

Sign Bilingualism and Arabic Literacy: Using PVR with Deaf Girls in Saudi Arabia

A thesis submitted to University College London

for the degree of

DOCTOR OF PHILOSOPHY

by

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April 2017

Declaration

Declaration

I, Najwa Abood Salih Basonbul, confirm that the work presented in this thesis is my own. Where parts have been derived from other sources, I confirm that this has been fully acknowledged in the thesis.

Najwa Abood Basonbul

April 2017

Signed declaration

Dedication

To the pillars of my life: my parents, my husband, my three children, my brothers, my sister and my friends.

My Parents

You have given me so much. Thank you for your faith in me and for teaching me that I should never surrender. You always told me to be inspired in everything I do.

My Husband

Mohammed, you are everything for me. Without your love and understanding I would not have been able to make it through our eight years of scholarship in the United Kingdom.

My Children

You have successfully made me the person I am becoming. You are my inspiration and my reminder to stick to the task at hand

My Brothers, Sisters and Friends

We made it!

Acknowledgments

I thank my supervisors, Prof. Bencie Woll and Prof. Jim Kyle for their great help and kindness at a difficult time and for sharing the burden of my research; without them, this thesis would never have happened.

I would also like to thank the staff and colleagues at the Deafness, Cognition and Language Research Centre and the Centre for Deaf Studies. The support of all these people over the past five years has made this thesis possible.

We are grateful to the Saudi Ministry of Education for facilitating our task, as well as the schools' administration, teachers, Deaf assistants, pupils and their parents who generously gave their time to our research study. Special thanks to our excellent research assistants, who acted for us in conducting the pilot study in male Deaf and hearing schools.

We would like to thank the funder of this thesis, the Institute of Graduate Educational Studies at King Abdul-Aziz University, Saudi Arabia, which aims to prepare and develop teachers, educators, researchers, specialists and leaders of education according to the community's needs and in line with international standards.

Najwa Basonbul

List of abbreviations

ArabicSL	Arabic Sign Language
ARMD	Arabic Reading Measure for Deaf
dB	Decibel Hearing Level
GASE	General Administration of Special Education
MSA	Modern Standard Arabic
PVR	Preview-View-Review strategy
SaudiSL	Saudi Sign Language
SBE	Sign Bilingual Education approach
SE	Signed English
SSA	Sign Supported Arabic
T1	Test 1
T2	Test 2
TC	Total Communication
UK	United Kingdom
USDB	Urban School for Deaf Boys
USDG1	Urban School for Deaf Girls 1
USDG2	Urban School for Deaf Girls 2
USHB	Urban School for Hearing Boys

Glossary

Term	Definition
ArabicSL	<p>ArabicSL is a new artificial language which uses vocabulary taken from a variety of Arab sign languages, including Saudi Sign Language, Jordanian, Yemeni and Egyptian Sign Language and so on. The vocabulary was collected in the Unified Arabic Sign Language Dictionary (UASLD) by the Council of Arab Ministers of Social Affairs, a committee within the League of Arab States.</p> <p>ArabicSL is used by hearing people and young Deaf children.</p>
Deaf/deaf	<p>When capitalised, 'Deaf' refers to those adults who lost their hearing at an early age and are considered part of the Deaf community. Uncapitalized, 'deaf' denotes those individuals with hearing impairment who do not consider themselves members of the Deaf community; they are sometimes described as 'defective' or 'handicapped'.</p>
First teacher	<p>A resident supervisor teacher at a school.</p> <p>First teachers are closer to members of the school's administration and educational supervisors. They are responsible for creating the academic plan to improve teachers' performance in their respective fields.</p>
Hard-of-hearing pupils	<p>They are non- culturally deaf; with a hearing level of 35-69 dBHL (mild-moderately severe) (Management of Auditory Handicap, 2017).</p>
Literacy	<p>Refers to 'the ability to read, write, and [possess] the knowledge to apply critical thinking skills to the written word' (Deafwebsites, 2013).</p> <p>It is the Deaf pupils' ability to use reading, writing, listening and speaking to make sense of the symbols and demonstrate knowledge of short sentences.</p> <p>There are three levels of literacy in sign language, where Deaf pupils can (1) make sense of sign language, (2) appreciate and recognize the cultural significance of the literature of sign language and (3) critique the literature of sign language and use it to show awareness of the Deaf world in relation to other worlds.</p> <p>Deaf people use a variety of methods not used by hearing readers, who read phonemically. They do not have sound to assist them learn to read as hearing people do.</p>
Oralism	<p>A method of teaching Deaf pupils by using lip-reading</p>

	and speech rather than sign language
Primary, secondary and high schools	In Saudi Arabia, primary school is from Grade 1 to 6; secondary school is from Grade 7 to 9 and high school is from Grade 10 to 12.
Reading teacher	In Deaf schools in Saudi Arabia, reading teachers teach phonics, religious studies or sciences In secondary and high schools they must be specialists in Arabic, as they need to teach advanced compounds of Arabic.
Referencing Arabic websites	In referencing Arabic websites, the date of publication is given in parentheses and the date of online access to the source is in square brackets. For example: Al-Qahtani, S. (2014) تاريخ تعليم الصم في السعودية (2014) [<i>The history of deaf education in Saudi Arabia</i>] [Whats App interview by N. Basonbul] Saudi Arabia, 16 February 2014.
SaudiSL	SaudiSL is a natural development which is used by the Saudi Deaf community. However, it has gender dialects i.e., Deaf girls are taught different signs from Deaf boys in Saudi schools for Deaf pupils. Teachers have little contact with SaudiSL; they only use self teaching of Arabic signs vocabulary.
Simultaneous communication	The speaker uses manual signs at the same time as speech. This involves the use of different types of sign systems simultaneously with spoken language, such as sign-supported Arabic.
Sign bilingual education	Sign bilingual education is a new approach involving the introduction of sign language and Arabic language in class.
Sign-supported speech	It is one of the simultaneous methods, which uses sign in the spoken word to clarify the spoken message or key words but it is not necessary to sign every word in the spoken utterance (Lynas, 1994: 36-37).
Special education	A universal concept that includes a set of programmes, plans and strategies specifically designed to meet the needs of pupils with special needs, including teaching methods, tools, special equipment and support services.
Total communication	The use of all suitable communication modes—aural, manual and oral—to communicate effectively with and among hearing-impaired people. It refers to the use of all forms of communication: finger spelling, lip-reading, sign, speech, gesture, facial expression and hearing modalities.
Preview-View-	A strategy for teachers and assistants to use which

Review	involves preparing the understanding of a text through the child's native language) before examining the text itself and then finally reviewing the knowledge and interpretation of the text again in the child's native language.
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Award

Basonbul, N. & Kyle, J. (2015) Sign Bilingual Innovation in Saudi Arabia: Introducing Signing for Arabic Literacy in a Saudi Deaf Girls School. A special award for the presentation poster from *the 2nd International Conference on Sign Language Acquisition (ICSLA)*, Amsterdam, the Netherlands.

Presentations

Basonbul, N., Kyle, J. & Woll, B. (2016) Signs of Progress: Issues in Innovation in a Girls Deaf School in Saudi Arabia. A poster for *the 9th Saudi Students Conference*, University of Birmingham, at the International Convention Centre, Birmingham, United Kingdom.

Basonbul, N. & Kyle, J. (2015) Sign Bilingual Innovation in Saudi Arabia: Introducing Signing for Arabic Literacy in Saudi Deaf Girls School. A poster for *the 2nd International Conference on Sign Language (ICSLA)*, University of Amsterdam, Netherland.

Basonbul, N. (2015) Deaf Progress in Reading Arabic by Applying the Sign Bilingual Strategy. A poster and oral presentation at *the Annual PG Poster and Presentation Symposium*, University College London, United Kingdom.

Basonbul, N. (2015) Effectiveness of Applying a Sign Bilingual Strategy in Improving Arabic Literacy with Saudi Deaf Girls. A poster at *the 8th Saudi Students Conference*, King Abdullah University of Science and Technology (KAUST), hosted by Imperial College London, United Kingdom.

Basonbul, N. (2014) Working with Deaf Children: Overcoming the Initial Challenges. A paper delivered at *the Wales and South West England Social Work Doctoral Conference*, Swansea University, United Kingdom.

Basonbul, N. (2014) Improving Reading in Arabic by Applying Sign Bilingual Methods. A poster for *the 7th Saudi Students Conference*, Islamic University of Imam Muhammad bin Saud, hosted in the United Kingdom by the University of Edinburgh.

Basonbul, N. (2013) From Isolation ... to Integration, *Conference of International Day of Disability (Towards a Less Restrictive Environment)*. Held 2nd December 2013 at King Abdul-Aziz University, Saudi Arabia, Jeddah.

Abstract

Despite many decades of educational efforts worldwide, Deaf people often do not develop spoken and written language satisfactorily. Now, harnessing the language that Deaf family members naturally develop promises progress in both sign language and community language literacy. Sign bilingual education (SBE) has developed in several countries but has not been applied formally in Saudi schools for Deaf pupils. This exploratory, sequential, mixed-methods study introduced SBE, applying the preview-view-review (PVR) strategy as a bilingual approach for literacy in a Saudi school for Deaf girls. Five hearing teachers, two Deaf assistants and 17 Deaf pupils participated. Data were collected via a newly developed Arabic Reading Measure for Deaf pupils (ARMD), semi-structured interviews, observations, documents and personal records. The first phase of the study was an ethnographic evaluation of teaching strategies for Deaf pupils and their reading levels, to identify the hearing teachers' level of sign language and to observe interaction in the school. The second phase was quasi-experimental, applying PVR to pupils' reading strategies and performance. This required the development of a new reading test in Arabic for Deaf pupils. The third phase examined how SBE could be applied in Saudi Deaf education and elicited teachers' and assistants' views of its application. Following the 30-week intervention, reading performance improved, but several factors were found to limit this improvement. Among themes raised by teachers were compartmentalised application of SBE and low expectations of pupils' performance. Deaf assistants recognised the importance of improved professionalism and commented on the competence of teachers, by whom they felt exploited. Classroom observation revealed the ineffectiveness of teachers' mixing of vernacular and formal Arabic. The findings suggest that Saudi Deaf education should more systematically apply methods supported by effective measurement of pupil performance. This study adds to knowledge of hearing teachers' relationships with Deaf people in schools and has policy implications.

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Prologue

Learning to read is challenging when that pupil does not understand the speech of the teacher, when they do not have a well-developed first language. Despite a great deal of research, the most effective means of teaching reading to Deaf¹ pupils has yet to be established. It is also not yet fully known why some Deaf readers succeed to a greater extent than others (except in the correlation with extent of hearing loss).

Deaf education in Saudi Arabia is currently based on the 'deficiency' perspective (i.e. deafness as an impairment). Within this framework, the methods of Oralism and Total Communication (TC) have not been shown to succeed in improving Deaf literacy skills.

In many countries, there has been a reaction against traditional methods, marked by the adoption of sign bilingual education (SBE), i.e. the use in education of two languages—the sign language of the Deaf community and the written language of the hearing community—and by the provision of access to two cultures: Deaf and hearing (Gregory 1996). In the Saudi Arabian context, this would mean the use of Saudi Sign Language (SaudiSL) and Arabic, and access to communication with Deaf adults; but SBE has not yet been practised officially in Saudi schools for the Deaf. The project reported in this dissertation involved the introduction of SBE, focusing on literacy for Deaf pupils.

My journey to this point has been shaped by

- my experience as a teacher of Deaf and hard-of-hearing pupils in mainstream primary schools in Saudi Arabia;
- my postgraduate and professional experience in academia, as a lecturer in Hearing Impairment at a university in Saudi Arabia;
- my contact with Deaf people and my learning of sign language.

¹It is often suggested that all those with a hearing loss be termed 'deaf'. Such an approach creates a very large group of people, many of whom have minor or temporary hearing losses. In this thesis, I use Deaf to refer to people who are members of the Deaf community, who use sign language and express a Deaf identity. Pupils in Deaf schools tend to fall into this category, so I use Deaf throughout to refer to this cultural and linguistic minority. Despite the fact that the Deaf school does not implement bilingualism it is still the place where Deaf identity develops.

After finishing my undergraduate studies in psychology, which included courses in Arabic and English language, I spent a year as a volunteer at a Centre for Special Care in Saudi Arabia, working with pupils with special educational needs, including some who were Deaf or hard of hearing, some who had delays in Arabic literacy and others who had communication disorders.

My first post was in a primary inclusive school for Deaf and hard of hearing pupils, most of whom had a low level of literacy. I had no Deaf education training and my sign language skills were limited, but I became closely involved with Deaf pupils. I learned that there was a disagreement among hearing teachers of the Deaf² regarding the correct approach to teaching. Some believed that using sign language was more appropriate, while others favoured the TC method, which in the Saudi context meant sign-supported Arabic (spoken Arabic accompanied by signs) and fingerspelling with Arabic speech. My role in this school was teaching Deaf and hard-of-hearing pupils in reading, writing, some religious subjects such as monotheism and jurisprudence, and training them to speak.

The General Administration of Special Education (GASE) believed that use of sign language would prevent Deaf pupils from learning spoken language. Although oralist methods were mostly used in the school, I began learning sign language from the pupils themselves, in order to be better equipped to communicate with them, and enrolled in various training courses to strengthen my teaching skills.

Despite the teachers' efforts to teach literacy to Deaf pupils, successes were limited. The pupils were trained to correctly articulate words appearing in written texts, rather than to develop reading comprehension. There was no interaction between the schools for the Deaf and the Deaf community; even today, there has been no systematic programme of training in SaudiSL for teachers, Deaf pupils and their parents or anyone interested in learning sign language.

Since my involvement in Saudi Deaf education began in 2003, I have become aware of the conflict between SaudiSL, which is the sign language used by the

² No Deaf teachers were in the school.

Saudi Deaf community, and ArabicSL, an sign language with a pan-Arab vocabulary that is used by hearing people and young Deaf pupils and whose lexicon of signs appears in the Unified Arabic Sign Language Dictionary (UASLD).³ The Saudi Ministry of Education has enforced the use of ArabicSL in the teaching of Deaf pupils, while the Deaf community and the hearing educators of Deaf pupils have refused to accept it, because they prefer to continue using SaudiSL as it is their natural sign language.

At the same time, my discovery of the pupils' poor literacy skills (in both reading and writing) changed my career path into one which focused on the education of Deaf pupils and the pursuit of improved literacy. This in turn brought me into contact with new evidence-based approaches to the teaching of Deaf pupils in other parts of the world such as some Scandinavian countries and USA. These discoveries led me to pursue my postgraduate studies in Saudi Arabia in the field of Deaf education, steering me onto a personal and professional pathway which links my practical experience with academic study. I am strongly motivated to research delay in Arabic literacy among Deaf pupils in the hope that my work may contribute to the field of Deaf education, in particular at the primary level. Awareness of Deaf education is poor in Saudi Arabia and the Deaf population is marginalized within Saudi society. I hope that this research will help to address these issues by identifying instructional practices that educators of Deaf pupils may use to improve their literacy.

During my Higher Diploma training, following the insights and change of direction explained above, I took a 30-hour sign language course delivered by a hearing trainer, who taught sign language in the same way as she would teach Arabic. Most of the time, I stood in front of the trainer and copied what she signed. Back at school, I found that the Deaf pupils' signing was different from mine, as I had been taught ArabicSL, whereas the pupils were fluent in SaudiSL, the language of the Saudi Deaf community. This realisation pushed

³The UASLD was published in 2001 in Bahrain as a collaboration between a large number of hearing people and some Deaf people from most Arab countries, aiming to create a unified lexicon for Deaf Arabs. Since then, GASE has introduced it in Deaf schools in Saudi Arabia. ArabicSL is officially prescribed by the Saudi Ministry of Education for Deaf individuals, but disapproval of some of the signs has prevented its effective adoption by Deaf adults.

me towards obtaining more information on the potential use of signing in class and learning to use SaudiSL.

After graduation, I obtained a university appointment as a lecturer, training prospective teachers of the Deaf. However, in spite of my academic and practical experience, I was not confident in the application of my knowledge to the classroom. Through my initial readings, I learned about SBE and the importance of sign language and Deaf adults as models of Deaf culture. However, there were no Saudi or Arabic references or studies about these subjects. Therefore, I considered it important to expand my knowledge in this field. I had the opportunity to study abroad, at Nottingham University. As well as developing research skills, I began to form a different view of Deaf education. I learnt that deafness should not be considered only as a disability, but that it can be cultural experiences with its own community, language, society, values, history and artistic heritage. As others had done in many countries, I began to consider how this view of deafness could alter the approach to Deaf pupils' education. One important point was the potential role of Deaf assistants in Deaf schools and their impact in creating better literacy for Deaf pupils.

Moving to Bristol, I came into a sign bilingual environment, where I met educators and Deaf professionals in teaching roles. This led me to reflect on the lack of recognition of Deaf culture in Saudi Arabia. My curiosity about sign language and the academic level reached by my Deaf fellows on the PhD journey led me to realize that the sign language used by hearing and Deaf people in the United Kingdom differs from the artificial sign language (i.e., ArabicSL) based on Arabic and used in Deaf education in Saudi Arabia.

The central aims of my research thus became the introduction of SBE into special schools for Deaf pupils in Saudi Arabia and the evaluation of its effectiveness in improving Arabic literacy, in order to test the hypothesis that Deaf pupils' literacy skills are improved when using both Arabic and SaudiSL. There were also unique aspects in regard to the form and assessment of Arabic literacy which needed research.

In order to set up my research, I had to find female Deaf assistants for the classroom to serve as models for teachers and Deaf pupils. This led me into

discussions with the only Deaf club and with individual Deaf women in the proposed city in Saudi Arabia⁴. Their insights and experiences completely changed my view of Saudi Deaf life and provided a better basis for the qualitative analysis I have carried out.

Initially, there was some resistance to my research plan. Some hearing and Deaf staff referred to my youth and my strange research idea. Some of them wondered whether I was planning to stop Deaf pupils from speaking. However, our lengthy discussions before the start of the project reassured them of the value of the plan and cooperation was forthcoming.

Classroom observations, individual interviews and group discussions are not common research methods in Saudi schools. I faced cultural objections to making either audio or video recordings of the participants. Other factors, such as the frequent absences of pupils and teachers, my distance from the school (as I was based in the UK) and public health issues in Saudi Arabia, all affected what I was trying to achieve. Furthermore, during my research period there were many changes of Minister of Education and of instructions to teachers from central government, which impacted negatively on the participants' motivation for change

Nevertheless, a Saudi form of SBE with Deaf classroom assistants was achieved and documented. I believe that it offers a unique insight into Deaf education in Saudi Arabia and a starting point for future work

⁴ I looked for Deaf females because males are not allowed to access female schools.

The structure of the dissertation

The dissertation begins with a prologue, followed by an introduction to the research, the background to the study and a literature review. The main body of the dissertation sets out the research questions, methodology, data analysis and results, followed by a discussion of the findings. It ends with conclusions and directions for further study.

Chapter one: Deaf pupils' literacy and PVR

The first chapter focuses on an analysis of the international literature on Deaf education, the issues related to methods of communication with Deaf pupils, bilingual approaches, SBE programmes and a detailed presentation of the PVR strategy and its use.

Chapter two: Deaf education in a Saudi context

This chapter sets the scene for the study, by examining the educational context for Deaf pupils in Saudi Arabia and the current situation of Saudi Deaf education, including a review of legislation relating to the management of Deaf schools, the training of teachers, and issues surrounding the introduction of innovations such as SBE.

