to renew my consent to participate in it.

3 I have been assured that I may withdraw from the study at any time without disadvantage or having to give a reason.

4 I have been told how information relating to me (data obtained in the course of the study) will be handled: how it will be kept secure, who will have access to it, and how it will or may be used.

Signature of participant……..…Date……

Signature of (principal) investigator……Date……

Name of (principal) investigator *[in BLOCK CAPITALS please]*

……

Form EC3 – 1 August 2019

University of Hertfordshire UH Ethics Committee

UNIVERSITY OF HERTFORDSHIRE
ETHICS COMMITTEE FOR STUDIES INVOLVING THE USE OF HUMAN PARTICIPANTS ('ETHICS COMMITTEE')

FORM EC4
CONSENT FORM FOR STUDIES INVOLVING HUMAN PARTICIPANTS
FOR USE WHERE THE PROPOSED PARTICIPANTS ARE MINORS, OR ARE OTHERWISE UNABLE TO GIVE INFORMED CONSENT ON THEIR OWN BEHALF

I, the undersigned *[please give your name here, in BLOCK CAPITALS]*

……
of *[please give contact details here, sufficient to enable the investigator to get in touch with you, such as a postal or email address]*

……
hereby freely give approval for *[please give name of participant here, in BLOCK CAPITALS]*

.....
to take part in the study entitled [Insert name of the study here]

Will an Adult-Led Intervention Programme Increase the Attention and Listening Skills of Children who are Deaf?

.....

UH Protocol number -EDU/PGR/CP/04357 - approved by the Social Sciences, Arts and Humanities ECDA.

1. I confirm that I have been given a Participant Information Sheet (a copy of which is attached to this form) giving particulars of the study, including its aim(s), methods and design, the names and contact details of key people and, as appropriate, the risks and potential benefits, how the information collected will be stored and for how long, and any plans for follow-up studies that might involve further approaches to participants. I have also been informed of how my personal information on this form will be stored and for how long. I have been given details of his/her involvement in the study. I have been told that in the event of any significant change to the aim(s) or design of the study I will be informed and asked to renew my consent for him/her to participate in it.

2. I have been assured that he/she may withdraw from the study, and that I may withdraw my permission for him/her to continue to be involved in the study, at any time without disadvantage to him/her or to myself, or having to give a reason.

3. I have been told how information relating to him/her (data obtained in the course of the study, and data provided by me, or by him/her, about him/herself) will be handled: how it will be kept secure, who will have access to it, and how it will or may be used.

4. I understand that if there is any revelation of unlawful activity or any indication of non-medical circumstances that would or has put others at risk, the University may refer the matter to the appropriate authorities.

5. I have been told that I may at some time in the future be contacted again in connection with this or another study

6. I declare that I am an appropriate person to give consent on his/her behalf, and that I am aware of my responsibility for protecting his/her interests.

Signature of person giving consent

…….. Date……

Relationship to participant

.....

Signature of (principal) investigator

.....Date……

Name of (principal) investigator *[in BLOCK CAPITALS please]*

.....

University of Hertfordshire UH Ethics Committee

UNIVERSITY OF HERTFORDSHIRE

ETHICS COMMITTEE FOR STUDIES INVOLVING THE USE OF HUMAN PARTICIPANTS ('ETHICS COMMITTEE')

FORM EC6: PARTICIPANT INFORMATION SHEET

1 **Title of study** - Will an Adult-Led Intervention Programme Increase the Attention and Listening Skills of Children who are Deaf?

2 **Introduction**

Your child is being invited to take part in a study. Before you decide whether your child should participate it is important that you understand the research that is being done and what your child's involvement will include. Please take the time to read the following information carefully and discuss it with others if you wish. Do not hesitate to ask us anything that is not clear or for any further information you would like to help you make your decision. Please do take your time to decide whether or not you would like your child to take part. The University's regulations governing the conduct of studies involving human participants can be accessed via this link:

http://sitem.herts.ac.uk/secreg/upr/RE01.htm

Thank you for reading this.

3 **What is the purpose of this study?**

- In this research methods and dissertation module students are invited to present a dissertation; this could be a programme of research to include a case study. The study will provide students with the opportunity to understand how a hearing impairment impacts on the development of a young child. Students will be able to develop the skills around effective assessment and management of needs and how strategies around attention and listening can be adapted and modified to meet the individual needs of a child within a setting/school environment.