Chapter three: Study design

In this chapter the research questions, study methodology and research paradigm are set out. Detail is provided of the conduct of the research, the data collection tools, the data analysis procedures and the ethical issues relating to this work. The PVR strategy to developing literacy in a sign bilingual class is described.

Chapter four: Fieldwork in Saudi Arabia

This chapter presents the three fieldwork stages, beginning with ethnographic research to analyse the reading levels of Deaf pupils and their reading strategies through classroom observations, individual interviews and group discussions. The second phase was a quasi-experimental study involving the design of a new Arabic test to assess Deaf pupils' reading abilities,

implementing the PVR strategy in reading classes and participant observations. The third stage consisted of identifying how we could apply SBE to Saudi Deaf education, in addition to exploring Deaf assistants' and teachers' opinions regarding the implementation of SBE. The chapter also presents a comprehensive analysis of fieldwork notes.

Chapter five: Construction of the Arabic reading test

A new Arabic Reading Test for Deaf pupils was developed and is explained here. The different stages the test went through in its development described in this chapter.

Chapter six: Measuring progress in reading in the intervention

Results from pre- and post-tests of reading achievement are presented here. Features in the intervention that impact on results are also discussed.

Chapter seven: Analysis of the reading process and classroom observations

This chapter presents an analysis of the observations of Deaf pupils and teachers during reading lessons.

Chapter eight: Beyond the intervention –Teachers' and Deaf assistants' reflections

Based on semi-structured interviews in Arabic and SaudiSL, primary themes are drawn out and comparisons made between hearing teachers and Deaf assistants in terms of their attitudes to each other, their sign language competence, their power and their roles in making co-teaching decisions.

Chapter nine: Discussion and conclusions

A summary of the findings is followed by consideration of the primary research question and literacy issues for Deaf pupils. Conclusions are drawn and the advantages and disadvantages of this type of study are explored. A model for future developments of literacy for Deaf pupils is offered, together with directions for further research.

Chapter 1: Deaf Pupils' Literacy and PVR

1.1 Starting point

Watson (1998: 101) cites Webster (1986a) as describing reading as a “window into knowledge” for the hearing child, adding that

the written word has also been seen as providing access to primary linguistic knowledge and understanding for many deaf children.

Perhaps the most central aspect of early schooling is the focus on mastery of reading. By learning to read, children gain access to the recorded culture of a society, are able to teach themselves from the huge store of knowledge that is written and eventually, by developing writing are able to express themselves to others at a distance. Literacy shapes knowledge and that knowledge, which central to society.

Not surprisingly, Deaf education seeks to ensure that pupils with a hearing loss are able to share in this knowledge. Whether or not speech is prioritised as a precursor to literacy, Deaf education everywhere in the world explicitly teaches reading. However, the results of national studies in the USA, Sweden and the UK have not been encouraging, indicating that Deaf pupils are well behind their chronologically and intellectually matched hearing peers in reading comprehension.

In Saudi Arabia, literacy is complicated by the various forms of language which children experience: local dialects at home and in use amongst teachers, Modern Standard Arabic (MSA) as the expected form, and classical Arabic as used in the Quran. Materials for study in class are usually in classical form and all pupils have some issues as they attempt to master literacy. However, the problem for Deaf pupils is more severe when they do not have spoken language for communication with parents and teachers and through which to learn to read. Literacy statistics are hard to come by as there is no national testing programme in Saudi Arabia. Although teachers tend to “pass” pupils at the end of the school year, there is general agreement that Deaf pupils do not read effectively.

One of the main arguments in Western Deaf education has been about choice of communication methodology in school, with oralism (use of speech only) as the dominant paradigm. However, in the 1970s this dominance was challenged in the USA and Scandinavia and initial steps were made to combine the use of speech and signing. By the 1980s, researchers had begun to propose more overtly bilingual methods; initial results and feedback from teachers have been positive. Sign Bilingual Education (SBE) has become a goal in many countries.

In Arabic-speaking countries, a generic Arabic Sign Language (ArabicSL) has been promoted and publicised, but this is used by hearing teachers, while the Deaf community in Saudi Arabia uses Saudi Sign Language (SaudiSL), which is a natural sign language.

In this project, SBE was introduced to a school, supported by Deaf classroom assistants and using a focused Preview-View-Review (PVR) method, with the aim of exploring how best to improve literacy in Deaf pupils.

1.2 Introduction

Reading is the main gateway for success for individuals in establishing their role in society and is one of the most essential skills to be acquired during their education. It has been a prime goal of educational provision. In the UK, it is enshrined in the early years curriculum and is a main focus of reception classes and primary school. Where pupils lag behind, they are given extra help and if they are assessed as being at 18 months or more behind the expected scores for their age group, they are treated as having special educational needs.

In the following sections, there is a review of current work on improving deaf literacy. This considers in turn, the Muslim background, the oral approaches, up to the rise in TC which in turn evolved into Sign Bilingual approaches. A further section considers the reversion to oral methods driven by the advent of cochlear implantation. The chapter ends with the introduction of a strategy within Sign Bilingual methodology (PVR) which forms the basis of the innovation in this study.

1.2.1 Religious insights in Muslim countries

In the Arab context, Al-Sergani (2006), in a document concerning the methodology of reading and its importance in the lives of Muslims, points out that reading is not a hobby but a way of life for both children and adults. One indication of its importance is the insistence on reading in the great dialogue between the Angel Jibreel (Gabriel) (peace be upon him) and the Prophet Mohammed (ﷺ) (peace be upon him): "Read" (Al-Alaq 96: 1). The word 'read' has two meanings in Arabic, one of which is reading from a written text, while the other is recitation from memory without looking at any written text, which is the concept used in this context.

According to Aisha (the mother of the faithful believers) (God please her) in Sahih Al-Bukhari (3: 3), this was the first verse of the Quran to be revealed to the Prophet (ﷺ) through Jibreel, who asked the Prophet three times to read; however, being illiterate, the Prophet (ﷺ) replied each time: "I do not know how to read." The fourth time Jibreel said:

Read in the name of your Lord, who has created (all that exists),
created man from a clot. Read! And your Lord is the Most
Generous (Al-Alaq, 96: 2-3).

Allah gave the Prophet (ﷺ) the ability to memorise the Quran by heart upon first hearing. The interpretation of what Allah says in al-Isra' (17: 106) is that the Quran was revealed over a period of 23 years, based on historical events, and divided into 30 chapters which helped the Prophet to recite it to the people at different intervals (Al-Dimashgi, 2002).

1.2.2 Oral approaches and poor reading

Reading is not a wholly visual process. In general, the assumption in teaching literacy is that hearing learners are able to listen and talk to teachers because they have already learned to speak their first language at home.

However, in my experience, Deaf pupils often have not acquired a first language by the age of five years when reading instruction would begin. Transition to text may be easy at the word-picture matching stage but because they are unable to hear, there is a lack of exposure to spoken language used in

educational processes as the basis of written language instruction. Deaf school leavers therefore, have a much poorer reading performance than hearing school leavers: a reading age of only nine years (Grade 3) at age 16, according to Conrad (1979) and Traxler (2000) in the USA; 12 years (Grade 6) according to Allen (1994); and seven years (first grade) according to Wauters, van Bon and Tellings (2006) in the Netherlands. Conrad's data, while now relatively old, is highly respected, being based on the entire national cohort of 15 to 16-year-old Deaf leavers in a single year in the UK.

The problem is most severe for Deaf pupils from hearing families who often come to school unable either to speak effectively or to use sign language (Weaver and Starner, 2010). Merrills, Underwood and Wood (1994), in a study of 20 Deaf and hearing pupils aged 11-15 years, matched in gender, chronological age, reading age and intelligence, report that the responses of the Deaf pupils were less accurate and slower than those of their hearing peers. Goldin-Meadow and Mayberry (2001) reviewed studies of how profoundly Deaf pupils learn to read and report the general finding that the majority of Deaf pupils do not read fluently. Intellectual or cognitive impairments are not the cause of poor reading performance. Krivitski, McIntosh and Finch (2004) compared 39 Deaf pupils aged 5-17 with 39 hearing pupils of the same age using the Universal Nonverbal Intelligence Test designed by Bracken and McCallum (1998). The Deaf pupils had the same non-verbal IQ as hearing pupils.

Conrad (1979) found that the presence of internal speech (use of an internal speech code in memory) correlated with reading competence and that this co-varied with the extent of hearing loss. The greater the hearing loss, the less likely the child was to use internal speech and consequently, the poorer the reading performance. Conrad advocates the use of non-speech codes for Deaf pupils, proposing that Total Communication (TC) might offer a better vehicle for the learning of reading.

Wang et al. (2008) suggest that phonological coding is available to Deaf readers. However, they offer no evidence of literacy improvement with such programmes.

For many educators, the oralism approach had seemed the logical step in teaching Deaf pupils. Oralism has been used since the late 18th century in German schools (Hutchison, 2007) and more recently, after the Milan Conference in 1880, in most other developed countries (Baynton, 1995: 139). Many teachers believed that oralism was the most appropriate approach, since Deaf pupils would have to learn the teachers' language, and clear speech was seen as the key to educational and life success. Variants of oral educational approaches, including auditory-oral and natural auralism, have emerged for developing Deaf pupils' spoken language abilities. A basic analysis of relevant research studies is presented in Table 1.1.

Table 1.1: Oral educational approaches to literacy⁵

Study	N (Age)	Assessments	Results
Gentile (1972) USA	16,680 pupils and young adults (6-21 years)	The Stanford Achievement Test (SAT)	Research on educational achievements in predominantly oral education system in the USA. Performance was reported as weak in social studies and science, mathematics concepts and computation, paragraph comprehension, spelling and vocabulary.
Conrad (1979) UK	468 Deaf and hard-of-hearing school-leavers (15-16 years): entire UK population in that cohort	Standard tests of reading ability, lip-reading, speech, memory and intelligence	Average reading age of 8.75 years (grade 3); for those with hearing loss greater than 90dB, 50% did not read at all.
Geers & Moog (1989) USA and Canada	100 Deaf pupils (16-17 years)	A test battery including a selection of standard spoken language, writing and reading tests as well as developed tests	The researchers reported that 90% of the 100 pupils had a performance level above Grade 3, 54% of whom had a performance level of above Grade 7, but only 30% of the pupils were performing comparably to their hearing peers of the same age. The average reading ability of the pupils was equivalent to 13 to 14 years.

⁵ Studies of fewer than 25 pupils have not been included in this analysis.

Chapter 1: Deaf Pupils' Literacy and PVR

Study	N (Age)	Assessments	Results
Walker et al. (1993) Australia	195 pupils (9-19 years) Grades 4-12	The Stanford Reading Comprehension test	Reading comprehension of Deaf school leavers was at an average level of Grade 6; 69% of them had a reading ability above Grade 4 level. Overall, 60% of the entire sample of pupils had a reading ability below Grade 5 level.
Wilkins & Ertmer (2002) USA	60 pupils registered in the Child's Voice programme 25 still attend (3-8years) 7 joined the TC programme, 7 left the school	A test battery including oral and written language scales, early speech perception	After 2 years of tracking all former pupils to guarantee adequate achievement in academic areas and communication, further special education services in reading are still required for 5 pupils. They claim academic success when children are provided with an appropriate academic curriculum, extensive teaching of oral language, staff who are well trained and parents who are involved in supporting use of a cochlear implant. 25% of the pupils had hearing aids while the remainder had cochlear implants.
Geers (2002, 2005) USA/ Canada	136 Deaf pupils (8-9 years)	A battery of tests of reading, language, speech production and speech perception	The study involved pupils from the USA and Canada who had been orally trained and who used cochlear implants. More than half of the pupils had a score close to the average range of pupils aged 8-9 years on a group of reading tests compared to hearing pupils. However, in 2005 the average scores for pupils aged 15-16 was 2 years behind the expected grade level in a reading re-test.
Schorr, Roth & Fox (2008) USA	39 Deaf pupils (5-14 years) 37 hearing pupils.	A range of tests including the Expressive Vocabulary Test and the PPVT-III	Cochlear implanted pupils were reported to achieve age-appropriate scores. However, they still performed significantly lower than their hearing classmates. Receptive and expressive vocabulary are affected by the age of the implant.

Apart from the Conrad study there are problems in the selective nature of the samples chosen.

Geers and Moog's (1989) argument is circular (good language skills mean good literacy):

The primary factors associated with the development of literacy in this orally educated sample are good use of residual hearing, early amplification, and educational management, and— above all—oral English language ability, including vocabulary, syntax, and discourse skills (p. 84).

Selection of the pupils is a key factor. Wilkins and Ertmer (2002) identify these conditions for success: Pupils should receive intensive oral language instruction; they must have mild or moderate hearing impairments and use hearing aids or cochlear implants in order to succeed. Seven Deaf pupils failed their reading and maths tests within the oral programme and were returned to the TC programme.

These studies all report the weaknesses of Deaf pupils in learning literacy skills; Lewis (1998) stresses the significance of using residual hearing to develop spoken language abilities as a means of improving literacy.

Turning to the actual teaching of reading, this often took the form of speech lessons:

Compared with hearing children's lessons, reading lessons for deaf children ... became a language lesson and speech-training exercise. The overall result was a slow disjointed lesson punctuated by long periods of questioning, story-telling and demonstration. ... We were left in considerable doubt how such a lesson could leave the child with a sense of any "story" or even of phrases and sentences in reading. What exactly, we wondered, does the deaf child think reading is? (Wood et al., 1986: 106).

The concerns of teachers and Conrad's report (1979) in the UK led to the consideration of alternatives to the oral approach. A new approach was born with the emergence of TC in the USA (Marschark and Spencer, 2009).

1.3 Total Communication

Signed varieties of spoken language, often called Signed English, simultaneous communication or sign supported speech, where teachers speak and use signing at the same time, appeared in English-speaking countries in the 1970s as a reaction to the continuing difficulties in literacy development among Deaf pupils using oralist approaches. TC refers to the use of all forms of communication: finger spelling, lip-speaking, signing, speech, gesture, writing and hearing. Table 1.2 offers examples of TC research.

Table 1.2: Total communication and literacy⁶

Study	N (Age)	Assessments	Results
Geers, Moog, & Schick (1984) “across the country”- probably USA	327 profoundly Deaf pupils (5–8-years)	The Grammatical Analysis of Elicited Language–Simple Sentence Level (GAEL-S)	TC was not encouraging speech development, a concern of the oralist lobby.
Moores & Sweet (1990) USA	127 Deaf and hearing teens (16-17 years)	A battery of language and literacy tests	A continuing 5-year delay in reading in the TC programmes studied.
Hyde & Power (1992) Australia	30 Australian Deaf pupils (10-17 years)	Response booklets with 50 items, and a set of 11 video stimuli.	Pupils had been taught using TC (simultaneous fingerspelling, signed English, lip reading, listening) for over 5 years. Their abilities in matching a sentence with one of the four pictures shown on a video in 11 communication conditions were assessed. The severely Deaf pupils performed better overall than profoundly Deaf pupils in all conditions (including

⁶ Studies of fewer than 25 pupils have not been included in this analysis.

Chapter 1: Deaf Pupils' Literacy and PVR

Study	N (Age)	Assessments	Results
			audition + lip-reading or audition + lip-reading+ fingerspelling) except for signed English. For the profoundly Deaf, signed communication was identified as being better than TC; for the severely deaf there were no significant differences between either of the methods.
Ensor & Koller (1997) USA	42 Deaf pupils (20 in intervention group and 22 in control group (15-19 years)	The Diagnostic Reading Scales, Reading for Concepts	Using a sample of two groups of Deaf pupils who both were from a TC programme (simultaneously signing in English, fingerspelling and speaking) but one group had extra reading practice, as they read more passages as well as the assigned passage, they examined the impact of repeated reading on reading rate of Deaf pupil and their word recognition abilities through 5 reading passages. Both groups showed improvement in word recognition and reading rate; however, pupils in the treatment group showed a higher rate of development than those in the control group.
Dyer et al. (2003) UK	49 Deaf British teens (13 years); 81 hearing pupils	The National Foundation for Educational Research Group Reading Test	Deaf pupils from three schools using the TC approach (BSL and sign-supported English) had a more rapid automatized naming of pictures than hearing controls

Despite evidence of the benefits of using TC and its effectiveness as a teaching strategy (Swanwick, 2016: 24), it has been objected that such linguistic mixing would be likely to compromise the communicative purity of spoken and signed language alike (Marschark and Spencer, 2009).

Wood, Wood and Kingsmill (1991) suggest that the simple processes of matching spoken language with signed language made it very unlikely that an accurate model of either language was produced. Akamatsu and Stewart (1998) examined the effectiveness of simultaneous communication by video recording for four years two hearing teachers of Deaf pupils, trained in using TC, and found that although the teachers' sign/speech ratio increased over time, their simultaneous communication was still driven by speech.

In summary, although progress in education and behaviour as a result of the use of TC has been reported, progress in literacy remains uncertain. Because of limited progress with TC, educators began to consider a sign bilingual education approach.

1.3.1 Advantages of sign language at home

Several studies (Schlesinger and Meadow-Orlans, 1972; Mayberry, 1989; Goldin-Meadow and Mayberry, 2001; Hermans, et al., 2008) have found that Deaf pupils with Deaf parents achieve better English reading skills than Deaf pupils with hearing parents. Similarly, Padden and Ramsey (2000) studied 135 residential and public school Deaf pupils, showing that Deaf pupils with Deaf parents scored higher than Deaf pupils with hearing parents in reading comprehension tests.

One proposed explanation for this advantage is that Deaf children of Deaf parents experience no delay in acquiring an L1; they enter school already linguistically competent (Pribanikj and Milkoivkj, 2009).

It seems clear that early language acquisition in sign language as an L1 and the consequent ease of parent-child and child-child communication is a major factor in the educational development of these children.

Although spoken and signed languages differ in structure (Bellugi and Studdert-Kennedy, 1980), learning sign language as a first language (L1) seems to assist

Deaf pupils in developing their writing/reading abilities in a second language (L2) (Mann, 2007).

1.4 Sign bilingual education

1.4.1 Origins in bilingualism

Bilingual education is defined by García (1997) as the use of two languages for the purpose teaching. The origins of bilingual education can be tracked back to Ancient times (3000BC) through the Renaissance to the modern world (Baker, 2011). The concept was developed in countries such as ancient Syria, Greek and Rome who included it as an important aspect of their culture (Kyle, 1994).

After immigrants arrived in the USA and brought with them different spoken languages, bilingual challenges to education began. Initially, this led to linguistic tolerance and some acceptance of the use of different languages (McCarty, 2004).

Bilingual education was classified into four forms by Fishman and Lovas (1970). These forms included: transitional bilingualism (to quickly achieve the majority language); monoliterate bilingualism (to make the instruction in literacy available in only one language and home language (only in spoken form)); partial bilingualism (to teach both languages in written and speech forms but only English is taught in all domains while other languages are used in social and home situations) and full bilingualism (where equal status is given to both languages). The last form would apply to sign bilingualism.

Bilingualism can be achieved using various models. The immersion programme in Canada in 1960s is one of the well-known models of bilingualism. It involved sending English speaking children to a French speaking school (Johnstone, 2007). The programme aims to achieve additive bilingualism in order to help the children avoid falling into promotes additive bilingualism (Johnson and Swain, 1997). In this programme, children are treated as monolingual French children (Kyle, 1994).

Despite the criticism towards the immersion programme regarding socio-political ideology which might increase the impact of French culture in Canada, progress was reported not only in language but in academic subjects such as

maths and science in addition to language (Johnstone, 2007). Peal and Lambert (1962) used standardised measures to compare 10-year-old monolingual pupils (speaking English or French) with bilingual pupils from six French schools in Montreal found that bilingual pupils had a better performance than monolingual pupils in terms of mental abilities, mental flexibility and concept formation.

Early and extensive exposure to the language over a long period of time and use of the language for non-trivial communication are also required for the success of immersion programmes (Ottawa Board of Education, 1996). The later the children were exposed to the immersion programme the lesser the impact it had on them.

Despite the evidence on additive effects, there was a reaction. The Stanford Working Group in 1993 claimed:

Two damaging assumptions remain implicit in Federal and State (bilingual) Policies: (1) that language-minority students who are economically and educationally "disadvantaged" are incapable of learning to high standards, and (2) that instruction in the native language distracts these students from learning English (p. 8).

This was followed in 1997 as there was a rejection to bilingual education in California which was supporting Proposition 227 which states that only English programmes should be used within schools (Baker, 2011). This was also accompanied by a drop in the number of students in the bilingual programmes (Baker, 2011). These events were due to the misunderstanding of bilingual education and prejudice against linguistic minorities (Crawford, 2007).

The 'No child left Behind' 2001 Legislation (NCLB) pointed out the importance of bilingualism and changed the way the public viewed it (Baker, 2011). It states that bilingual education should be funded by the state; it also suggests that English language and literacy development are the only measure differences between bilingual children and the others and requires bilingual children to be taught by highly qualified teachers (Baker, 2011).

Psycholinguistic studies of bilingualism also focussing on the functional relationship between the two languages of a bilingual and mental representation

began to appear in the 1980s, using Cummins' (1984) model of interdependence, which postulates a link at the conceptual level of the two language systems; thus, acquisition of a second language has beneficial effects on both cognition and fluency.

In an American longitudinal study, Hakuta (1987) emphasised the benefits of bilingualism on non-verbal measures of cognitive ability. Employing standardized tests on 83 kindergarten and 111 Grade 4-5 English-Spanish bilingual pupils in Puerto Rico, Hakuta found a strong relationship between their bilingualism and their overall educational performance. Despite this, the pupils did not achieve a level of English language proficiency equal to that which balanced bilinguals would be expected to have. However, by the later stages of schooling, the bilingualism level improved possibly due to the strengthening link between cognition and language.

In the United States, Calderón, Hertz-Lazarowitz and Slavin (1998) assessed the Bilingual Cooperative Integrated Reading and Composition (BCIRC) programme in helping pupils to read their home language successfully. The study analysed the impact of BCIRC on the literacy success of 222 pupils (Grades 2-3) with limited proficiency in English and high proficiency in Spanish, enrolled in bilingual programmes. There was an improvement in the pupils' reading level, with the greatest effect in the youngest pupils. However, a period of 2 years is required for the pupils to achieve the maximum benefit from the BCIRC.

A study of three groups of Hispanic pupils (n=1811) at Grades 8 and 10 by Natividad (2006) reported better literacy results for those who met the exit standards of the bilingual programme than the Hispanic monolingual learners and those who left the bilingual programme early. Sparrow, et al. (2014) studied 5091 Spanish-English emerging bilingual pupils, from kindergarten to third-grade in 13 schools over a three-year period. Pupils' reading and writing scores were high in both English and Spanish and improved on a rising trajectory toward biliteracy. However, when compared to the scores of pupils from the same grade level in 2010-2011 they were lower in both English and Spanish. The pupils' English scores increased as the length of time they received paired

literacy practice increased or depending on the quality and quantity of the training which the teachers received and their ability to understand “Literacy Squared” and to recognise the pupils’ abilities in both languages; as well as to learn how to treat them with a more holistic method in order to help them develop their English and Spanish reading abilities. The researchers’ findings support the concept (of providing bilingual education to allow the pupils to make connections between languages) does not confuse them or affect their academic development.

As a result of the success of bilingual programmes for hearing pupils, there has been increasing interest in the bilingual approach to teaching Deaf pupils, recognizing the importance of the use of written/spoken language and a natural signed language in lessons.

1.4.2 Sign bilingual education for Deaf pupils

In an influential paper addressing education policy, Johnson, Liddell and Erting (1989) argued on the basis of linguistic data, that the communication methods in use in American Deaf education (e.g., oralism and TC) were failing to improve Deaf pupils’ literacy. They analysed in detail the transcript of a lesson dialogue between a teacher and her pupils using simultaneous communication. They reported that the Deaf pupils used American Sign Language (ASL) appropriately but that the teacher’s signing was heavily influenced by her spoken English, to the extent that teachers who used Sign-Supported Speech lost the grammar of a natural language (Johnson and Erting, 1989).

While noting that TC programmes provide signing in the classroom by mixing the two languages (spoken and sign language), Johnson et al. (1989) argue that this does not make curricular material accessible and that such efforts do not improve literacy. They conclude that Deaf pupils should begin learning language before school and that their first, early natural language ought to be sign language. Their second language would then be a written and spoken one, to be developed at school by hearing teachers who signed fluently and by Deaf teachers. Johnson et al. (1989) were the first to suggest that the research work on bilingualism in spoken languages might be applicable to Deaf pupils and sign language.

Following Johnson et al., bilingual-bicultural programmes began to be used in Deaf schools during the 1990s (Baker and Baker, 1997). The factors driving this change included disappointment with the low achievement of Deaf youngsters using TC (Schirmer, 1994) and the desire of the Deaf community and their hearing allies to improve the achievement levels of Deaf pupils (Simms and Thumann, 2007: 305). In Sweden, a new law was passed in 1981, stating that Deaf people must be bilingual in order to communicate proficiently with their society, family and school (Svartholm, 1993).

Sign bilingualism in Deaf education is:

...more than an approach to teaching or language development. It challenges attitudes and assumptions underpinning deaf education and requires certain structural and organisational changes to schools and services [in SBE] both spoken and signed languages should be given equal status and regarded as a language of the educational process (Pickersgill and Gregory, 1998: 2).

A number of studies have evaluated the development of reading and writing skills in pupils educated within sign bilingual settings. These studies are discussed in the following section.

1.5 Implementation of sign bilingual programmes

From the late 1980s (according to Svartholm, 2014: 34) and the early 1990s (Lange et al., 2013: 532), educators began to implement SBE as an alternative way to develop pupils' reading performance. Studies such as those of DeLana, Gentry and Andrews (2007) and Hermans, Ormel and Knoors (2010) also report positive outcomes in literacy as a result of implementing SBE with Deaf pupils. Fitzgerald and Associates (2010, 2010a) also reviewed the literature on sign bilingual programmes, reporting a positive effect on the literacy skills of Deaf pupils. In evidence, they cite studies by Mahshie (1995) and Evans (2004) of reading comprehension levels in Deaf pupils experiencing sign bilingual teaching practices. They also refer to DeLana, Gentry and Andrews (2007), who found improvements in the reading comprehension scores of 25 Deaf and hard-of-hearing pupils educated in an ASL/English bilingual programme which

included a range of bilingual strategies such as sandwiching, chaining and contrastive linguistic models.

In a recent review of pedagogical and linguistic studies of bimodal bilingualism (Swanwick, 2016), the sign bilingual approach is claimed to improve literacy because it accesses the curriculum in the pupils' preferred language in an environment which values Deaf culture, deafness and sign language. Swanwick supports her argument by referring to a study by Morford et al. (2011), whose findings indicate that during the processing of written text, 19 Deaf bilingual pupils (age 18–55 years) use the sign translations of the words, indicating the value of fluent sign language in developing literacy.

Strong and Prinz (2000) and Hoffmeister et al. (1997) also explored the relationship of linguistic proficiency in written language and sign language in 155 Deaf pupils aged 8-15 years; both studies report a correlation between higher scores in the English literacy measures and more developed ASL abilities.

Fayyad (2008) studied 10 Deaf Egyptian boys aged 16-18 and found that their reading and signing level improved after a bilingual intervention programme of sign language and vocabulary development activities. Crume (2013) similarly claims to have found a correlation between the fluency and proficiency of Deaf pupils' signing/fingerspelling and their reading ability, according to nine Deaf and hearing teachers from an American ASL/English bilingual school for Deaf pupils. Further analysis of relevant research studies is presented in Table 1.3.

Table 1.3 Bilingual education programmes for Deaf pupils and literacy⁷

Study	N (Age)	Assessments	Results
Padden and Ramsey (2000) USA	135 residential and public school Deaf pupils. Mean age of first educational contact from 2.43 to 3.125 years.	Stanford Achievement Text and Reading comprehension tests	A positive correlation between the use of ASL and reading skills for Deaf pupils from both Deaf and hearing families.
Hoffmeister (2000) USA	78 Deaf pupils; divided into two groups, those with limited ASL exposure and those with intensive ASL exposure. Ranged in age from 8 to 16 years	ASL tasks (recall Signs) and a battery of tests of signed language and reading	Pupils who were continuously exposed to ASL were more knowledgeable about ASL and English structure and attained higher achievements in reading comprehension tests than those pupils with less exposure.
Kuntze (2004) USA	91 Deaf pupils aged 4 to 14.5 years attending an ASL/English bilingual school	Developed testing materials to assess the pupils' comprehension of passages and their vocabulary knowledge	The researcher reports that the acquisition of ASL improved their inferential understanding and comprehension of reading passages, as shown by their consequent ability to describe them in ASL. Both the parents' hearing status and the pupils' later age of enrolment were found to reduce the impact on the pupils' test scores.

⁷ Studies of fewer than 25 pupils have not been included in this analysis.

Study	N (Age)	Assessments	Results
DeLana, Gentry and Andrews (2007) USA	25 deaf and hard of hearing students (aged 8–17)	The SAT-9 Reading Comprehension subtest	The researchers found that ASL/English bilingual education at an American public school increased pupils' SAT-9 Reading Comprehension scores.
Swanwick and Tsvetik (2007) UK	194 Deaf pupils in six bilingual programmes and services for two mainstream schools and four schools for the Deaf (aged 5–11)	The observation and interview techniques were applied to collect illustrations of good practice	The study aimed to identify how Deaf pupils with cochlear implants benefited from SBE. The researchers found that SBE had a direct positive impact on Deaf pupils' literacy. They also identified features of good practice in SBE such as: access to the curriculum; language use in the classroom; language support; language assessment; staffing and organisation; Deaf culture and individual well-being and identity".
Hermans et al. (2008) Netherlands	87 Deaf pupils with an average age of 10 years 11 months attending five sign bilingual schools	Story comprehension tasks in written Dutch and in Sign Language of the Netherlands (SLN), and reading vocabulary tasks	The researchers examined the relationship between use of signing, written Dutch and reading comprehension skills in Deaf pupils. Deaf pupils with Deaf parents scored higher than Deaf pupils with hearing parents on the story comprehension tasks, and on reading vocabulary tasks. In response to a written story comprehension test and a reading vocabulary test, the researchers found that the use of SLN correlated with improved reading scores.
Van Staden (2013) South Africa	64 Deaf pupils aged 6-11	A range of standardized and diagnostic tests including ESS1 reading tests, diagnostic reading comprehension test, diagnostic instrument evaluating the children's	The researcher examined the effectiveness of implementing sign language and multi-sensory coding in improving the vocabulary and reading skills of Deaf pupils, who were selected from a sign bilingual (South African Sign Language and English) primary school. The teachers attempted to improve the reading abilities of the pupils in the experimental group by applying print, sign and picture mapping exercises. Results after a period of nine months' reading intervention show a considerable increase in the vocabulary and

Study	N (Age)	Assessments	Results
		sight words, their level of receptive and expressive vocabulary knowledge and the Raven's Colored Progressive Matrices	reading skills of the Deaf and hard-of-hearing pupils in the experimental group, whereas those in the control group improved only marginally in word recognition, sight word reading, reading comprehension and vocabulary knowledge.
Dammeyer (2014) Denmark	331 Deaf and hard-of-hearing pupils, including some with cochlear implants, with mean ages of 11, 12.8 and 13.8 years respectively.	Teacher ratings through the questionnaires were used due to the lack of a national standardized test	A large-scale study in six Danish bilingual/bicultural schools, evaluating the literacy (reading and writing) skills of the pupils. It was found that 45% (149) of the pupils showed no major literacy delays, i.e. they were no more than one year behind in school.
Novogrodsky, et al. (2014) USA	564 pupils from four to 18 years	Receptive multiplechoice American Sign Language (ASL) antonym test and the Stanford Achievement Test reading comprehension test	The researchers concluded that proficiency in reading comprehension achievement depended on solid and deep first language (ASL) proficiency and not only on parental hearing status. They suggest that any reading comprehension intervention strategy should address the enhancement of both L1 and L2.

However, it should be noted that because the observations of teaching in Swanwick's and Tsverik's (2007) project were limited to a certain hour of literacy teaching, the researchers point out that in order to prove whether this is beneficial for other subjects further research will need to be done. They also found that SBE created good practice which might have led to better speaking and listening skills for the Deaf pupils with cochlear implants, in their sample.

In DeLana's, Gentry's and Andrews's (2007) study, the researchers believe that one of the unique features of the ASL/English bilingual programme was the working of 'vertical team' cooperation among hearing teachers, interpreters and Deaf ASL paraprofessionals, which helped to develop language teaching methods and the curriculum and to exchange information related to reading materials and activities. Reading success was significantly correlated with years of ASL usage, parental signing skills, socioeconomic status, absence or presence of assistive listening devices and IQ.

In relation to the effect on reading achievement of bicultural aspects of bicultural-bilingual programmes, Mountry, Pucci and Harmon (2013) note the importance of informing Deaf pupils about Deaf culture, meeting ASL/English bilingual adults, continuous contact between home and school and the use of fingerspelling, all of which supported the development of the pupils' reading proficiency. McKee (2005) argues that employing Deaf paraprofessionals (untrained or partially trained Deaf assistants (See McKee (2003, 2005) in reference list.) as models of cultural skills and good language is vital to the success of such a programme. He recommends that the paraprofessionals' role should not be limited to assisting with the teaching, but should extend to administration and be a reflection of the bilingual community in the school. In New Zealand, Fitzgerald and Associates (2010) describe the employment of both paraprofessional and professional Deaf people in bilingual programmes since the mid-1990s, serving as cultural advisers, sign language and Deaf studies educators, language assistants, sports coordinators and residential caregivers. Swanwick and Tsverik (2007) and Swanwick and Gregory (2007) have also argued that introducing Deaf adults as sign language role models into

schools for the Deaf would support flexibility in language use and develop the pupils' self-esteem and self-identity.

Teacher training must be accessible to Deaf people. In the USA, Deaf people have traditionally (since the 19th century) been trained as teachers (Armstrong, 2014). However, apart from Scandinavian countries, no Deaf-appropriate teacher-training programmes exist. In South America, Brazil has recently instituted major programmes to train Deaf teachers (Ladd and Gonçalves, 2012). Having reviewed research into early literacy practices in Deaf pupils' homes, Swanwick and Watson (2005) conclude that a Deaf teacher should be allocated to each pupil and his/her family in order to advance language and literacy development. Teacher-training must also include a curriculum relevant to SBE. Simms and Thumann (2007) proposed that Deaf and hearing educators be trained and have an understanding of Deaf culture and sign bilingualism in order to teach Deaf pupils. Policies may vary within SBE settings. Teachers may adopt various communication strategies; for example, consecutive or concurrent presentation of the two languages with appropriate value given to each (Gárate, 2012). Languages can be separated by time (sign language in the morning, spoken language in the afternoon), place (sign language in the playground and spoken language in the classroom), person (Deaf teachers teach in sign language and hearing teachers in spoken language). There is little data on whether such models are used consistently and if different policies correlate with different outcomes.

Padden and Ramsey (2000) suggest that use of specific linguistic strategies, such as 'chaining' structures, i.e. progressively moving from using signs to fingerspelling and written words in order to teach more advanced vocabulary, are important. They also report that use of meaning-driven strategies rather than decoding-driven strategies, which appear to obstruct pupils' comprehension, was effective in teaching English reading. They conclude that the exposure to ASL culture and the length of time spent in school have a major impact on pupils' English reading abilities, as well as providing them with related cognitive and linguistic resources (Padden and Ramsey, 2000).

Smith and Ramsey (2004) examined the ASL discourse strategies in literacy lessons used by an experienced native signing Deaf teacher of ASL with nine fifth-grade profoundly Deaf pupils (average age 11.5 years). The Deaf teacher supported more frequent interactions among the pupils and encouraged their active involvement in the literacy activities.

Although comprehensive national studies of SBE have yet to be undertaken, most existing studies indicate the value to be obtained by the use of sign language and written language in the child's education.

1.6 Controversy in regard to SBE and Literacy

Despite the value and the positivity of most work on SBE, there are some competing claims among the professional educators' community concerning some groups of children.

Mayer and Wells (1996) argued that Cummins' linguistic interdependence model, which suggest that hearing individuals can use their acquired literacy skills from their first language to help them access a new language giving that the appropriate conditions are available, is based on a false comparison as the situation in Deaf education does not match the expected conditions of Cummins' model. They see that Deaf learners depend on visual language to communicate (sign language) which is equivalent to speech for hearing learners; however, this equivalence does not apply in the same way in the written form of both languages.

It is claimed that without a written form of sign language, Deaf learners approach the written language (English) through limited knowledge of English but not necessarily through sign language (Mayer and Akamatsu, 1999; Mayer and Wells, 1996). The assertion is that certain required text-based proficiencies cannot be transferred from L1 (signed) to L2 (written). This does not mean that primary teaching in natural sign language will not have academic and cognitive benefits which could lead to maintaining L1 without interfering with the literacy in L2 (Mayer and Leigh, 2010). Mayer and Wells cited Canale's et al. (1987) and Treger's and Wong's (1984) studies to support the positive correlation between the ability to read and write in L1 and the mastery of the same skills in

L2. Goldman's (1985) study may indicate the absence of the correlation between the oral abilities in L1 and the reading and writing abilities in L2. At the same time, Mayer and Akamatsu (2003) suggest that direct interaction with their L2 will not only help the pupils writing and reading skills but also cause them to learn the language (L2) itself.

The proficiency in L1 which is required by the linguistic interdependence model is also not a particularly secure assumption in SBE, according to Mayer and Leigh (2010). This is due to the fact that the majority of Deaf pupils from hearing parents lack exposure to sign language which causes them to start their school life with limited proficiency in their L1 (Mayer 2007). Mayer and Leigh (2010) supported their argument with an Australian study by Johnston, Leigh, and Foreman (2002) who found that the delay in the acquisition of L1 skills is one of the biggest problems which work against the implementation of sign bilingual programmes. The pupils' acquisition of L1 was obstructed by barriers including the lack of family resources which are needed to help the acquisition of L1, the lack of suitable physical resources and the late engagement of the children and their parents with sign language (Johnston, Leigh, and Foreman, 2002).

The requirement of a threshold level of L2 proficiency is more critical than the lack of available L1 literacy skills; this is due to the lack of adequate exposure to the target second language also has a negative impact on the learners' development of that language (Mayer and Leigh, 2010). They also claimed that simultaneously using spoken language and a natural sign system is an effective method of providing access to L2 in bilingual education and with pupils with cochlear implants. In discussing the issue they refer to the work of Lucas and Valli (1992) who argue that: contact signing is the production of spoken and signed codes which a signer uses to produce ASL lexical items.