4 **Does my child have to take part?**

- It is completely up to you whether or not you decide for your child to be part of this study. If you do decide that your child may take part, you will be given this information sheet to keep and be asked to sign a consent form. Agreeing for your child to join the study does not mean that they have to complete it. You are free to withdraw your child from the study at any stage without giving a reason. A decision to withdraw at any time, or a decision not to take part at all, will not affect any treatment/care that your child may receive (should this be relevant).

5 **Are there any age or other restrictions that may prevent my child from participating?**

- To participate in this study your child needs to be in the school cohort year 2014/15 at Tany's Dell Primary school and be receiving input from a Teacher of the Deaf for a hearing impairment.
- Your child needs to have attended and Early Years nursery or preschool prior to starting in the reception class.

6 **How long will my part in the study take?**

- If you decide your child can take part in this study, you will be involved in it from October 2019 until the end of April 2020.

7 **What will happen to my child if they take part?**

- Your child will be observed in the early years setting and be part of an adult-led intervention group now they have started school. This intervention will take place weekly over a period of 6-8 weeks with the focus being on building attention and listening skills.

The notes will be analysed and written up as part of my dissertation. Your child will not be identifiable in any of the write ups of this research.

8 **What are the possible disadvantages, risks, or side effects of taking part?**

- This intervention will be carried out within the school day and the investigator is a professional who works in the field of Early Years and deafness and therefore has experience of working in partnership with children and families.
- If you are not happy for your child to continue in the study at any point, you are free to withdraw your child without giving a reason.

9 **What are the possible benefits of taking part?**

- The children may develop their attention and listening skills through taking part in the programme. There will be opportunities to develop their turn taking and sharing skills, building friendships.

10 **How will my taking part in this study be kept confidential?**

- All data (information) collected during the case study research is for the purpose of this dissertation alone. Data will be anonymised at source and stored in password protected laptops /computers. All documents will be password protected in accordance with the data protection procedures of the researcher's employer. Personal data will be kept for the duration of the study and until the programme award is conferred
- Only the researcher will have access to the data, and this will be analysed, and key themes identified in the results section of the research.
- Hard copies will be scanned onto the computer and stored in a password protected folder. The hard copies will then be shredded.

11 **What will happen to the data collected within this study?**

11.1 All documents will be password protected in accordance with the data protection procedures of Essex County Council.

.

11.2 Any personal data and assessments gathered during the intervention programme will be anonymised prior to storage. They will be kept securely for the duration of this study and until the programme award is conferred

12 **Will the data be required for use in further studies?**

- The data will be anonymised and will not be used in further studies .

13 **Who has reviewed this study?**

- This study has been reviewed by:
  The University of Hertfordshire Social Sciences, Arts and Humanities Ethics Committee with Delegated Authority

- The UH protocol number is EDU/PGR/CP/04357 - approved by the Social Sciences, Arts and Humanities ECDA.

14 **Who can I contact if I have any questions?**

- If you would like further information or would like to discuss any details personally, please get in touch with me, in writing, phone or by email:
  Susan Ingram
  Preschool Specialist Teacher
  Goodman House
  Harlow
  Essex
  CM20 2ET
  Mobile: 07786125466
  susan.ingram@essex.gov.uk

Early Years and Deafness
Mary Hare affiliated to University of Hertfordshire

Although we hope it is not the case, if you have any complaints or concerns about any aspect of the way you have been approached or treated during the course of this study, please write to the University's Secretary and Registrar.

De Havilland Campus
Mosquito Way
Hatfield
AL10 9EU

Thank you very much for reading this information and giving consideration to taking part in this study.

Appendix 2 – Unstructured Observations and Notes
Observation Proforma

Name: C1

Date: November 2019

Activities the child accessed during free flow.	Where is the child looking and who are they looking at?	Does the child join/initiate conversation?	What does the child say/do?	What questions does the child ask and who responds to them?
Play dough	C1 Shifted attention from peers to an adult and rolled the dough with hands to make a snake.	Joined in the conversation but was not always aware when other children were still talking	Spoke about the snake that C1 had made with the dough	Made statements rather than ask questions.
Counting the Strawberries in the basket	Gaze from object to object and adult to object	Will initiate conversation by talking about something such as I like…….	Counted the strawberries as they were put in the basket	What do I do? – not sure what to do with the strawberries. Looked up when the whiteboard screen came on suddenly.
Creative Table – cutting out a shape	Need to be shown how to hold the paper and cut with the scissors. The TA showed C1 how to do it, but C1 continued to look at the paper rather	No – sat and concentrated on cutting.	Continued to cut out the shape on the paper	No questions asked

	than looking at the TA first.			
Carpet time before snack	Sat on carpet in allocated space and looked at the teacher.	When the other children were going out to wash their hands C1 suddenly spoke about 'going on a bear hunt'	Talk about something that is familiar. Can I have……	Did not ask any questions during this time.

Notes

- When C1 got distracted, C! brought self-back to the task in hand.
- During free flow C1 can shift eye gaze 3 way consistently
- Glanced back at me when he left the strawberry counting and went over to the dough
- Gains attention from an adult by talking or answering a question asked to a peer
- Can shift eye gaze from child to object although will not always look at an adult but head will remain bowed
- Can follow an instruction
- Will refocus back from a distraction
- Will look at an adult intermittently for reassurance
- Will talk suddenly 'out of the blue' about something familiar to gain attention
- Talk is meaningful and is understandable but at times is not linked to the current situation

Observation Proforma

Name: C2

Date: November 2019

Activities the child accessed during free flow.	Where is the child looking and who are they looking at?	Does the child join/initiate conversation?	What does the child say/do?	What questions does the child ask and who responds to them?
Stamping using ink pads	Very focused on own paper and stamps. Very protective and did not want to share with peers. Any sharing was done on own terms.	No language but did use some gestures to tell peers 'no'	Gathers all the items that C2 wants and keeps them close. Will make some vocal noises if someone tries to take something that C2 has. Did share the paper with a friend and got a chair for a friend to sit on.	No questions but will tell others in own way what to do. At times C2 is controlling the situation in a nice way. Key Worker had to step in a couple of times to encourage sharing. Did look up when an adult asked 'what are you making?'
Washing hands before snack	Running to go and wash hands before snack.	C2 went alone	Tripped up the step as came back and glanced at an adult.	No questions asked
Snack	Did look at an adult for lunch box, it had been placed on the table – C2 sat at the table to eat.	When a peer went to open their drink, C2 shook head as if to say 'no' to another child.	Touched the other child's lunch box and then used the thumbs up gesture. Picked up a packet of crisps and showed them to an adult and said 'not yours' Signed 'eat' to another child.	No questions asked

Visit from the Firemen (getting in the Fire Engine)	Sat on the grass with the other children and watched as the fireman told them about the engine.	C2 edges way to the front when they were asked to line up so they could climb up into the engine.	The children were helped to climb up into the engine one side and then get out of the other side and sit on the grass and wait. C2 climbed up into the engine got out and tried to go around again for another go.	No questions

- Learnt some social norms to get by with interacting with others, some are acceptable, and some need further understanding
- Struggles to share and will get upset if does not get what wants
- Looks at an adult and then back at what C2 is doing as if waiting for a response
- Fiddles with objects quite a lot, but interaction is not always meaningful
- Uses physical contact to attract others attention such as touching
- Will squabble with peers to keep hold of what C2 has got when playing
- Appears to understand but this could be questionable at times
- Will follow what others are doing
- Can look intently at an adult if there is something, C2 wants
- Can get confused with the boundaries
- Shows empathy and knows when someone is hurt
- Follows the routines through watching others
- Does give some eye contact and has a particular friend in nursery
- Makes a screech sound at times
- Thinks that whenever someone comes in, they are there for C2.

Appendix 3 –Structured Observations and Notes

Tally Chart used to gather the children's attention initiations during implementation of the intervention programme