Based on Cummins' principles, a bridge between written speech and inner speech can be provided by an external spoken method in both languages. However, Mayer and Wells (1996) argued that there is no adequate foundation of Cummins' model to be applied in the bilingual-bicultural approach to the learning of literacy for Deaf pupils because English and sign language cannot be treated as linguistically interdependent. Their argument was based on

Vygotsky's (1987) claim that inner speech has its separate unique nature and characteristics in addition to its relationship to other speech forms which is complex. They also cited Conrad's (1979) and Bernstein's and Finnegan's (1983) studies, who found that Deaf pupils weak reading abilities were due to the lack inner speech if it was treated as synonyms while thinking aloud or conducting cognitive activities. A visual spatial code, which is used by Deaf learners to remember, is different from the speech code employ by hearing learners, according to Klima and Bellugi (1979). The inner speech of Deaf learners could include different aspects of sounds, gesture, sign language and fingerspelling, according to Webster (1986b).

However, this has not been properly explored and many Deaf people with limited speech are fully bilingual in signing and writing. Even without a clear theoretical basis on literacy the benefits to cognition are likely to be significant and the significance of socialisation and acculturation is enhanced by SBE.

1.7 Reversion to Oralism based on new technologies

Expectations in Western countries, regarding educational performance of Deaf children changed significantly after the introduction of newborn hearing screening and use of new technologies such as digital hearing aids and invasive therapies such as cochlear implants. This can be seen against the background of mainstreaming and its later incarnation as "inclusive" education (Leigh, 2008). Most of this development and the accompanying professionalism of educators have yet to reach Middle Eastern countries.

Parental aspirations have increased and in particular, cochlear implantation has become routine in many Developed countries. The philosophy of normalisation has become channelled towards making Deaf children normal (i.e., like hearing children).

It is claimed that implanted children become normalised and acquire significant functional hearing which allows improvement in language and speech skills as they are more able to access auditory activities than before (Lederberg, Schick and Spencer, 2012). Nevertheless, there are still some dissenting researchers who consider that their development of grammar and reading skills is still poor

compared to their hearing peers (Lederberg, Schick and Spencer, 2012) i.e., the normalisation is incomplete.

In a British experimental study, Watson (2002) examined 10 Deaf pupils aged 7 years +, who had received cochlear implants before they were five years old. Their supposed new access to sound through the cochlear implant was predicted to impact their literacy. By analysing the pupils' responses to spelling, comprehension and writing tasks used by the teachers and taking into account, the teachers' comments, Watson was able to claim that seven out of the ten pupils showed literacy progress. However, four pupils were only at the level of just starting on writing. The study suggested that the pupils used phonic strategies and visual and contextual cues to help them in writing and reading. The results are not completely convincing due the lack of detail on the earlier stages of development and the small size of the sample. There is a tendency to build the case for hoped-for outcomes from single cases or at least from very small samples.

In Netherland, Vermeiden, et al. (2007) addressed visual word recognition and reading comprehension of 50 Deaf children and adolescents with a minimum of 3 years of 22- channel Nucleus implant systems of Cochlear, who studied at a mainstream school, a school for Deaf pupils and schools for hard-of-hearing pupils. They used spectral peak or Multi peak speech-coding strategies up to the time of reading testing. These children were compared to a) 504 Deaf children and adolescents without cochlear implants and an average hearing loss of 108 dBHL. Hearing earing aids were not used by all children in the group and b) 1,475 hearing children with an average age 10.1. All groups contain boys and girls who all had hearing parents. From the analysis of the data from the Reading Comprehension Test, the researchers reported that Deaf children with implants scored significantly higher than those without in reading comprehension and (in secondary education only) visual word recognition. However, their reading comprehension scores were significantly lower when compared to hearing children. The association of spoken language comprehension with reading comprehension was strong. After three years of receiving the cochlear implant the rate of improvement of Deaf children is

greater even than that of hearing children. However, this result might not be very reliable because the Deaf children in the sample were older than the hearing children. The type of education wasn't found to have an effect on the reading comprehension scores. The limited use of sign language at home negatively impacted the children's reading performance. The above results in the end did not provide a valid answer to the question of how cochlear implants improve reading comprehension.

In an American longitudinal study, DesJardin, Ambrose and Eisenberg (2008) involved 16 mother-child dyads from the Children's Auditory Research and Evaluation Centre to examine early factors (over 3 years) that may impact the reading skills of young children (aged 2.7-6.3 years) who received cochlear implants (at the age of 1.0-3.3 years). They were educated in a school-aged program or preschool and spoke English along with their mothers as their primary and only communication method. The Oral Written Language Scales, the Reynell Developmental Language Scales, the "Phonological Awareness Test and the Woodcock-Johnson-III Diagnostic Reading Battery were used to assess language skills, reading skills and phonological awareness. This study's results show that both the mother's ability to use a higher level facilitative language such as open-ended questions during storybook reading and the children's expressive language skills contributed to the children's literacy skills. Positive relationships were found between children's expressive skills and reading vocabulary, word attack, letter-word identification and children's passage comprehension. However, no relationship was found between the literacy variables and the children's receptive language. Children with expressive language who scored below 70 in T1 showed reading skills and phonological awareness below the average (85) after three years. The use of two different (before and after) tests in this study could have affected the correlation of the pupils scores and the tests' difficulties may have varied. Again, the small sample size makes it difficult to extract firm results from this study.

In Harris and Terleksi's (2011) study, 86 British Deaf and hard-of-hearing pupils and teenagers (12-16 years old) from a mainstream school and the school for the Deaf were divided into three groups: 30 implanted early; 29

implanted late and 27 with digital hearing aids. The children were given the Edinburgh Reading Test and the British Ability Scales II. The participants were grouped according to their communication experiences, that is, sign, speech or both. All had a hearing loss of at least, 85dB in the better ear. The researchers found that all the groups showed a delay of around 3 years in their reading. The participants with a cochlear implant did not read better than those with hearing aids even though 20% of those in a mainstream school depended completely on speech for interaction. Factors such as age of diagnosis, degree of hearing loss, chronological age and nonverbal IQ, were better predictors of reading achievement.

In a recent study, Mayer, et al. (2016) employed the York Assessment of Reading for Comprehension, the Single-Word Reading Task and the Test of Word Knowledge to examine literacy results of 33 British (boys and girls) pupils (aged 9-16 years old) who received cochlear implants at the age of 3-7 years and who used them for most of the day. In the sample 28 Deaf pupils were of average intelligence while 5 pupils were above. Most of them (85%) were using oral communication at mainstream schools and at homes. The average reading comprehension rate was achieved by 75% of the Deaf pupils while 13% exceeded it. The study showed that, 64 % of the participants achieved average scores in expressive vocabulary, but only one scored above average. However, in writing only 25% of the pupils were within the average performance range for their age while 56% were below and 19% were above. Different factors such as age at testing, age at implantation and bilateral implantation impacted the final results which show that the pupils with early implantation scored higher in writing and reading comprehension than those with late implantation or non at all.

The results in the above studies are complicated because of differences in hearing loss and early experience of different participants. This could make it difficult to determine whether recent movements in early identification and new technologies will cause a real improvement in the literacy level.

These advances in invasive technology to improve hearing are of considerable interest, but the factors identified do not yet impact on Deaf education in Saudi Arabia at this time.

1.8 Sign bilingual approach using PVR

1.8.1 The PVR strategy and reading

The preview-view-review (PVR) was introduced by Freeman and Freeman (1998), who applied it in a bilingual class learning English as a second language. It is regarded as effective in facilitating pupils' comprehension and content knowledge acquisition (Reiss, 2008).

PVR uses pupils' L1 as an advance organiser for the topic they are about to study in their L2. In the preview, the teacher uses the pupils' first language to introduce the content of the lesson, build vocabulary, brainstorm what they know on the topic, the pupils show what they have learned in L1 and report back in L2. At the view stage, the teacher presents the core lesson, providing the link to the topic in L2 and using a variety of techniques (e.g. visual support) to make the input comprehensible. The review utilises the pupils' first language to summarise key points and raise questions about the lesson using the pupils' L1 (Freeman and Freeman, 2001:152-153). PVR varies depending on the pupils' ability to use a bilingual approach and the difficulty of the lesson content (Gárate, 2012). Details of the application of PVR within the SBE programme for the present study are given in Chapter 3. It was chosen here as a focused approach for SBE which could be offered to teachers to develop and apply as appropriate to the mandated curriculum. It could be used more flexibly and given the circumstances of the researcher at a distance, would be able to be applied without daily oversight.

According to Herrell and Jordan (2008), PVR provides effective instruction by strategising and planning, specifically by gradually building vocabulary to support understanding. PVR enables teachers to leverage the learner's native language, turning it into a tool to provide access to content areas of all kinds, including facilitating transfer of language to academic settings, building

background knowledge and making content understandable (Moreno-Recio, [n.d.]).

Ulanoff and Pucci (1993) investigated the effectiveness of PVR in the context of English as a second language, separately using concurrent translation and Preview-Review as methodologies for bilingual classrooms. The study included 60 participating native Spanish-speaking children (28 boys and 32 girls) in Grade 3 who had reading skills in English and Spanish. The participants, who all had Spanish as their L1, were divided into three groups: One was a control group (n=16); the second group was taught using a Preview-Review technique (n=21) and the third group was taught using concurrent translation (n=23). The tests were all conducted by one teacher, but the researchers do not specify whether she/he was an L1 speaker of Spanish. Wood and Wood (1984) tested three groups of pupils; 1) control group who were taught using concurrent translation through listening to English stories without explanation; 2) group who were taught using concurrent method through listening to the same English stories with the reader explaining it to them; 3) experimental group who were taught using the PVR method through listening to the same English stories after the teacher has provided them with some background knowledge of them in Spanish (preview), using pictures and the students L1; this was then reviewed in Spanish after finishing the reading to ensure the understanding of significant points. The change in scores was examined through giving the pupils a post test (the Napping House vocabulary test) including the same vocabulary items. The results show that students taught using the PVR strategy learned and retained far more vocabulary than those taught by concurrent translation.

A more recent American qualitative study by Mercuri (2015), involved 10 teachers with different degrees of language bilingualism, who had undertaken a Bilingual Education training programme, and practised the PVR strategy as a pedagogical instrument in their teaching. They were interviewed about their views of the PVR strategy and its impact on pupils. Despite the difficulties that they faced, such as too few Spanish language materials and too little time for planning, interviewees stated that the structured use of PVR allowed the pupils to link the languages and concepts, which improved learning.

1.8.2 PVR and reading with Deaf pupils

There is little experimental research directly investigating the results of using PVR on the reading achievement of Deaf pupils. However, some English language studies (Li, 2005) and Arabic language studies (Al-Rayes and Al-Awad, 2013) have adapted the PVR strategy as a bilingual approach to be used with Deaf bilingual pupils. In the latter study, the researchers examined how effectively and successfully the PVR strategy was applied as a SBE approach in building reading skills underpinning literal comprehension⁸ with 14 Deaf pupils (girls) in grade five at a special school for the Deaf. The pupils were evenly spread out in two groups according to their age (10-17 years); control (n=7) and the PVR strategy (n=7) groups and they were taught by different hearing teachers who specialised in Deaf education. According to the researchers, both teachers were fluent in SL; however, no information was given regarding how the teachers' SL abilities were measured. The researchers designed a list of direct literal Reading Comprehension skills (n= 18) and a Reading Comprehension direct literal measure (three reading texts with 54 Multiple Choice questions, that were chosen from the pupils' schoolbook) to measure the intervention's impact. Each teacher taught the same three reading texts over three weeks. They were able to claim that the use of PVR improved Arabic reading scores for Deaf pupils in the experimental group. They concluded that the strategy had led to better literal comprehension. The study also found that there are 18 different skills such as remembering and retrieving their previous information of the text and linked it with the knowledge gained after reading, forming their general perception of the written text, activating the knowledge of deaf students, arousing their interest and finally presenting a summary (written, signed) of what they have learned.

⁸ The researchers defined the term Literal Reading Comprehension as the pupils' ability to a) specify the main title of the text, the main idea of the reading text and partially express the main ideas; b) understand the meaning of the words and sentences, identify the shape of the word, rephrasing the ideas, connect the picture and the words; c) specify the meanings of the words through sign, know the antonym of the word and the relationship between the words, complete the missing parts of the sentence; and d) connect the sentences and the pictures, identify the meanings of the words through using them in sentences, recognize the chronological and spatial arrangement in accordance with their importance, and identify the meanings of the words which clarify chronological and spatial relationships (Al-Rayes and Al-Awad, 2013: 923-924).

In the USA, Andrews and Nover (2000) examined the experiences of 32 teachers who participated in the third year of a project applying bilingual and English-as-a-second-language methodologies and literacy theories to teaching preschool, Grade 1-8 and high school Deaf pupils. The teachers reported that PVR: a) supported the acquisition of academic and conversational languages, since the strategy depends on teaching from whole to part, which helps learners to expand their background knowledge; b) assisted the pupils in learning specific reading skills and in avoiding frustration; and c) supported teachers in assessing to what extent the pupils understood the language of communication. Reading teachers also provided examples of the varied ways in which the PVR strategy could be used in teaching reading texts, such as by first discussing the main characters in the text, followed by comparing and contrasting them. They also described a number of ways of using ASL: a) before reading a text, then later to review the text as a group; b) beginning by reading the text in ASL, followed by the students dictating the story through their drawings, with the teacher writing down in English what the pupils had signed about their drawings, then finishing by reviewing the text in ASL.

In the fourth year of the same study, Andrews, Nover and Everhart (2001) found that the teachers understood how to approach literacy assessments and establish targets for supporting students to achieve improved levels in literacy and language. They quote some of the participating teachers' reflections on the benefits of SBE:

In order for pupils to become truly competent readers and writers of English, we must use ASL, their natural language, to explain the English text so they will comprehend and hopefully internalize it [...] By the same token, providing English text for topics discussed in ASL will strengthen students' ability to use both languages competently in both academic and non-academic situations (Andrews et al., 2001: 56).

An experimental study by Li (2005) measured the effects of applying the PVR strategy with 12 Grade 3 and 4 hearing bilingual (Spanish L1, English L2) Mexican-American pupils aged 8-11 years and 12 Deaf bilingual (ASL and

English) pupils aged 9-11 years, in the reading of science texts. All participating pupils read six short science passages (Deaf pupils in ASL, hearing in Spanish) during 30 to 45-minute periods. The first, second, fourth and sixth texts were presented in spoken English only; in the third and fifth texts, the native Spanish-speaking research assistant used spoken Spanish and the Deaf native signer research assistant used ASL at the preview and review stages to present the texts. Only printed English was used to present the test passages. The researcher helped in answering the pupils' questions that arose during the reading and probing with their questions. The results showed that both hearing and Deaf bilingual readers' scores were better after the PVR treatment than their scores on the English reading texts alone. However, regarding inferential questions, PVR had no effect on increasing scores in the related tasks.

Andrews and Rusher (2010) analysed four experimental and mixed-method studies which examined the effectiveness of different code-switching techniques using sign language and English print with signing Deaf pupils. All four studies showed that this strategy supported learning and reading comprehension. In another American study, Nover, et al. (2002) used the PVR strategy as a code-switching instructional strategy with 181 young Deaf pupils (aged 8-12 years) with Deaf or hearing parents and older Deaf pupils (aged 13-18 years) with Deaf or hearing parents. The 23 older pupils with Deaf parents scored significantly higher than the other groups.

During literacy activities, the teachers exhibited general features of bilingual practice such as language separation, the use of contrastive linguistic models for grammar instruction, facilitation of meta-linguistic awareness, concurrent approaches and bridging (ibid: 79). Simultaneous communication (e.g., Manual Coded English, Signed English) was used in small groups or in one-to-one activities, in particular with hard-of-hearing students, to facilitate their transition to ASL as an L2, whereas concurrent communication was applied to large-group classroom instruction.

The implementation and success of the PVR strategy varied, depending on teachers' qualifications and qualities (sign language fluency, years of teaching, bilingual training, number of Deaf teachers participating), lesson planning

(details of classroom activities and the literacy curriculum), and type of school (public, special education) (DeLana, Gentry and Andrews, 2007). Few studies have been undertaken in other countries such as USA (e.g., Andrews and Nover (2000) Andrews, Nover and Everhart (2001), Nover, et al. (2002), Li, 2005), but a pilot study in Saudi Arabia (Al-Rayes and Al-Awad, 2013) described the effectiveness of PVR in improving literal comprehension with seven pupils (ages 10-17 years) in Grade 5 at a school for Deaf pupils in Saudi Arabia.

1.9 Conclusions

The use of SBE for Deaf pupils continues to evolve. Research points to positive results and to the advantages of using the pupils' native and preferred language. The use of PVR within SBE has been reported to have positive benefits. However, the use of this approach is still at an early stage and more research is needed. The situation of Deaf pupils in Saudi Arabia is quite different from that of pupils in North America and Europe, yet SBE could be a significant innovation and aid for the teaching of literacy. It is this idea which forms the core of this dissertation.

We will now review the Deaf education setting in Saudi Arabia before setting the research questions in chapter 3.

Chapter 2: Deaf Education in a Saudi Context

There is considerable variation among programmes of education for Deaf pupils in different countries. What would be ideal is a joined-up model from birth to adulthood, but in Saudi Arabia, Deaf education is relatively recent and does not yet include the family, the preschool or language choices. In considering the existing models of sign bilingualism, there may be issues to be addressed and amendments necessary before sign bilingualism can be implemented in Saudi Arabia. This chapter provides a description of the current Deaf education system in Saudi Arabia.

2.1 Philosophical and religious roots of education

While Western education has its roots in the Greek and Roman secular systems of education, the Saudi educational approach draws on the revelation and the source of Prophet Mohammed's message. Approaches to child-rearing, education and learning in Saudi Arabia started with the emergence of Islam. This is important for an understanding of the development of Deaf education. The first verse of the Qur'an as revealed to Prophet Mohammed (peace be upon him) is:

Proclaim! (or Read!) In the name of thy Lord and Cherisher, Who created (Al-'Alaq, 96: 1).

Almighty Allah also asks in the Qur'an:

Say: Are those equal, those who know and those who do not know? (Az-Zumar, 39: 9).

Furthermore, Anas bin Malik narrates that Prophet Mohammed (peace be upon him) said :

Seeking knowledge is an obligation upon every Muslim ... (Sahih alJaami as-Sagheer 2784-3914, p. 216).

Such principles of education can be applied equally to male and female learners since the emergence of Islam, as all of the Quranic and prophetic sources affirm the equality of men and women in education (Al-Ageel, 2005: 105). The Qur'an states:

O mankind! We created you from a single (pair) of a male and a female, and made you into nations and tribes, that ye may know each other (not that ye may despise each other). Verily the most honoured of you in the sight of Allah is (he who is) the most righteous of you. And Allah has full Knowledge and is well-acquainted (with all things) (Al-Hujurat, 49:13).

Allah therefore uses godliness as the standard by which to judge people (Jalal, 2010), not their physical appearance, gender, age or colour. Godliness means obeying Allah privately and publicly, thanking him by doing all good deeds in obedience to His orders and avoiding any actions forbidden by Him. Abu Sa'eed al-Khudri narrates a relevant event in the life of Mohammed:

Some women requested the Prophet (peace be upon him) to fix a day for them as the men were taking all his time. On that he promised them one day for religious lessons and commandments (Sahih Al-Bukhari 3: 101).

In that era, the Prophet was responsible for men's education and each man was responsible for the education of his family, but women wanted to receive knowledge directly from the Prophet. Furthermore, the Sahaabiyaat (the female companions of Prophet Mohammed, meaning his wives, daughters, female Muslim scholars and so on) were also responsible for teaching other women. Indeed, Aisha, the Prophet's wife, narrated thousands of hadiths that many scholars depend upon to establish jurisprudence. Aisha herself had many jurisprudential views. According to al-Shifa Bin Abdullah, the Prophet (peace be upon him) also asked one of the Sahaabiyaat

...to educate his elderly wife Hafsa, using reading of the Quran in the therapy, as she taught her writing before (Abu Dawood 16: 3887).