	Child	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Shift Attention - Adult to Object – 2 way	C1	///// ///// ///// /// (3)	///// ///// ///// /// (3)	///// ///// ///// //// (3)	///// ///// ///// ///// (3)	///// ///// ///// ///// / (3)	///// ///// ///// ///// / (3)	///// ///// ///// ///// // (3)
	C2	//// (1)	//// (1)	///// //// (2)	///// ///// ///// (2.5)	///// ///// ///// (2.5)	///// ///// ///// /// (2.5)	///// ///// ///// /// (2.5)
Shift Attention - Adult to Object to Adult – 3 way	C1	///// ///// ///// // (3)	///// ///// ///// // (3)	///// ///// ///// /// (3)	///// ///// ///// // (3)	///// ///// ///// //// (3)	///// ///// ///// //// (3)	///// ///// ///// ///// (3)
	C2	/// (1)	//// (1)	//// (1)	///// /// (2)	///// ///// ///// / (2.5)	///// ///// //// (2)	///// ///// ///// // (2.5)
Distracted (looking away from an adult at something else around them)	C1	// (1)	// (1)	/ (1)	///// / (2)	///// / (2)	// (1)	/ (1)
	C2	///// // (2)	///// / (2)	///// // (2)	///// / (2)	//// (1.5)	//// (1.5)	/// (1)
Self-Regulation (did the fidget and able to bring themselves back to the activity) 3 = able to self-regulate	C1	///// / (2)	///// / (2)	///// / (2)	///// ///// / (3)	///// /// (2)	///// ///// / (3)	///// ///// // (3)
	C2	// (1)	//// (1.5)	///// (1.5)	///// // (2)	///// // (2)	///// /// (2)	///// ///// // (3)
Attentive (did they follow the routine and clues such as pointing, were they watching the adult when talking)	C1	///// ///// ///// /// (3)	///// ///// ///// //// (3)	///// ///// ///// //// (3)	///// ///// ///// /// (3)	///// ///// ///// ///// (3)	///// ///// ///// ///// (3)	///// ///// ///// ///// ///// / (3)
	C2	//// (1)	///// /// (2)	///// //// (2)	///// //// (2)	///// //// (2)	///// /// (2)	///// //// (2)
Responsive (did they follow instruction and ask questions)	C1	///// ///// / (2)	///// ///// /// (2)	///// ///// /// (2)	///// ///// //// (2)	///// ///// //// (2)	///// ///// ///// //// (3)	///// ///// ///// /// (3)

	C2	//// (1)	///// /// (2)	///// //// (2)	///// ///// / (2)	///// ///// // (2)	///// ///// ///// (2.5)	///// ///// ///// (2.5)
Ask Questions	C1	/// (1)	//// (1)	///// (1.5)	///// (1.5)	///// (1.5)	///// (1.5)	///// (1.5)
	C2	/// (1)	/// (1)	/// (1)	///// (1.5)	///// (1.5)	///// (1.5)	///// (1.5)

Attention

Notes from Structured Observations focusing on attention

Session 1 - Flour Faces	C1	reluctant to put fingers in the flour and used eye gaze looking at the flour and back at an adult to see if it was ok to do. He did take part in the activity but with a little encouragement
Zoom Zoom/incy Wincy	C2	Continually trying to gain an adult's attention at times when not always meaningful to the task in hand
	C2	Is eager to learn and communicate, has just started to pick up signing and picking up signs quickly
	C2	Signed spider when arrived at the group and when saw the spider in the box
	C2	Got distracted with the balloon and where it went so come and stood next to me to try and gain my attention again - kept pointing to where it had gone
Session 2 - What's in the bucket	C1	Needed reengaging a number of times during the session - just needs a reminder
Zoom Zoom/Old Mac	C2	Needed reengaging a number of times during the session - reminder and signing needed
	C2	Some distractions with the objects - needs reminding to refocus
	Misc	C1 asked are we going to have the rocket today and C2 signed rocket and balloon
Session 3 - Kim's Game	C1	A bit fidgety this week but they had just sat in an assembly - It was obvious that they had never played this game before as they did not know what to do
Zoom Zoom/Old Mac	C2	As C1 and C2 cried when someone took the horse finger puppet for Old Mac song and come and stood next to me and needed to be encouraged to have a different animal when chose the cow C2 smiled. Can do the sounds for cow, horse, pig, chicken
	Misc	Both children are beginning to know the routine and immediately they arrive are asking for the Zoom song. Both are having moments of shifting eye gaze C1 more than C2. Very fidgety today but they had come straight

		from assembly and there was a lot of other things going on around them today.
Session 4	C1	Sat in the circle gave good eye contact looking round the circle at the other children and shifted eye gaze from adult to object and back again. He took part in the tapping of the triangle but did not really join in the songs. He did drift off a couple of times
Triangles	C2	Followed what needed to happen
Twinkle Twinkle	C2	During the free play there were a number of attempts made to interact, but the play was controlling so getting the adult to do what C2 wanted and when the adult tried to offer more of a lead C2 moved away, although C2 would come back to try and control again. Did some drawing on the board drawing a caterpillar and butterfly and did get upset when another child rubbed them out. Uses signs but not sure if C2 always knows what sign is for what object as will not always focus enough due to looking at peers to learn individually.
Session 5 - Clothes and drumming	C1	Took part in putting the clothes on the board could name some of the clothes but does not use voice or sign consistently. He asked questions about the rocket 'are we going to do the rocket?' and asked where the balloon went the previous week when it flew off. He asked did it go a 'long way' Needs lots of encouragement to join in with both singing and actions to the songs - Vocabulary appears limited and speech can be unclear at times.
(following instruction) Row Row your Boat/Old Mac	C2	Uses lots of different signs but some are unclear so makes it hard to understand C2. Did the sign for rocket – this is a very visual song. Needs encouragement to join in with both actions and using voice if C2 wants something C2 will come and stand next to you.
Banging the drum		
Session 6	C1	Managed to take turns in the session but tends to look down when didn't understand or want to join in e.g. signing the actions for the songs will use voice rather than sign - Found the counting of the beats of the drum quite difficult and needed attention to watch and adult who supported this so the skill of watching and listening and copying. Could identify between the drum and the bell. Will not always make eye contact
Sorting eating or wearing it		
Drumming copy the beat	C2	Could follow the beat with some help in counting but soon picked it up and watched carefully - with the eat or wear it got it mixed up at times if you sign eat or wear will copy what you do so depends in which order you sign it to whether it is right or not - Will not wait for the answer or end of an instruction e.g. when going back to the class will not look back to wave goodbye.
Songs as week 5		

Session 7	C1	Could follow the same and different for the pairs game but struggled to follow the drumming and counting the beats of the drum - Signed the song at the end today which shows that the repetitiveness and extension to the sessions is key to development.
Pairs - same and different Drumming listening to the sound Singing row row your boat/zoom zoom zoom	C2	Will follow the routine but is still copying the signs rather than using them meaningfully - did sign same when held up two cards the same but then added the different on the end. Will work out how to do something or what will help to do what is needed to do e.g. looking at the picture through the back of the card. Would not maintain focus to see the end of the sign so would miss the end further work on maintaining eye shift is needed but good at the beats of the drum although could not distinguish the different sounds of the instruments when there was more than one.
Comments		Both learnt the routine of the session this was shown by them reminding me at certain times when I had missed something out e.g. goodbye at the end - TA comment that she had seen development over the session and will be implementing a short programme for the children to help them develop further.

Tally Chart used to gather the children's listening initiations during implementation of the intervention programme								
	Child	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**	**Week 7**
Follows a 2 - keyword instruction	C1	///// //// (2)	///// ///// (2)	///// ///// // (2)	///// ///// // (2)	///// ///// //// (2)	///// ///// ///// (2)	///// ///// ///// / (2.5)
	C2	// (1)	// (1)	// (1)	//// (1)	///// /// (2)	///// /// (2)	///// //// (2)
Follows a 3 - keyword instruction	C1	// (1)	// (1)	/// (1)	/// (1)	// (1)	/// (1)	// (1)
	C2	(0)	(0)	// (1)	/// (1)	// (1)	/// (1)	/// (1)
Plays with Sounds	C1	// (1)	/// (1)	/// (1)	///// (1.5)	///// / (1.5)	///// (1.5)	///// (1.5)
	C2	//// (1)	//// (1)	//// (1)	///// / (1.5)	///// ///// /// (2)	///// ///// ///// / (2)	///// ///// ///// / (2)
Joins in the songs and rhymes (following actions)	C1	// (1)	// (1)	/// (1)	///// (1.5)	///// (1.5)	///// (1.5)	///// (1.5)
	C2	//// (1)	//// (1)	/// (1)	///// // (1.5)	///// ///// /// (2)	///// ///// ///// (2.5)	///// ///// ///// (2.5)
Can distinguish sounds	C1	///// // (2)	///// // (2)	///// //// (2)	///// ///// (2)	///// /// (2)	///// ///// (2)	///// ///// / (2)
	C2	/// (1)	//// (1)	//// (1)	///// /// (2)	///// /// (2)	///// /// (2)	//// (1)
Initiate conversation	C1	///// // (2)	///// ///// (2)	///// ///// (2)	///// ///// / (2)	///// ///// //// (2)	///// ///// ///// / (2.5)	///// ////// ///// / (2.5)