In the interpretation of Islam, educational, social, medical, economic and psychological principles also apply to those people with special needs,⁹ who are considered as an integral part of human society. Equality between people is one of the most significant Islamic principles that underpin the care of people with special needs. Indeed, in 707 CE, the Caliph Walid bin Abdul Malik established schools and the first care homes (hospitals) for people with special needs; he hired doctors and servants with regular salaries to provide round-the-clock services for them, telling people with special needs not to “ask people”, meaning that they would not have the shame of having to ask people for support (Imam Ibn Al-Jawzi, 1984:130). Similarly, in the time of the Caliph Omar bin Abdul Aziz (718-720), a decree was issued to the Islamic provinces to abide by the laws in respect of assigning a paid carer to each person with a physical disability to meet their everyday needs.

When Islam first emerged in Mecca in 608/609 CE, Muslims obeyed the orders of their Lord and the guidance of their Prophet to seek learning and then to transmit it to their children (Al-Munjad, 2016). This was part of a balanced education to prepare them for the future. Indeed, in the era of Prophet Mohammed and his companions, education began in Muslims’ homes and in mosques (Islamic Library, 2016).¹⁰ There was no age specified for learners to attend the mosques; most of Prophet Mohammed’s speeches referred to learners as boys or young men, which in the Arab community can mean anyone from birth to old age (Baheth, 2016); it has also been said to mean boys from birth until puberty (Almaany, 2016).

2.2 Historical roots of Saudi education

Tribal and ethnic divisions within Arabian society around 300 years ago (Ministry of Municipal and Rural Affairs, 2012: 1) resulted in an economic

⁹The term ‘people with special needs’ refers to individuals who differ in their sensory, mental or physical health, communicative and behavioural, emotional or academic abilities in a way that requires special educational services (GASE, 2001).

¹⁰Mosques were the first Islamic educational institutions and they remain one of the more stable and continuing providers of education to this day (Maymsh, 1998: 32). Their role is not limited to worship; they are a place for delivering upbringing and education by holding workshops/groups and councils that are varied in religious, literary, historical, and Arabic studies (Al-Shamekh, 1985: 106).

recession which delayed the construction of schools and the training of teachers, with the result that education was limited to memorising the Quran and the Hadith and learning to read and write in the framework of the *katateeb* (Al-Obeidi, 1986, cited in Al-Hameed et al., 2007).¹¹ Formal education emerged over the ensuing centuries, beginning during the first Saudi state from 1744 to 1818 (Ministry of Municipal and Rural Affairs, 2012). Al-Saloom (1991) identifies three stages of its development, traditional, formal and private, as explained in the following subsections.

2.2.1 Traditional approach

Boys and girls studied together until the age of eight (Al-Mansour, 2005: 222), after which they were separated (Al-Dahar, 2002). There were special *katateeb* for girls, taught by female sheikhs (teachers), where the content was similar to that for boys (Muner, 2015). The mosques and *katateeb* accepted pupils of all ages, and Muslim scholars were the teachers (Al-Esa, 2010: 15). The *katateeb* was for five or six years (Al-Shamekh, 1985), although in some regions it might be only one to four years, depending on the pupils' ability (Al-Hameed et al., 2007). The subjects taught included the Quran, the Hadith, *tawheed*,¹² jurisprudence,¹³ *tafseer*,¹⁴ *sarf*¹⁵, rhetoric, literature, logic, arithmetic, reading, writing (Al-Saloom, 1991), dictation, Arabic font (Al-Shamekh, 1985),¹⁶

¹¹Katateeb are traditional child-rearing and educational institutions; they emerged in the early Muslim communities in order to raise children and teach them ideal Islamic education (Al-Ageel, 2005:72). Katateeb are small rooms that were used by a number of sheikhs to teach writing, reading, principles of maths and memorizing the Quran (Al, Hameed et al. 2007). The function of these institutions is similar to that of preschools and primary schools in the modern era.

¹²Tawheed refers to the characteristic oneness of Allah, who is the unique and only God, with no son, daughter, partner, peer or any kind with whom His authority is shared; the only creator of something out of nothing; the only source of the rules by which Muslims live, the only judge and the only one that should be obeyed (Al-Islam, 2017a).

¹³Jurisprudence or *fiqh* is the source of Islamic law; it focuses on the explanation to humanity of the Quran, Allah's means of conveying His law; it is the skill of gaining a deep and particular understanding of religious texts and deriving obligations and restrictions from these sources in order to establish a legislative framework (Al-Islam, 2017).

¹⁴Tafseer is the Islamic discipline of understanding and explaining the meaning of the Quran, extracting legal judgements from it and grasping its essential truths (Saqa, 2010).

¹⁵Sarf is a science relating to the rules for building Arabic words, its conditions and Non-syntactic provisions. It explains how to write a single word by indicating its weight, number of letters, diacritics, order and what is presented for that change, deletion, originality or increase (Al-Fadhli, 2011: 7).

¹⁶Or the Islamic art of calligraphy, a tradition which includes learning manually the handwriting of Arabic alphabetical letters, words and phrases in different forms using special brushes and

accounting, engineering and business (Muner, 2015). Before the Ottoman Empire came to the Hijaz in 1516 (Ochsenwald, 2016), education in the *katateeb* was completely outside state control and was managed by sheikhs (Bin-Dohaish, 1986; Muner, 2015); in the late 19th century, it was managed by the Ottomans (Al-Hameed et al., 2007; Ochsenwald, 2016: 28).

The pupils (boys and girls) were tested by the sheikhs through reading aloud or writing down what they had learned; those who passed these assessments, moved on to the next level (Abas, 2013).

2.2.2 Formal education (Ottoman)

The first Ottoman school was established in 1884 or 1885 in Mecca and the second in Jeddah in 1910. The Turkish language was used. There were three stages: primary (three years), *rachidia* (three years) and secondary, which was of two types (five and seven years) (Al-Hameed et al., 2007). This free education was sponsored by the Ottoman state.

2.2.3 Private formal education

The provision of private formal education was close to current traditional education in terms of curriculum and teaching methods. It began in the Western region of the Empire and the first school opened in 1875 (Al-Hameed et al., 2007: 31). Some private schools were free, others fee-paying (Mursi, 1988). The schools taught Arabic, religion and history.

2.3 Saudi state education system

Modern state education in Saudi Arabia has passed through two stages. The first of these was the 'scientific establishment stage' (1901-1925), when free education was based on a number of principles: the development of religious

pens; it differs from writing, which is the representation of the read text through the tongue into handwritten spelling or otherwise. Writing serves reading and helps to develop it and its performance.

faith and morality; equality of educational opportunity for every male citizen; upholding human rights; and mental development. It was designed to be contemporary, while maintaining the traditions of the past and the principle of ongoing integrated education (Al-Ageel, 2005: 76, 77; Al-Hameed et al., 2007).

The 'educational stage' covers the time since the Education Administration (now the Saudi Ministry of Education) was established in 1925.¹⁷ Educational rules and regulations followed (Al-Hameed et al., 2007: 33). The state began opening schools throughout the country (Al-Ageel, 2005: 78). In 1926, it established the Saudi Scientific Institute (at highschool level) to train male teachers (Al-Hameed et al., 2007) and the first curriculum in Saudi Arabia was prepared for this programme by Sheikh Al-Kassab (Hakim, 2016). State primary education for male pupils was introduced in 1932 (Al-Hameed et al., 2007:84). Intermediate level education was then established, along with technical and vocational schools. The development of male education preceded female education, although today there is convergence (Al Hammed et al, 2007: 99).

Although educational provision was universal (Al-Hugail, 1993: 31), attendance of their children at school was optional for parents until 2004 (Alarabiya, 2004) when the Ministry of Education made pupils attendance compulsory; however this decision has not been activated up to date (Al-Thubaity, 2013). There remain some issues in achieving mandatory attendance. Mansi, Ahmad and Demiati (1990) elicited the views of 280 randomly selected secondary school pupils (boys and girls) from eight schools in Madina El Monawara, Saudi Arabia. Many reasons were given for pupils' absences: the teachers, the school curriculum, the school environment, personal interests, psychological factors, health and family.

The first male state highschool opened in 1953; the first state secondary school in 1958/59 and the first state pre-school in 1966 (Al-Hameed et al., 2007).

Higher education began in 1949 with the College of Sharia for male students in Mecca and the first university in Riyadh in 1957 (Al-Hameed et al., 2007).

¹⁷In 1925, the Administration was responsible for male schools only. In 1960, the Saudi government established the General Presidency for Girls' Education, which was responsible for female schools only. In 2002, the General Presidency for Girls' Education was merged with the Saudi Ministry of Education (founded in 1953) (Saudi Ministry of Education, 2016).

In 1997, the Saudi Ministry of Education launched the Comprehensive Project for Developing the Curricula, which aims to include the latest educational theories and modern scientific methods (Al-Hameed et al. 2007; Al-Abodi, 2010). Curricula for male and female pupils are similar (Al-Rabah and Alsagar, 2009), apart from physical education for boys, and cooking and home management for girls (Al-Ageel, 2005; Al-Mahdi, 2006). However, from 2009 the Ministry of Education separated the girls' curriculum from the boys' in four subjects (chemistry, physics, mathematics and biology) because of the low marks of female pupils in these subjects (Al-Mutairi, 2009).

Primary school pupils are able to enter school when they are six years old. Parents register their children for their preferred school via the Ministry of Education website. After receiving initial acceptance from the chosen school, parents are required to visit the school and complete all the requirements for registration. In some cases, parents who are unaware of the qualifying age may miss the registration period. Although there is a list of all children's names and their dates of birth, it is not used to contact to the parents. Late registration can be an issue, for example where pupils aged 12 or more enter first Grade.

To protect their honour of females, traditional thinking (Al-Esa, 2010: 80) did not allow girls to be educated outside the home. The fear of female education which was common in Saudi society arose from concerns that there would be rebellion against Islamic rules and a desire for equality with men (Al-Sadhan, 2006). Some families taught their daughters at home with female teachers (Islam, 2016). In this study, it was found that some families allowed their daughters to go to primary school only, while sending their sons to secondary and high schools, because they believed that girls should learn only reading and writing, which were sufficient for their role as housewives, whereas boys should be prepared for a life of work.

In 1956, the private National Girls' School in Mecca began to offer female teacher training (Al-Sunbul et al., 1996: 102). Secondary school graduates were eligible to join the preparation programme to be teachers. Indeed, there was an indication of the extent of the non-compliance of some families to the Saudi government's request regarding sending their daughters to the school (Al-Karif,

2004). In 1963, the Ministry of Education opened the first state secondary and high schools for girls (Al-Hameed et al., 2007). The first state pre-school for girls was established in Riyadh in 1966 (Saudi Ministry of Education, 1979: 29). Higher education also became available. All types of education (state, private, higher, special, vocational training, technical and distance) are now open to females (Saudi Ministry of Education, 1996).

Despite these developments, there remain problems in girls' attendance at school because of parents' cultural (e.g. girls are to be homemakers rather than scholars; or that they only allowed to them attend primary schools to learn writing and reading until they are 12) or religious priorities (i.e., that religious education in mosques has a bigger priority) (Al-Bekar, 2013). There is no system for pursuing nonattendance at school. Perhaps not surprisingly, Al-Aktar (2011) reports that boys were outperforming girls in school.

The literacy of pupils within the state education system is measured through continuous assessment. However, a number of studies (e.g. Al-Suikan, 2010; Al-Otaibi, 2011; Al-Sheim, 2012; Al-Ofi, 2013) of hearing primary pupils have criticised this system because of the low levels of pupils' achievement linked to the absence of properly constructed tests. These studies indicate that continuous assessment has failed to achieve its aims for several reasons:

- Primary school teachers are not trained in continuous assessment;
- Teachers' workload is too heavy;
- Classes are too large.
- There is no unified mechanism for the monitoring of continuous assessment.

There have been recent changes to this process in state schools (Hssen Programme, 2012) but this has not yet been applied to Deaf pupils.

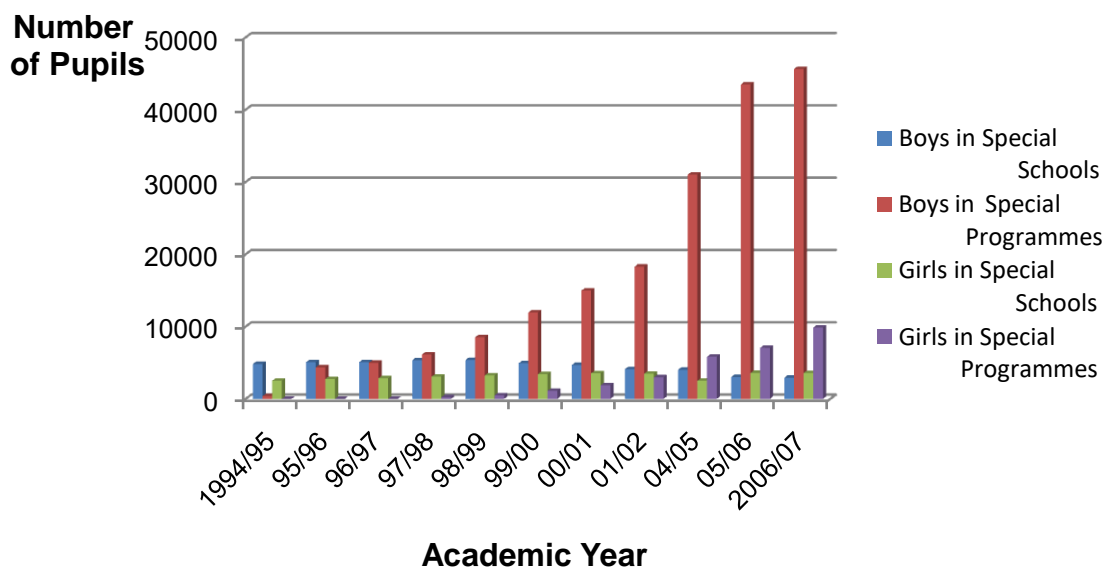
These studies contrast with the statistics regarding literacy described in Section 2.9.3.

2.4 Special education in Saudi Arabia

Special education was set up in order to comply with Islamic law (Abdulwasi, 1983: 33), to satisfy the state's interest in diversifying education to meet individuals' and institutions' needs, and to keep up with trends and contemporary educational concepts such as Education for All (Al-Hameed et al., 2007: 207). The Institute for Blind Boys opened in 1960 with 40 male pupils (Ministry of Education, 1998: 58), followed by the Institute for Deaf Boys in 1964 (Al-Ageel, 2005: 177).

There was rapid expansion, as Figure 2.1 shows. The number of special education institutes and programmes increased from 48 (for 5,208 boys) and 18 (for 2,517 girls) in 1994/95 to 2,268 institutes and programmes (for 48,546 boys) and 971 (for 13,439 girls) in 2006/2007 (Al-Moosa, 2014: 26, 27). The number has since gone down due to the inclusion of Deaf pupils in mainstream schools.

Figure 2.1 Number of pupils with special needs in special education schools and programmes, 1994/95 to 2006/07



Source: Al-Moosa (2014: 27). 18, 19

¹⁸ The data for 2003/04 are not available.

¹⁹ These statistics include blind, Deaf, hard-of-hearing and autistic pupils, as well as those with mental, physical, emotional, behavioural and communicative disorders.

Since 1997/98, the number of special programmes for boys has increased after the move to integrate Deaf pupils in mainstream schools; however, this was not applied to girls until 2004/05.

In 2014/15, learners with special educational needs constituted 0.98% of the 5,724,465 pupils in Saudi schools (2,776,461 boys and 2,948,004 girls)²⁰ (GASE, 2016b). Table 2.1 shows the overall number of boys and girls within the special institutes and programmes in mainstream schools in 2014/15, by disability.

Table 2.1: The number of pupils with special educational needs in 2015/16

Gender	Blind	Deaf and Hard-of-Hearing	Mental Health	Autism	Multiple Disability	Learning Disability	Attention Deficit and Hyperactivity	Total
Boys	1065	3941	12622	1277	498	14681	89	34173
Girls	972	2277	6829	437	69	11544	41	22169
Total	2037	6218	19451	1714	567	26225	130	56342

Source: GASE (2016a).

The number of Deaf and hard-of-hearing pupils (preschool, primary, secondary and highschool) in all the programmes (i.e., special and mainstream schools) is 6218; it constitutes 0.11% of the total number of pupils in Saudi schools²¹ and 11.04% of special needs pupils. However, it is also important to note that some

²⁰This category includes pupils from preschool to the end of highschool, excluding adult students in illiteracy programmes in 2015.

²¹ Based on the statistics of the Saudi Ministry of Education in 2013, the number of Deaf pupils in Saudi Arabia was 2187 boys (GASE, 2014a) and 1147 girls (GASE, 2014b). This included 461 boys studying in special schools (institutes), 11 boys studying in evening Alamal programmes attached to special schools (Appendix 1), 1629 boys in special programmes within public schools and 86 boys enrolled in evening Alamal classes attached to public schools. The numbers of Deaf girls in special schools and in special programmes within public schools are not available. The remaining Deaf pupils are in dual handicap programmes (46 boys; 2.06% of Deaf pupils; no data for girls) (GASE, 2014a, 2014b).

Deaf or hard-of-hearing pupils do not enter school until relatively late in their childhood.

2.5 Deaf education in Saudi Arabia

There were no schools for Deaf pupils 50 years ago (personal communication with, Abas, 2013, older Saudi Deaf woman). Some Deaf pupils were taught at home by private teachers using 'listening, written and spoken language, i.e. oral communication. Wealthy families sent their Deaf children abroad to study in countries such as Egypt, Kuwait or Germany, which had more developed deaf education at the time (Abas, 2013).

The General Administration of Special Education (GASE) established the first residential school for Deaf boys in 1964 (Saudi Ministry of Education, 1986: 132) (Table 2.2). The school started with four classrooms at nursery and preschool levels. In 1965, GASE opened five boys' classes and three girls' classes in the same school (Centre of Statistical Information and Educational Documentation, 1986: 132). Others followed.

Table 2.2: Growth in the numbers of Deaf schools and Deaf pupils (1964-1985)

Year	Schools for boys	Number of pupils	Schools for girls	Number of pupils
1964	1 residential school	27 boys	-	-
1965		28 boys 19 girls	-	-
1969	1 residential school	22 boys preschool 69 boys primary school	1 residential school	72 girls preschool 24 girls primary school
1985	6 residential schools	148 boys preschool 522 boys primary school 189 boys secondary school	4 residential institutes	115 girls preschool 315 girls primary school 75 girls secondary school

In 1972, Saudi Deaf institutes were subject for the first time to regulations, which covered study at these institutes, the curriculum, stages and types of pupils according to their degree of hearing loss and special needs. Sometimes, however, pupils were registered at the nearest school to their home, even if it was not of a type (i.e. special or inclusion school) appropriate to their needs.

In 2014, there were 12 special schools (institutes) in Saudi Arabia for Deaf boys and 12 for Deaf girls (GASE, 2014a, 2014b) (Table A.1 in Appendix 1: gives more information about educational options for Deaf and hard-of-hearing pupils). This is a lower number than in 2004/05 (29 schools for boys and 35 for girls, Al-Moosa, 2005: 13). The reduction was due to a move towards mainstreaming.

There are no adequate statistics for the numbers of Deaf adults; this lack of data has led to various claims. According to Al-Othman (2014), the number of Deaf people in Saudi Arabia is growing more rapidly than for any other disability, for several reasons including the frequency of consanguineous marriage. We assume that the percentage of Deaf people in Saudi Arabia is similar to that of most countries worldwide which is 5% of the total population.

Entry into a Deaf school requires a hearing loss greater than 70dBHL and the use of any assistive listening device such as hearing aids and cochlear implants (GASE, 2001: 19). Audiological testing procedures vary between urban and rural areas and whether they are carried out at school or in specialist centres (Management of Auditory Handicap, 2015).

2.6 Diagnosis and parents informing schools about Deaf children

In some hospitals, the child's hearing is examined directly after birth. If she/he is diagnosed as hard-of-hearing or Deaf, the family is informed by the doctor. The family is advised to use hearing aids or obtain a cochlear implant and use speech to communicate with the child. However, there is a lack of intervention programmes nationally, so most children have no access to communication; the children do not use hearing aids because of the high costs and families' lack of awareness of support centres which provide free hearing aids. Even when children receive cochlear implants, there may be no follow-up service.

2.6.1 The assessment panel

In the support centre, each child is assessed by a team consisting of psychologist, social worker, speech therapist, audiologist and ear mould manufacturers. The child's hearing is first re-assessed if necessary, then, the social worker meets with the mother or female caregiver (because these are female-only centres) to study the child's social and economic status. Next, the psychologist conducts the Binet test (a verbal IQ test used with hearing pupils) to assess the Deaf child's intelligence, which would disadvantage most Deaf children with typically poor verbal skills. Finally, the speech therapist (or teacher of Deaf children) conducts some linguistic tests and measurements to determine the Deaf child's linguistic abilities. No measures of non-verbal ability are used with Deaf children. The team's report is sent to the GASE which makes the final placement decision.

2.7 Legislation and guidance for Saudi schools for Deaf pupils

All Deaf schools and programmes are required to follow policy on educational plans, staff and resources, according to part 4 of the legislative rules for special education programmes, under Ministerial Order 1674, issued on 27.6.2001 (GASE, 2001: 17). These plans were designed for Deaf and hearing-impaired pupils at all school stages.

The general regulations stress the importance of early intervention for Deaf children, integrating them with their hearing peers and using appropriate modes of communication. However, the emphasis is on the use of residual hearing, and speech and on language training.

2.7.1 Preschool services

Preschool services for Deaf pupils are not well developed. The pupils may attend at three years old, but often do not register officially until five years old, because of parents' lack of awareness. The public curricula for hearing preschool children are used with Deaf children, but the focus is mostly on speech therapy. Most Deaf pupils do not begin to learn sign language until they enter primary school; the percentage who come from Deaf families, who would already be fluent in SaudiSL, is not known.

Deaf pupils are likely to be delayed linguistically and their teachers may face challenges in communicating with them. Deaf preschool pupils are required to be taught by female hearing teachers who have the necessary skills to communicate with Deaf pupils (Management of Auditory Handicap, 2014). However, these teachers are specialized either in Deaf education or in early childhood education, but very rarely in both. The preschools aim to teach basic Arabic skills (Al-Turky 2005: 148). Al-Wahib (2008) surveyed 111 specialists (audiologists, speech therapists) in the field of early intervention services for Deaf pupils and concluded that early provision of sign language for Deaf pupils occupied the lowest priority.

2.7.2 Primary school services

At age six, Deaf pupils begin gender-specific primary schooling with either male or female teachers. Pupils older than six years can also be registered in Grade 1; even Deaf pupils beginning their education at the age of 15 may begin primary school at Grade 1. Deaf girls whose parents believed that their daughters would not benefit from education because of their hearing loss may enter education at this delayed age. Deaf pupils are expected to study at Grades 1-6, then move to secondary school at age 13. However, Deaf pupils aged 18 can still be found in primary schools due to the weakness of their academic level or because they entered primary school late (Basonbul, 2012).

2.7.3 Teaching methods

The general principle is that Deaf pupils should be educated in a suitable way including Total Communication (TC), Oral Communication and sign language (GASE, 2001: 17). The terms Saudi Sign Language (SaudiSL) and Arabic Sign Language (ArabicSL) are rarely used by Deaf people in Saudi Arabia, where sign language is known as 'signing'. A comparable situation in Britain was described by Kyle and Woll (1983). At the time when research into British Sign Language (BSL) began, Deaf people did not recognise BSL as a language.

The official recognition of SaudiSL occurred in 2015, as announced by the Education Minister, Azzam Al-Dakhil, through his official Twitter account (Al-Dakhil, 2015). However, no noticeable action has followed, especially in the

context of ministerial changes in the last two years. On entry to school, pupils may begin to learn sign language from their teachers, from their classmates who come from Deaf families or who have Deaf siblings and/or from senior Deaf pupils in the school. Nothing of the history of SaudiSL is known of the history of SaudiSL, which appears to be a fairly new language. The Arabic manual alphabet, shown in Figure 2.2, is also used by Deaf and hearing people in Saudi Arabia, to represent the Arabic alphabet through fingerspelling. The shapes of the letters derive from their written form in Arabic.

Figure 2.2: The Arabic fingerspelling alphabet



Source: The Arab Dictionary of Gestures for the Deaf (2001: bb).

A variety of different communication approaches are used by teachers of Deaf pupils in Saudi Arabia. Al-Zahrani and Al-Onizi (2012) used a questionnaire with 188 male teachers in all special primary schools and programmes and inclusive schools for Deaf and hard-of-hearing pupils in Riyadh to identify the teachers' use of different forms of communication. The teachers of Deaf pupils reported that they used TC, while teachers of hard-of-hearing children used spoken language. A similar result was reported in a 2013 study by Al-Nagy and Al-

Rayes, which collected responses from 65 male hearing teachers as to the most common teaching techniques used in teaching reading in four primary schools for Deaf boys in Riyadh. Unfortunately, neither study employed structured sampling across the schools or weighting for numbers of pupils referred to.

Al-Nagy and Al-Rayes (2013) report that the teaching methods most often used by respondents were traditional ones such as repeatedly translating the text in sign, translating the written text word by word from the title to the end of the text, ensuring the pupils' understanding of the text by asking them to translate it, or focusing on teaching the sounds of letters and the pronunciation of words. Four teachers, who had basic skills in sign language, reported using more modern methods, such as raising questions related to the text to encourage the pupils to interact, or discussing the main idea of the reading text in sign language before starting to teach details. However, the research involved no classroom observations and no attempt to determine the validity of the responses.

Al-Rayes (2006), although supporting the official adoption of SBE in Saudi Deaf education, identifies several potential obstacles to its implementation in Saudi Arabia. These are negative attitudes towards Deaf people and sign language, the fact that the grammars of SaudiSL and ArabicSL have not been studied, teachers' lack of training in a bilingual/bicultural strategy, the small number of Deaf education specialists and the lack of Deaf history and culture studies in Saudi Arabia and the Arab world. Al-Rayes (2006) does not mention the importance of including a deaf professional in an SBE programme as a Deaf role model. Al-Turky (2008) also suggests that oral communication, which is at the basis of the Saudi education policy, could be a further obstacle to the implementation of SBE. In addition, there had been no practical implementation of SBE until the quantitative study by Al-Rayes and Al-Awad (2013), mentioned in Chapter One.

In a recent study identifying the level of reading comprehension of 93 Deaf pupils and 51 hearing pupils at nine primary schools in Riyadh, Al-Zubairy

(2015: 337) found no improvements in literacy in classes claiming to use TC. Thus, SBE remains to be systematically examined in the Saudi context.

2.8 Training programmes

2.8.1 Teacher training

There being few specialist teachers of the Deaf in Saudi Arabia, the Ministry of Education has in the past brought in (often unqualified) teachers. According to Al-Dabas (2008) and Al-Qahtani (2014) (the latter being a Deaf government employee), they used lip-reading and spoken and written Arabic in teaching Deaf learners.

There were 1595 male school staff working in Deaf education in 2014 (a ratio of 1:2.5 boys), comprising 684 classroom teachers, 639 subject teachers, 124 social advisors, 25 pronunciation training teachers, 51 teachers of behavioural training, 54 technicians and 18 lab assistants (GASE: 2014a).

In the same year, there were 970 female teachers working in Deaf education, 164 of them in special schools (GASE, 2014b).²² The ratio of the number of teachers to female pupils is 1:7. The training of teachers of the Deaf began in 1984 in Saudi universities (Al-Moosa, 2008) through the Departments of Special Education (Hearing Impairment) which provided theoretical courses but did not provide sign language courses (Personal communication, Anon,²³ 2014b).

Training to teach Deaf and hearing-impaired pupils (the Hearing Impairment Pathway) is available in seven Saudi universities. Entry requirements for the four-year (126 unit) bachelor degree vary between universities. The content of the bachelor programmes is 80% general and specialist theoretical courses,²⁴ including only one course of sign language training, and 20% field training in schools for the Deaf or hard-of-hearing. A student is free to choose his or her placement; this may lead to reduced competence to teach in sign language

²²There are no further details of the statistical data.

²³The word 'anon' is used in this research to designate informants who asked not to be identified for fear of retribution from their employers.

²⁴All universities provide similar courses for the hearing-impaired path: a) general preparation courses such as introduction to special education and evaluation and diagnosis in special education, and b) special preparation courses such as language development in Deaf people (KSU, 2016).

within Deaf schools, if the placement choice is not appropriate. A master's programme also exists. Teachers are allocated to schools through open competitions held by the Ministry of Civil Service.

2.8.2 Deaf higher education

In 2004/05, King Saud University registered 12 female Deaf students to study in the Education College of Home Economics (Akhdar, 2014). In 2012, some universities registered male students in three faculties (Al-Zahrani, 2012). Since 2007; however, many Deaf students have complained that they have been unable to secure a university place (Al-Gamdi, 2015) because their deafness meant that they did not meet the universities' requirements (Al-Harbi, 2007). Mothers of Deaf high-school girls have claimed that the universities accept only hearing and hard-of-hearing students (personal communication). The situation for Deaf girls is likely to be worse.

Deaf university students are taught the standard curriculum by hearing staff, without sign interpreters (Al-Harbi, 2007) and mostly without other support or preparation. Akhdar (2005) and Al-Kuzama (2008) found that Deaf students failed academically and/or withdrew from universities because of their weak academic level. In 2012, King Saud University offered a one-year rehabilitative programme to help Deaf and hard-of-hearing students' reading and writing skills and qualify them for admission to the preparation year (Al-Rayes, 2016).²⁵At the time of undertaking this study, only one Deaf student had graduated with a master's degree from the new programme, according to Al-Habib (2016).²⁶

2.8.3 Deaf staff in schools

Deaf staff are chosen through open competitions in the Ministry of Civil Service (Al-Qahtani, 2014). For more than 25 years, the Ministry has employed Deaf secondary school graduates, who are not required to have experience because their employment is limited to administrative jobs (Al-Qahtani, 2014). Although Deaf teachers are not officially sought, a male activist in the Deaf community

²⁵Hearing students only need one preparation year, while Deaf students need two years: a) rehabilitative, where they study the Arabic language, and b) preparation.

²⁶No further information could be obtained about the number of Deaf staff on the programme or the nature of their work.

said that one Deaf assistant teacher worked in a Deaf school in Western Saudi Arabia but he did administrative work, 'because he's not fluent at a Deaf school in Western Saudi Arabia but that he did administrative work, "because he's not fluent in reading and writing" (Anon, 2014a). Al-Qahtani (2014) reports that there were some 260 Deaf employees who were first employed as 'clerical workers' through the contracts system; they were subsequently officially employed by a Royal Order. The Ministry of Civil Service sets no regulations about employing people with special needs and does not provide jobs for Deaf people in education, possibly because it is believed that they are unable to teach and because of their poor literacy (Al-Twajeri, 2010; Al-Qahtani, 2014).

2.8.4 Administrators and interpreters

The recruitment of administrative (e.g. librarians, monitors and secretaries) and professional support services staff (e.g. doctors, nurses, psychologists, social advisors and audiologists) is done via the Ministry of Civil Service following the same method used in the recruitment of teachers in Deaf schools. Based on the Saudi regulations of Deaf education, such staff have to be qualified and experienced in their fields; however, is no requirement to be qualified in hearing impairment or to be fluent in sign language in order to work in Deaf schools. Despite the decision in 2007 by the Ministry of Civil Service to provide jobs for sign language interpreters (Al-Turky, 2007), they have no presence in Saudi Deaf schools because the Ministry of Education does not want Deaf pupils to rely on sign language.²⁷

²⁷Across Saudi Arabia, of a total of 33 interpreters, 26 are casual volunteers and seven have obtained permanent jobs in 3 of 35 different government agencies (Formal and Academic Demands of Interest with Situations sign language Interpreters, 2013). According to a personal communication (Anon, 2014b), only seven male and four female interpreters have been recognized as qualified. The interpreters have no presence in Saudi deaf schools or programmes; it was said that their work is 'outside Deaf institutes'. One male interpreter who was officially appointed to the role of interpreter in a Deaf institute was transferred to an inclusive school to teach hard-of-hearing pupils in order not to depend on working exclusively in an sign language context (Anon, 2014b). In Saudi Arabia, there are no standard sign language training courses; therefore, many of the current professional interpreters acquired sign language from Deaf members of their families (Anon, 2014b).

2.8.5 What happens in practice?

In Saudi Deaf schools, it appears that many policy makers and educators (Head Teachers, Deputy Head Teachers, some non-specialist teachers²⁸ and supply teachers²⁹) are unqualified in the Deaf field. This is due to a mix of nepotism, personal relationships, poor enforcement of qualification requirements and lack of publicizing of certain job postings.

The pedagogy and method of managing the schools' plans may be inadequate, as staff may not recognize the needs of other staff (i.e. teachers). This shows that it is difficult to create an sign language environment in school and to encourage signing at home. The lack of proper training among teachers also affected the collaboration among Deaf assistants in our intervention. The situation in Saudi Arabia is completely different from that in schools for Deaf pupils in the United Kingdom. Hanna (2005), in his master's dissertation, investigated the views of the head teachers of six British Deaf schools (three bilingual schools and three using sign language but not officially bilingual) concerning the problems of implementing SBE. Hanna found that the most troublesome issues were monitoring the use of sign language and ensuring that Deaf staff had access to the schools' policy/arrangements.

2.8.6 Services for Deaf learners

A number of government agencies have responsibility for Deaf pupils. Within the Saudi Ministry of Education, GASE is responsible for providing appropriate educational services for Deaf pupils, assessing them psychologically, socially and academically and placing them in school (GASE, 2016).

Deaf pupils are assessed in one of the Deaf schools by two teachers who are nominated by GASE. No standard measurement tools are used for assessing the pupils' ability to enter the school or to identify which grade would be suitable for them. Each pupil is asked different questions, randomly selected by

²⁸These teachers were employed officially by the government in a public school, but were later transferred to work in Deaf schools because they specialised in subjects such as maths or chemistry, despite having no experience in deaf education.

²⁹Supply teachers are nominated by head teachers as replacements for essential teachers who are absent because of exceptional circumstances or maternity leave.

assessing teachers. There is some linking to curriculum levels and placement is recommended at the level at which the child is seen to fail, or in some cases, according to the speech level of the child. In the Saudi special education system, the pupil's age is not taken into consideration. An American study by MacMillan, Gresham and Forness (1996) found that a large age range in a group of pupils might have a general negative effect on children with special needs, exacerbating problems of interaction associated with large differences in age.

Social services provide a pupil advisor, a psychologist and a social worker for each child. Although this team has generic skills, its members may have no special training to work with Deaf pupils. The Ministry of Health (2015) carries out an auditory examination, provides preventive, curative and rehabilitative services, trains health workers to interact with Deaf pupils and trains families on how to deal with their Deaf children (Ministry of Labour and Social Development, 2000). In-school teams have been reduced in recent years as more pupils are mainstreamed.

Saudi Deaf pupils in theory receive a monthly allowance, free hearing aids, free transportation and free snacks (GASE, 2001), but the payment system does not always work smoothly. Parents may use the monthly allowance other than to meet Deaf children's needs or sometimes to buy their hearing aids (although these are meant to be free). In any case, the allowance may not be enough to cover all costs. Lack of transport to and from school is a further issue for Deaf pupils in general and for girls in particular.

2.9 Current educational status of Deaf pupils in Saudi Arabia

2.9.1 Placement criteria

The Deaf pupil progresses through educational stages, assuming that the teacher awards a pass mark at the end of each school year. If a pupil fails, the teacher continues to present the test until the pupil passes. Table 2.3 and

Table 2.4 illustrate the number of Deaf boys and girls in special schools and programmes in Saudi Arabia.

Table 2.3: Numbers of Deaf and hard-of-hearing boys by type of school and hearing status in 2013/14 and 2015/16

Year	Type of school	Hearing status	Subtotal	Total
2013/14	Special schools	Deaf	2233	4659
	Programmes in special and mainstream schools	Hard-of-hearing	2426	
2015/2016	Special schools and programmes in special and mainstream schools	Deaf and hard-of-hearing	-	3941

Source: GASE (2014a; 2016a).

Table 2.4: Numbers of Deaf and hard-of-hearing girls by type of school and hearing status in 2013/14 and 2015/16

Year	Type of school	Hearing status	Subtotal	Total
2013/14	Special schools	Deaf	1147	3046
	Programmes in special and mainstream schools	Hard-of-hearing	1899	
2015/2016	Special schools and programmes in special and mainstream schools	Deaf and hard-of-hearing	-	2277

Source: GASE (2014b; 2016a).

The tables show substantial differences in numbers and placements between boys and girls.

2.9.2 The curriculum in Saudi Deaf schools

Since 1964, several curricula have been used in special schools for Deaf pupils (Management of Auditory Handicap, 2014). No studies have been published on their relevance to Deaf pupils' capabilities and needs. However, in a personal communication (Anon, 2013), it was reported that between 1964 and early 2003, schools applied a special curriculum which was developed by a group of male teachers; and adapted for use in special schools for Deaf girls.

This curriculum was considered to be simplified, but it did not help the development of the language of Deaf pupils (Anon, 2013). In a study involving male and female hearing teachers of Deaf pupils, Al-Matroudi (1995) found no relationship between the objectives of the curriculum and Deaf pupils' needs.

2.9.3 Achievement of hearing pupils

For comparison purposes, it is important to know how many people in Saudi Arabia can read Modern Standard Arabic (MSA). However, there are no reliable statistics on literacy. The only available data are based on self-assessment, where respondents are asked if they can read. Those statistics that exist seem to be contradictory and it is difficult to know which to rely on. It nevertheless appears that illiteracy has fallen in Saudi Arabia in recent decades, from 12.01% among males in 1997 and 40% among females in 1994 to 3.21-4% among males and 10% among females in 2013 and 2015 respectively (Al-Hagbani, 2013; Shada, 2015). According to estimates by the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2015) (Table 2.5), in both 1992 and 2015 the number of illiterate females aged 15-24 years was larger than the number of males; however, in 2015 the difference between them had substantially reduced.

Table 2.5: Numbers of illiterate people by gender and age in 1992 and 2015

Age	Year	Number of illiterate people		Total
		Male	Female	
(Youth) 15-24 years	1992	100,553	255,424	355,977
	2015	15,167	16,825	31,992
(Adults) 24 years +	1992	1,106,820	1,468,880	2,575,700
	2015	388,560	741,230	1,129,790

Source: UNESCO (2015)

In 2015, a separate analysis reported literacy rates among adults (aged 15 years and older), youths (aged 15-24 years) and the elderly (aged 65 years and older) as illustrated in Table 2.6.