	C2	//// (1)	//// (1)	///// /// (2)	///// /// (2)	///// /// (2)	///// //// (2)	///// ////

Listening

Session 1	C1	No spontaneous joining in of the session - followed instruction and took part in the activity with some reluctance
	C2	No spontaneous joining in of the session
Session 2	C1	Joined in the song using some hand actions for the rocket and the animal puppets made the noises
	C2	Joined in the song using some hand actions for the rocket and the animal puppets made the noises
Session 3	C1	Are we going to do the rocket today? Made the noises of the animals for Old Mac/Where is the pencil and where is the green pencil. He repeated the word green and needs lots of encouragement to join in using signs or actions.
	C2	Sign for rocket when arrived/ Made the noises of the animals for Old Mac/still needs encouragement to make the noises and join in/needs the visual clues and singing to support the language being used.
	Misc	The game was new to the children and it was only towards the end of the game that they started to get the hang of it. Both struggled with the smaller objects missing
Session 4	C1	Was reluctant to join in the song but no visuals
	C2	Used clues from peers during the session and will initiate with an adult but wants to control the situation.
Session 5	C1	Needs encouragement to join in the session using voice and actions to songs. Did initiate using questions about the rocket.
	C2	Sign for rocket when arrived/ Made the noises of the animals for Old Mac/still needs encouragement to make the noises and join in/needs the visual clues and singing to support the language being used.
Session 6	C1	Continues to follow the routine of the session and can pre-empt what is going to happen next Both children particularly like the rocket song so this has been included at the end of the singing section regularly. Knows the session and is ready to join in still needs encouragement to use signs and make the sounds of the animal but can count the beats of the drum and it is developing the copying of the beats on the drum. Can tell me the difference between the drum and the bell
	C2	when covering eyes.
Session 7	C1	At times needs reminding to focus on what is happening and will tend to fiddle with items that are close - gives the impression that knows what?? Is doing but when it comes to it not always so sure.
	C2	Using the sound of the animals more spontaneously but will not use the name of the animal e.g. sheep tends to be 'baa' and cow

'moo'.

C2 Will pick up on clues very quickly to help complete a task. Will use hands to sign but the signs are not always linked to words, so they do not make sense to others. Signing needs developing