This table and Table 2.5 are based on different data and cannot be exactly reconciled; nor can the percentages be turned into actual figures.

Table 2.6: Literacy rate in Saudi Arabia by gender and age in 2015³⁰

Age	Literacy rate (%)		
	Male	Female	Total ³¹
(Youth) 15-24 years	99.39	99.31	99.35
(Adults) 15 years and older	96.95	91.84	94.84
65 years and older	70.4	40.28	54.37

Source: UNESCO (2015)³²

Table 2.6 indicates that only a little over half of people aged 65 years and older were literate, representing an undesirably high rate of illiteracy in Saudi Arabia. There is no information on the literacy of children leaving primary education.

In 2016, the General Authority for Statistics (GAS) interviewed 33,350 Saudi and non-Saudi families³³ from 1300 of the 3600 Saudi regions as part of a demographic survey³⁴ (GAS, 2016a). Table 2.7 shows figures on illiteracy derived from this study. Because the different bases for data collection, it is again impossible to reconcile these data with the figures reported above. Such a statistical exercise is in any case very weak because there is no educational measure of literacy.

We can nonetheless deduce that there is a significantly greater problem for Saudi women over the age of 30 years, when the reported illiteracy jumps from near parity with males, to double, then treble and five times greater at the age of 40 years. However, even here, without access to the precise population age breakdowns of the samples at each age group, we cannot be precise. The same applies to the figures for those over 60 years, where the difference between males and females drops to only double. This could be simply due to general population distribution or to the fact that there are increased numbers of males who cannot read.

³⁰The UNESCO studies provide no information on how literacy was measured or whether Saudi citizens and non-Saudis were involved in the studies.

³¹For each age range, the total literacy rate is the percentage of the total population in that age range who are literate.

³²UNESCO derived these data mainly from national population censuses, household surveys and labour force surveys.

³³Families in the survey include the head of the family who was interviewed and speaks for the whole family, aged over 15 years (male or female; married/unmarried) (p. 16).

³⁴The survey was conducted between 29/4/2016 and 7/6/2016.

Table 2.7: Numbers of illiterate people by gender and age in 2016

Age group (Years)	Number of illiterate people		
	Male	Female	Total
10-14	7102	6409	13511
15-19	6995	7606	14601
20-24	10615	9403	20018
25-29	10343	13311	23654
30-34	9636	23385	33021
35-39	6890	24432	31322
40-44	11395	58612	70007
45-49	8609	68503	77112
50-54	20820	123337	144157
55-59	18701	84542	103243
60-64	34920	141450	176370
65 and older	112961	285361	398322
Total	258987	846351	1105338

Source: (GAS, 2016a: 89-90).

Given the uncertainty about the measurement of reading and the likely situation that males are prioritised in literacy, it seems likely that if Deaf girls are not reading, this would not be a grave concern for society.

We have to be similarly sceptical about generic statistics on education, such as those in Tables 2.8 and 2.9, which show that the total enrolment of females in secondary school (1,098,859), pre-university diploma, university (1,585,671) and higher education (higher diploma, master's and PhD; 64,678) is lower than the total number of males at each of these stages.

However, females aged 15-64 years who read and write (446,288) comprised a higher percentage (71%) of the population than males within the same age group (181,540). On the other hand, the number of males aged 10-14 and 65 and over (614,384) was higher than the number of females within the same age group (567,812).

These tables are reported to give an indication of the difficulty of conducting research at this level, rather than to make firm claims about Saudi Deaf rather than to make firm claims about Saudi Deaf education.

Table 2.8: Numbers of males (10 years and over) enrolled in school, by age and educational status in 2016

Age group (years)	Educational status									Total
	Elementary	Primary	Secondary	High school	Pre-university diploma	University	Technical	SA's	DhP	
10-14	526851	411537	2257	0	0	0	0	0	0	940645
15-19	8544	212827	530279	133791	3221	0	0	0	0	888662
20-24	6786	19637	91082	777736	57822	72826	249	0	0	1026138
25-29	5436	24507	54147	462075	113009	281058	3290	8332	554	952408
30-34	12915	43852	97031	394171	110673	336091	7056	24649	3204	1029642
35-39	13966	36727	58640	200359	54581	199856	1546	12939	2478	581092
40-44	17517	70995	102546	233617	52624	231430	5059	21644	6201	741633
45-49	15092	48375	70317	125343	35189	109271	3122	11292	4773	422774
50-54	31500	78000	90426	130021	32689	102251	1156	13183	7446	486672
55-59	25999	43416	46829	47485	15551	51613	1546	4636	4208	241283
60-64	43785	62806	39246	34279	17046	39968	988	6479	4137	248734

	Educational status									
Age group (years)	Read and write	Primary	Secondary	High school or equivalent	Pre-university diploma	University	Higher diploma	Master's	PhD	Total
65+ older	87533	63327	33946	27923	14166	21638	724	4731	2713	256701
Total	795924	1116006	1216746	2566800	506571	1446002	24736	107885	35714	7816384

Source: (GAS, 2016a: 89).

Table 2.9: Numbers of females (10 years and over) enrolled in school, by age and educational status in 2016

	Educational status									
Age group (years)	Read and write	Primary	Secondary	High school or equivalent	Pre-university diploma	University	Higher diploma	Master	PhD	Total
10-14	497264	410097	6259	0	0	0	0	0	0	913620
15-19	9095	208620	482792	153595	1771	434	0	0	0	856307
20-24	11792	30781	87778	666523	26124	115669	0	201	0	938868
25-29	18836	37922	75547	366337	46053	371537	2772	8337	0	927341
30-34	30977	58954	105868	341809	40717	398092	2381	18756	1479	999033

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Educational status										
Age group (years)	Read and write	Primary	Secondary	Highschool or equivalent	Pre-university diploma	University	Higher diploma	Master	PhD	Total
35-39	28440	56308	81052	160677	26663	181915	765	8033	1135	544988
40-44	71873	111975	112873	163648	35356	164879	2424	4770	3323	671121
45-49	59954	71246	53210	68911	17227	57091	1070	2090	1037	331836
50-54	99550	73778	54320	61460	10220	53270	1085	930	1342	355955
55-59	56198	37190	19809	18676	6723	12658	0	234	498	151986
60-64	59573	28237	13922	11085	6341	8684	216	972	0	129030
65 and older	70548	15091	5429	4413	1567	2680	300	264	264	100556
Total	1014100	1140199	1098859	2017134	218762	1366909	11013	44587	9078	6920641

Source: (GAS, 2016a: 90).

2.10 Literacy and Modern Standard Arabic

2.10.1 What is Arabic?

The Arabic language, which is the language of the Quran (Islam's Holy Book), has multiple variants. Classical (or Literary) Arabic is the language of Arab literature and poetry and is primarily written (Saiegh-Haddad and Henkin-Roitfarb, 2014). From Classical Arabic (Fusha) emerged a modern variety of this language, Modern Standard Arabic (MSA), which is not usually spoken. It is the official written standard used in education, media and culture across the Arabic-speaking countries (Saiegh-Haddad and Henkin-Roitfarb, 2014) MSA "is syntactically, morphologically and phonologically based on Classical Arabic" (Habash, 2010: 1). The two varieties have closely similar vocabulary and grammar. MSA, however, has changed over time and has lost some classical phrases and lexicon, while adding new lexical elements (Kennedy, 2012: 1).

MSA is significantly different from the third set of varieties, the vernacular Arabic dialects (Hendriks, 2009: 102) in terms of morphology, lexicon, phonology and syntax (Habash, 2010). Although vernacular Arabic differs between countries and over time, MSA has remained unaltered for decades (Katzner, 2002). While Arabic vernaculars are written in Arabic script, there are no standard vernacular spelling systems (Habash, 2010; see also Saiegh-Haddad and Henkin-Roitfarb, 2014: 22), whereas MSA, which is the language used in official Arabic documents, newspapers and books, has the same sentence and grammar structure as the Qur'an (Alosh and Grandin-Gillette, 2012).

There thus a mismatch between spoken and written Arabic, as both spoken MSA and the colloquial Arabic dialects differ in a number of respects from written Arabic. Spoken MSA has greater grammatical licence than written MSA, as grammatical endings cannot be omitted in the written form (Kennedy, 2012: 2). While MSA is utilized in formal communications and for writing, Arabic speakers utilize their local vernacular in most informal conversations; speakers may also mix features of MSA or switch between their native dialect and MSA (Kennedy, 2012: 2).

The mismatch between MSA and the vernacular causes difficulties in the development of literacy for hearing pupils, but these difficulties are likely to be much greater for Deaf pupils.

2.10.2 Arabic in Saudi Arabia

Within Saudi Arabia there is also a wide variety of Arabic dialects primarily, reflecting social class and geography (Habash, 2010). Saudi dialects belong to the Gulf Arabic variety and can be divided into five major geographical groups: Western (Hijazi Dialect), Eastern (Gulf Dialect), central (Najdi Dialect), northern (Northern Dialect) and southern (Southern Dialect). Each dialect region has its own three sub-dialects: city, rural and Bedouin (Habash, 2010). Within this tripartite division, there may be further variation based on the relative influence of the dialects of each tribe living in that region. Regional variation is also strongly influenced by the dialects of the neighbouring countries. For example, the urban Hijazi vernacular has been strongly influenced by Egyptian vernacular, whereas Bedouin Hijazi vernacular which still retains many traditional Arabic words not used in Standard Arabic writing. The Gulf Dialect has been influenced by Gulf Arab countries, the Northern Dialect by Iraq, Syria and Jordan, the Southern Dialect by Yemen, that of Iraq, Syria and Jordan, the Southern Dialect by Yemeni Arabic and the Najdi Dialect by the varieties used by various tribes. All these dialects are also influenced by the broadcast media, especially among younger people and those living in major cities.

As mentioned above, MSA is the main language of literacy, the language pupils are taught to read and write in all Saudi schools. The Saudi dialects are not used within the Saudi curriculum although they are widely present in films, songs, television programmes and folktales. This language complexity is an issue even for hearing pupils (Saiegh-Haddad, in press) and presents an enormous obstacle to those who do not hear.

2.10.3 Public literacy curriculum

The Saudi national literacy curriculum for the primary stage (My Language - adapted for Deaf pupils), uses reading texts to teach the four language skills (listening, reading, speaking and writing) and provides language lessons

(grammar, linguistic style, spelling and written graphics) (Al-Humoud, 2015). However, there is some dissatisfaction with its use, as reported by Al-Qahtani (2012) and Al-Qufaily (2014).

The Ministry of Education has removed some of the aims of the reading curriculum for hearing pupils in order to make it more suitable for teaching reading to Deaf pupils. Examples of the aims removed are 'understanding audio-text and considering listening manners' and 'understanding texts and exploring their aesthetics and rhetorical methods' (Saudi Ministry of Education, 2013; 2014:12).

The Ministry has also modified some of targets to make them more suitable for Deaf pupils. For example, the target of "enriching the linguistic account and using it in oral and written communication" (Saudi Ministry of Education, 2013; 2014: 12), as it appears in the hearing curriculum, has been modified in the Deaf curriculum to "enriching the linguistic account and using it in sign and written communication" (Saudi Ministry of Education, 2012, 2013a: 12).

However, these stated aims are not consistent with the text of the curriculum itself, where many of the words are taken from classical Arabic, which is unfamiliar in the daily lives of hearing pupils and even less familiar to Deaf pupils.

Some illustrations of signs appear in the textbooks, but these images are only of single signs, not of sign language, and the pictures are used only for the titles of texts and for the main questions in each lesson. Figure 2.3 shows an example of the signs in the reader for the Grade 2 curriculum for Deaf pupils.

Figure 2.3 Descriptive signs in the grade 2 reader: A boy signs GRANDFATHER SORRY



Source: SME (2012; 2013a: 27).

Mrs. Karima, a non-participating teacher with more than 12 years' experience of teaching reading at primary, secondary and highschool grades in Saudi schools for the Deaf, explained:

The main problem lies in the current curricula, as the old curricula were developed specially for Deaf pupils, which was much better than the existing one, as they contain complex phrases. Most of the challenges that the teachers have faced in teaching Arabic to Deaf pupils are Arabic grammar such as derivatives of words and tools for connection of sentences.

A significant point was also raised by Mrs. Afnan (hearing administrator):

The existing curricula for Deaf pupils were designed by teachers who aren't specialists in Deaf education; therefore these curricula have some target skills which it's impossible for Deaf pupils to achieve [...] Last year, three teachers in the school [USDG2] were involved in the Curricular Development Commission and the evaluation of reading books. [Although they] provided the Committee with some suggestions to improve reading curricula to become more accessible to Deaf pupils, [their] opinions were not considered, without reason.

She also said:

No Deaf staff have been involved in the evaluation of the curricula as only hearing teachers who teach reading all over the country and supervisors of reading teachers from the Ministry of Education were involved.

These issues extend to other curricula. Indeed, the suggestions of Mrs. Latifa, another non-participating teacher, were also not considered by the Committee. She explained that this was because the current maths curriculum was being translated and published by a new publishing company, which has had a contract with the Ministry for several years; no changes would be made before the end of the contract.

Based on the Ministry of Education's regulations and supervisors of Arabic, who are responsible for assessment, teachers of Deaf pupils are supposed to teach the content of the curriculum by the end of each main stage. Within each stage, therefore, teachers have the authority to create assessments and introduce content without following the time set out in the programme of study; however, they may not change the content of the programme completely. Before the end of each main phase, the pupils are expected to know, apply and understand content and to meet the skill and process requirements specified in the relevant programmes of study.

2.10.4 Literacy for Deaf pupils

In school, pupils study a reading text which is presented in each unit in reading lessons; teachers speak and write the text to teach related skills (e.g. grammar, dictation) in the remainder of the Arabic lessons. Each literacy lesson takes about 45 or 50 minutes.

MSA is mostly used by teachers of Arabic and the Quran in Arabic and Quran classes, whereas outside these classes, they use Saudi dialect with the pupils and with each other. A variety of Saudi Arabic dialects are used by the majority of teachers of Deaf pupils to teach reading. Hendriks (2008, 2009) and Nagawah (2015) claimed that the most significant problem for Deaf learners regarding Arabic is the production of grammatical errors due both to the

difference between colloquial Arabic and MSA and to the difference between natural SaudiSL used by Deaf people and hearing people's use of Arabic signs.

Al-Amri (2009) conducted a questionnaire survey of 90 teachers, whose responses indicated that the content of the curriculum did not include Deaf culture, that the design of the material was not attractive to Deaf pupils, that the vocabulary used was not familiar to Deaf pupils at the primary stage, that the topics tended to be intangible and that the activities related to the materials were relevant for hearing pupils only. It is likely that these findings reflect the real experiences of teachers and pupils. Where the teacher and pupil have different life experiences and the text is under the control of a teacher with no personal experience of Deafhood, then problems can clearly arise. The teachers also argued that they had not participated in the formulation of the curriculum content, that the objectives of the curriculum were not obvious to them and that the teaching plan did not allocate enough time to develop reading.

Similarly, Al-Otaibi (2011a) administered self-completion questionnaire to 57 male teachers and 57 fathers of Deaf boys; he reports no statistical difference between fathers' and teachers' responses on the suitability of the curriculum but found a lack of awareness of sign language. However, his study is limited by its design which adopted a quantitative study instead of implementing an ethnographic approach and conducted interviews to investigate the participants' views regarding the Deaf curriculum. The use of a questionnaire was also not appropriate due to the subjectivity level is not recognized as participants might read and reply to each question differently based on their own understanding of the question. There is no way to tell how truthful a respondent is being. The focus on male participants was also a limitation in Al-Otaibi's study as this could make the results biased towards certain gender views which in turn may have an impact on the effectiveness and efficiency of the research.

Al-Abideen (2010) studied the views on literacy of 13 male and 42 female teachers at three primary Deaf institutes in Jeddah (Saudi Arabia). She reports that 49% of the teachers complained of a lack of feedback from the supervisors of teachers of Deaf pupils; 42% of respondents asserted that they were poorly

trained on strategies for modern teaching in the field of literacy; 15% reported that they could not teach reading and writing in sign language; and 76.4% of the sample claimed that the content of the general curriculum was not suitably adapted for Deaf pupils. These responses reflect dissatisfaction with training, practice and the outcomes of literacy teaching.

A new version of the literacy curriculum for Deaf learners has been used since 2013 (see Appendix 2 for an example of a reading text from the Grade 4 curriculum for Deaf pupils). Al-Qabani (personal communication, 2015) states that this was only a minor revision of the public literacy curriculum, with the weekly number of literacy lessons for Deaf learners increased to 10 or 11, compared with nine for hearing learners.

El-Zraigat (2011) constructed and administered a test to assess the reading skills of 123 girls and boys in Jordan whose hearing loss varied between 35dBHL and 90 dBHL. They were in Grades, 4, 5, 6 and 7 in schools using sign language or TC. The results indicate that Deaf pupils' Arabic literacy achievement appears to be far behind that of their hearing peers.

Using a mixed research design, Al-Zubairy (2015) assessed 93 Deaf pupils (Grades 2-6, average age 9-10 years) and 51 hearing pupils (Grade 2, average age 8 years) in Riyadh (Saudi Arabia). The researcher test of reading comprehension skills based on a reading text whose source is not specified, on the objectives of teaching reading in primary schools and on the primary reading curriculum. It was submitted to a number of educational professionals working in Arabic and special education to check its validity. The test comprised tasks such as choosing the correct word to complete a sentence and multiple-choice questions relating to synonyms and antonyms. A pilot study was conducted with 31 Grade 2 Deaf pupils. Al-Zubairy found that hearing pupils performed significantly better than Deaf pupils in total test scores and in all reading comprehension categories: "creative", "deductive", "critical" and "direct literal"). From classroom observation, the researcher concluded that the Deaf pupils were not motivated to read and that instead of focusing on the reading texts themselves, they concentrated on the shape of the writing and the font.

The impact of the above studies is limited by their use of questionnaires responses as data and/or their status as masters theses.

Al-Rayes and Al-Monai (2014) studied the reading comprehension and written composition of 112 Deaf college students enrolled in colleges for technical and vocational training and 74 Grade 3 hearing pupils in primary schools in Riyadh and Hail, Saudi Arabia. The researchers adapted a reading comprehension test for Deaf pupils by Fayyad (2008), using a reading text for Grade 3, and developed a new written expression test. They found that the Deaf pupils were able to understand the main idea of the reading text but could not understand the details of events. Additionally, the written composition skills of Deaf college students were poorer than hearing pupils in Grade 3. All participants were male and it is not known whether the results would be similar for females.

Since 2006, attempts to explore Deaf pupils' reading achievement have been made (Al-Rayes, 2006 and Al-Turky 2006); however, little attention has been given in Saudi literature to why many Deaf pupils are not doing well in literacy.

Abushaira (2012) studied pupils at three different educational levels and of varied hearing status (mildly, moderately and severely-profoundly deaf). He reported that 51 Deaf and hard-of-hearing pupils from primary, middle and secondary schools had common writing mistakes, misspellings and grammatical errors.

The significant point is that the writing process is different from the reading process and to highlight writing issues is again to mistake the different progress levels in reading (i.e., it is more advanced) from that of writing. Most bilinguals and monolinguals are probably weaker in writing than in speaking and are weaker in speaking than reading.