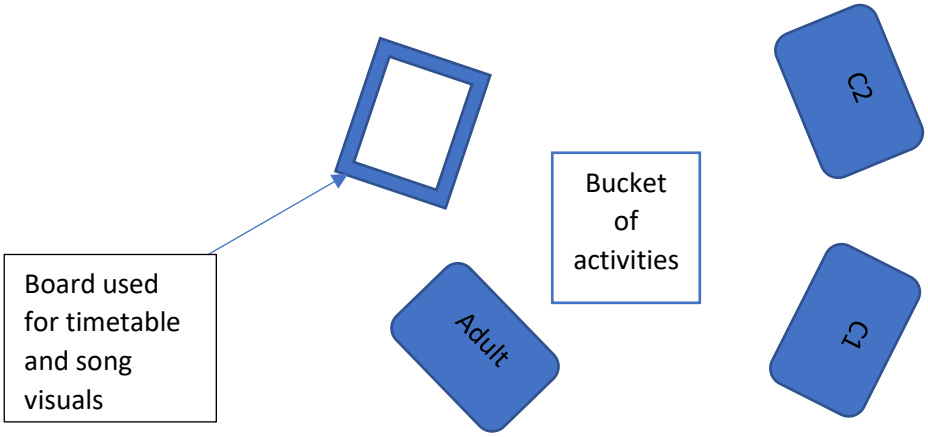
Appendix 4 – Plan of Activities

Attention and Listening Skills	**Rules of the Group – Good listening, sitting and looking – Visuals to support the rules**				**What are we working on?**
Be	**Beginning**	**Middle**		**End**	
Wow Toy	**Hello/Good Morning Song,**	**What's in the box/bucket or bag – Use whiteboard to draw what you are doing today.**	**Song – Action songs link into the Ling Sounds**	**Goodbye**	**What does achievement look like?**
Week 1	**Learning Objective – Attention and Turn Taking**				
Flashing Balls – use body language and gestures to make them look interesting- use voice and signing	Visuals/Signing and syllable clapping/body tapping to names.	**Flour Faces** • Black paper • Flour • Sieve	**Incy Wincy/Zoom, Zoom, Zoom** Visuals/objects for songs	Pass a smile around the circle – say goodbye to everyone.	
Week 2	**Learning Objective – Looking, Listening, Thinking and responding**				
Rotor Wand - use body language and gestures to make them look interesting- use voice and signing	Visuals/Signing and syllable clapping/body tapping to names.	**What's in the bucket** • **Bucket** • **Toys/objects**	**Zoom, Zoom, Zoom/Old Mac** Visuals/objects for songs – finger puppets/balloon pump and balloon.	End by having the children pass the bells round the circle as quietly as possible.	
Week 3	**Learning Objective – Looking, Listening, Thinking and responding**				
Flashing Balls- use body language and gestures to make them look interesting- use voice and signings	Visuals/Signing and syllable clapping/body tapping to names.	**Kim's Game** • **Tray** • **Objects e.g. car, brick, pencil start with 5 items and gradually increase.** • **Cloth to cover the tray.**	**Zoom, Zoom, Zoom/Old Mac** Visuals/objects for songs – finger puppets/balloon pump and balloon.	Pass a smile around the circle – say goodbye to everyone.	
Week 4	**Learning Objective – Attention and Listening**				
Rotor Wand- use body language and gestures to make them look interesting- use voice and signings	Visuals/Signing and syllable clapping/body tapping to names.	**Musical Instruments** • Selection of Instruments (Drum) Listening to number of beats and pass on	**Zoom, Zoom, Zoom/Row your Boat** Visuals/objects for songs.	End by having the children pass the bells round the circle as quietly as possible.	
Week 5	**Learning Objective – Looking, listening, thinking and responding**				
Flashing Balls- use body language and gestures to make them look interesting- use voice and signings	Visuals/Signing and syllable clapping/body tapping to names.	**Turn Taking** • **Identifying clothes** • **Counting the drumbeats**	**Row, Row, Row your Boat/Old Mac** Visual – finger puppets	Pass a smile around the circle – say goodbye to everyone.	

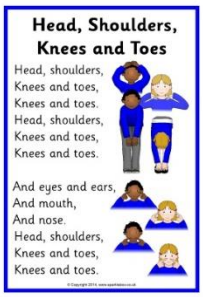
Week 6	**Learning Objective – Attention and Listening**				
Rotor Wand- use body language and gestures to make them look interesting- use voice and signings	Visuals/Signing and syllable clapping/body tapping to names.	**Musical Instruments** • Sorting eating and wearing • Beats of the drum and sound of the bell	**Zoom, Zoom, Zoom/Row your Boat** Visuals/objects for songs.	End by having the children pass the bells round the circle as quietly as possible.	
Week 7	**Learning Objective – Attention and Listening**				
Flashing Balls- use body language and gestures to make them look interesting- use voice and signings	Visuals/Signing and syllable clapping/body tapping to names.	**Turn Taking/Musical Instruments** • Animals Pairs Game • Beat of the drum • Identifying sounds	**Row, Row, Row your Boat/Zoom, Zoom, Zoom** Visuals/objects for songs	Pass a smile around the circle – say goodbye to everyone.	

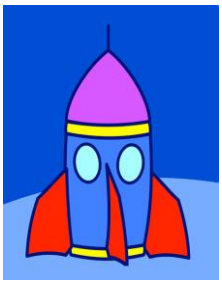
Appendix 5 – Layout and Samples of Visuals

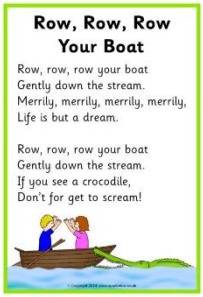
Systematic Drawing of the layout for the delivery of the intervention programme

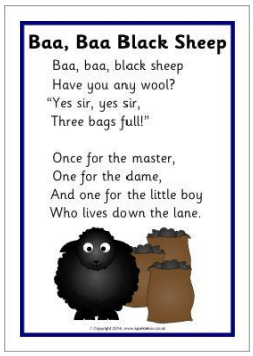


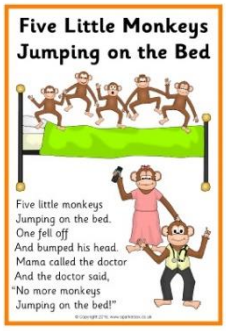
Photos of visuals for the songs











SparkleBox Teacher Resources Limited (2018) Nursery Rhyme Resources. Available at: https://www.sparklebox.co.uk/ [Accessed: 23.09.19].

Samples of Props and visuals

Widget (2019) Widget Software. Available at: https://www.widgit.com/products/widgit-online/index.htm [Accessed: 23.09.19].