2.11 The need for research and innovation

Deaf pupils are considered to be second language learners of Arabic but they are working with two very different language forms, i.e. spoken/written Arabic and spatial/visual sign language, emphasising the need for separation between the two languages (Swanwick, 1996).

Saudi Deaf education is at a point of transition and this is an ideal moment to introduce a new SBE approach, with a shift towards the use of sign language in class. The study described in the following chapters provides empirical data which can aid our understanding of SBE in special schools for Deaf girls and its outcomes for teachers and Deaf assistants. The next chapter presents the techniques and methodology used to study the implementation of SBE in a Deaf girls' school.

Chapter 3: Study Design

The previous chapters have demonstrated that an intervention programme of Sign Bilingual Education (SBE) for Deaf pupils in Saudi Arabia is timely and necessary, and is supported by considerable theoretical, methodological and evidential perspectives. These will be set out in detail as the basis for the proposed study.

3.1 Research questions

The primary research question to be addressed is:

1. Does the Preview–View–Review (PVR) strategy improve performance in reading when applied to Deaf pupils in a Deaf school in Saudi Arabia?

There are several secondary research questions deriving from this primary one:

2. What is the experience of the teachers in using the PVR strategy?
3. What is the experience of teachers in co-teaching with Deaf assistants in the reading lessons?
4. How can Arabic reading progress be assessed in the case of MSA as used in Deaf schools?
5. What are the educational/administrative factors which affect the implementation of sign bilingualism in Deaf schools in Saudi Arabia?

3.2 Research aims

The overall aims of this research are to:

1. understand how SBE can be applied to Deaf education in an Arabic cultural context
2. develop a means of assessing Deaf pupils' Arabic literacy
3. reflect on the implementation of SBE in a girls' school and its implications for Saudi Arabia.

3.3 Philosophical approach

The mixed-methods approach is based on both the compatibility thesis and commitment to the pragmatic paradigm, as dictated by the specific research

questions (Johnson and Onwuegbuze, 2004; Biesta, 2010). According to the compatibility thesis, a single investigation can usefully combine the use of a mix of quantitative and qualitative methods (Johnson and Onwuegbuze, 2004). Greene (2008) describes pragmatism as being the philosophy most closely associated with this use of mixed research methods.

From a theoretical perspective, the mixed-methods Approach combines the distinct paradigms of subjectivism, objectivism and pragmatism (Hall, 2012), and is thus known as a “third methodological movement” (Teddlie and Tashakkori, 2009: 76). This approach has enjoyed wide use in the last two decades, allowing researchers to gather a broad palette of generalisable data along with the anecdotal views of participants (Creswell and Clark, 2010).

The assumption shared by both philosophical pragmatism and the compatibility thesis is that the meaning of a phenomenon should be investigated using whatever method works (Johnson and Onwuegbuze, 2004). Hence, the present study is epistemologically based on the use of mixed methods within a pragmatic worldview: it is less concerned with what is ‘true’ or ‘real’ than with ‘what works’ (Tashakkori and Teddlie, 2003: 713). That is, the focus is on intelligent data solutions for dealing with a series of problems in the teaching and learning of reading in Saudi deaf education. These are driven by questions such as:

1. What works with non-appropriate literacy curricula and low levels of language competence?
2. What works for the teachers of reading?

Therefore, the underlying need is to find methods to improve the reading skills of Deaf pupils.

In the context of philosophical pragmatism, this research partially represents an intervention that attempts to make an impact in introducing a new idea and a new method, SBE, into a Saudi school for Deaf pupils, in the context of assumptions about hearing individuals’ views regarding Deaf people, their language and their culture. This approach helps us to understand how SBE can be applied to Deaf education in the Saudi Arabian context. A qualitative

approach with non-positivism and an interpretative view was adopted in the first phase. The teachers' views were identified and understood via the interaction between them and the researcher, as described by Mingers (2001). This interaction was enhanced during fieldwork (Andrade, 2009: 42) over a period of three months. The qualitative approach was also used to analyse the data, reflecting the researcher's own experience, values, preconceptions and biases. Mehra (2002) has argued that it is impossible to avoid bias in interpretivist qualitative research. The researcher needs to be visible and aware of possible bias in interpreting the data in order to minimise the impact of any such bias (Hitchcock and Hughes, 1992), by acting as objectively as possible when recording, transcribing and analysing the data.

A positivist approach was taken in the intervention phase, by comparing performance before and after the intervention. This was combined with the non-positivist approach indicated above. A significant distinction to be noted is that the objective of the qualitative approach is to separate true from false knowledge. In contrast, quantitative methods aim to provide statements of truth (Klein, 2005). Therefore, this research attempted to develop a better understanding through this approach.

3.4 Methods

The mixed-methods Approach facilitates the use of multiple methods, admitting and recognising different world views and assumptions, and hence, diverse data collection and analysis techniques (Creswell, 2009:11). With the research aims and questions established, a sequential mixed-methods approach was applied, using qualitative instruments in developing a quantitative tool (Creswell and Clark, 2010). Qualitative means were applied to study the subjective views of participants on using the PVR strategy and quantitative tools were applied to assess the effect of the intervention. Another reason for using a mixed-methods approach was to achieve greater validity and reliability of instruments, while enhancing the credibility of the findings. Moreover, the mixed-methods approach provided a greater potential to corroborate conclusions, more so than the application of either quantitative or qualitative analysis individually (Frey et al, 2000; Onwuegbuzie and Teddlie, 2003).

Different criteria such as timing, weighting, mixing data and theorizing (Creswell, 2009) helped to shape the mixed-methods approach to the research. Table 3.1 presents the steps involved in the study design, following the approach by Creswell (2009: 209), with some specific changes to fit the planned study.

Table 3.1: Sequential exploratory design

	Qualitative \longrightarrow Quantitative \longrightarrow Qualitative				
Phase 1	Qualitative data collection (observations, informal interviews, documents)	Qualitative data analysis	Qualitative results	Identify results for follow-up	Qualitative interpretation
Phase 2	Quantitative data collection (pre and post reading assessment tests)	Quantitative data analysis	Quantitative results	Identify results for follow-up	Quantitative interpretation
Phase 3	Qualitative data collection (observations, formal interviews, group discussions)	Qualitative data analysis	Qualitative results	Interpretation of entire analysis	Interpretation of entire analysis

The study started with an ethnographic approach, using data collection instruments that included interviews, observations, field notes and documents to gather participants' views and to gain a rich understanding of their experiences (Silverman, 2010) within Saudi culture. Notes were made of teaching strategies used with Deaf pupils, the pupils' reading levels, the teachers' level of sign language and general interaction.

Travers (2001: 180) argues that by conducting ethnographic research, it is possible to obtain rich and comprehensive data about what occurs in a specific institution or setting, which can help to address practical questions relating to the interests of both practitioners and managers. By trying to make sense of what individuals are doing (Travers, 2001; Walford, 2008), it is possible to gradually understand how things are done in a particular context (Deal, 1985).

The second phase of the study involved adopting a quasi-experimental approach to intervention using PVR. This approach was intended to provide cause-and-effect conclusions without recourse to randomisation; indeed, it was used to reduce the possibility that a confounding variable might influence the results significantly, thus allowing the identification of a causal relation between the intervention and the outcome (Ho, Peterson and Masoudi, 2008: 1678).

It is argued by Shadish, Cook and Campbell (2002) and by Ho, Peterson and Masoudi (2008) that a quasi-experimental design may weaken internal validity to a greater extent than a true experimental design, because random assignment to a condition is not available. Spencer and Marschark (2010: 29) note that a quasi-experimental approach is used widely with vulnerable and minority group such as Deaf pupils because it improves the researchers' confidence in working with such non-homogenous groups. To deal with this problem, one of the quasi-experimental approaches adopted in this research was an 'AB' design. It is the simplest form of the single-subject designs, which allows researchers to measure and compare the performance change among a small group of children across the different phases of the intervention (Zirpoli, 2008)) i.e., to observe it before and after the intervention (Creswell, 2009: 161). The 'AB' design offers a test testing of whether the PVR intervention had an effect on Deaf pupils' reading performance.³⁵

In the third phase, qualitative methodology was applied again, using data collection instruments including formal interviews, observations and field notes to investigate participants' experience of using the PVR strategy and to explore their perceptions and experiences of co-teaching in the reading lessons.

3.5 Research design

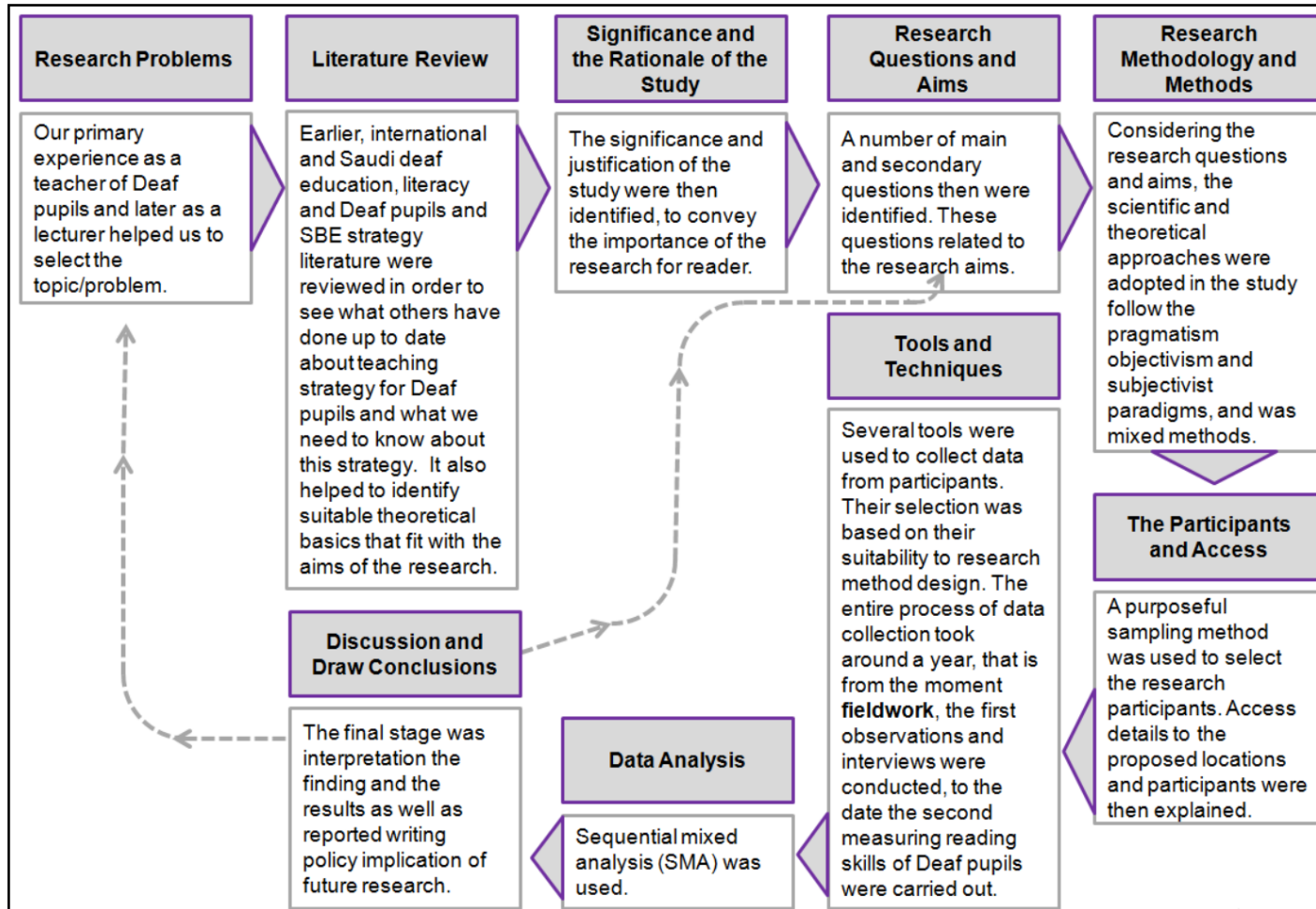
The research was carried out in the Urban School for Deaf Girls 2 (USDG2), a primary school for Deaf pupils in an urban area of Western Saudi Arabia.

³⁵ In the AB design, participants are introduced to two conditions. In condition A (baseline), the researcher collects data to determine baseline performance before any treatment. At this stage, participants are subjected to a condition in which no experimental variable is introduced. Their performance is measured again after receiving the experimental condition (B) (intervention) (the PVR in this study) and after the experimental variable has been withdrawn and participants have returned to the baseline condition (Byiers, Reichle and Symons, 2012).

Reading teachers, Deaf assistants and Deaf pupils participated in the PVR strategy during reading lessons over a period of one school year. Figure 3.1 is a map of the research plan³⁶.

³⁶ This figure is quoted from Basonbul (2013: 13).

Figure 3.1 Map of the research



3.5.1 PVR strategy in this intervention

The following example illustrates how the PVR strategy was applied to a class of Deaf pupils. In the preview stage, a Deaf teacher tells a particular story in Saudi Sign Language (SaudiSL); the aim here is to create knowledge first. In order to provide visual support for the general idea and to help the pupils obtain important background information, the teacher uses supporting materials such as objects and visual materials (e.g. a PowerPoint presentation). The pupils next tell the same story by writing simple sentences or drawing pictures.

In the view stage, both languages (sign language and Arabic) are introduced to create a relationship between sign language knowledge and written Arabic; the Deaf teacher tells the story in sign language, then a hearing teacher writes in Arabic (the pupils' L2) some words that represent the pupils' drawings. At this stage, the Deaf and hearing teachers aim to make links in the pupils' minds between their knowledge of the meaning of the story in sign language and how this is expressed in Arabic. In the review stage, the Deaf teacher summarises in the pupils' first language, using SaudiSL to interpret the written words related to the pupils' visual descriptions, review the main points of the story and encourage pupils to participate in the discussion.

3.5.2 Reading measurement

Because of the lack of a standardised Arabic literacy measure, a completely new test was devised. To assess its appropriateness as an indicator of change, a pilot study was conducted, as described in Chapter 5.

3.6 Data collection instruments

Data collection included participant observations, semi-structured and group discussions, documents and literacy measurement. The data collection stages (including type and frequency of data collection are explained in Figure 3.2.

3.6.1 Observation

Observation was used throughout the study to examine teacher-pupil and pupil-pupil interaction in reading lessons. Structured and unstructured observation methods were used. Unstructured observations began in April 2013 (one month

before the end of the academic year 2012-13) and took place in seven reading lessons for two weeks in three classes (see Table A.3.1 and Figure A.3.1: Example of notes taken during unstructured observations in reading classrooms in Appendix 3). Fifteen Deaf female pupils were observed in class before the PVR strategy was introduced. The observations noted teaching strategies and appraisals of pupils' reading. Further unstructured observations were carried out in the playground, during breakfast time, at the Morning Assembly and in the administration offices, to explore staff-pupil and pupil-pupil interactions and the communication methods used.

Ten participant observations took place during reading lessons in October-November 2013 during the initial stages of the PVR, an average of two lessons being observed for each grade.

Fifteen structured class observations (three of each grade) began in the second week of implementing the PVR strategy, identifying markers of progress (see Appendix 4 for details of the coding system).

Further observations took place during the pre- and post-tests of reading to examine pupil behaviour which might affect reading performance. Chapter 8 describes behaviours that were observed during the reading process. At the end of the intervention, five further structured class observations were conducted (see Appendix 5 for a translated example of an observation sheet).

3.6.2 Interviews

The teachers' and Deaf assistants' experience of using SBE in the form of the PVR strategy in reading lessons and of co-teaching were discussed during the individual semi-structured interviews (see Appendix 6 for interview schedules). The interviews with the Head Teacher and the first teacher covered their views regarding the application and outcome of the PVR strategy in reading lessons.

There were ten formal, individual, face-to-face semi-structured interviews with the hearing staff and two with the Deaf staff. There were also four formal semi-structured telephone interviews (two teachers, the head teacher and the first teacher) and formal structured and semi-structured email interviews with 17 hearing people: academics from two Saudi universities, ahead of department

and 12 administrators at the Ministry of Education, and two sign language interpreters.

The semi-structured interview method reduces potential bias (Hammersley, 2013), while most relevant information relating to the topic of interest is gathered. Each question must be appropriately phrased to ensure equal significance for each theme (Berg and Lune, 2012). The semi-structured interviews took place seven months after the Deaf pupils' post-test. Because it was not possible to record them for cultural reasons, written notes were taken throughout.

As well as the formal interviews, 94 informal interviews took place, some face to face and others by means of telephone, email, FaceTime, Twitter or WhatsApp. These included seven informal telephone interviews: one with a male administrator at the Ministry of Education to collect data regarding the reading curriculum and six with mothers of Deaf pupils to identify any changes in the school or their daughters after the end of the data collection period.

Six informal email interviews were also conducted with a sample of relevant educators (hearing) who were prepared to answer email questions: three active members of Deaf organisations, two male and one female who were selected at the suggestion of Deaf members in the Deaf club; two female administrators at the Ministry of Education and one female administrator at a Saudi university (to collect data regarding Deaf students in the universities) who were sent to me by the Ministry of Education. As well as saving time, an additional reason for using telephone and email interviews was that some of the interviewees were men; a female researcher in Saudi Arabia is not able to interview men face to face.

There were 34 face-to-face informal interviews with hearing people: five teachers participating in the study, eight non-participating teachers, five administrators, two audiologists, two cleaners, two head teachers,³⁷ one first teacher,³⁸ one school supervisor, one librarian, whose role was to collaborate with the teachers in designing the educational programmes within the school, as

³⁷One interview with the retiring headteacher and one with her successor.

³⁸The first teacher was informally interviewed twice.

well as being a leader in out-of-hours learning programmes, one nurse, one psychologist, one social counsellor, one psychological counsellor, one cafeteria worker and one teacher responsible for preparing assemblies. The researcher also conducted 13 face-to-face informal interviews with the Deaf assistants during the fieldwork period from April 2013 to January 2015. There were seven further informal face-to-face interviews with female Deaf and hearing people working outside the school, including members of staff of a Deaf club, of a diagnosis and early intervention centre and of another school for Deaf pupils, and academics teaching Deaf university students.

Also analysed were seven FaceTime (video) interviews with Deaf assistants; fifteen WhatsApp text interviews with both male and female Deaf and hearing people (nine participating and non-participating teachers, one school supervisor, one first teacher, one Deaf assistant, one Deaf male university graduate, one non-participating teacher and one school administrator; and five Twitter “interviews”, with one Deaf male teaching Arabic to Deaf pupils, one male teacher of Deaf pupils, one non-participating teacher, one administrator at the Ministry of Education and one administrator at a Saudi university. In the light of the limited published Arabic research regarding deaf education, the use of WhatsApp and Twitter enabled access to information about deafness in the fields of education, social affairs and universities.

3.6.3 Diary and field notes

Field notes are an essential element of ethnographic research (Wolfinger, 2002; Bryman, 2012). It was necessary for the researcher to keep a diary, as Saudi cultural conventions did not permit audio or video recording. This diary included notes on everything that happened in the school: the daily interactions between staff and pupils, pupils and pupils, Deaf and hearing staff; school activities; experiences of travelling to school; and other issues for teachers and pupils.

3.6.4 Official documents

Documents are important, as they represent secondary sources that may validate primary data gathered through instruments (Creswell, 2012). Official documents from the USDG2 and the Ministry of Education were used as rich

sources of secondary data. The official school files of the pupils were also checked for data about degree of hearing loss and past schooling.

3.6.5 Personal data records

Personal data records were kept to note information about the pupils, using a culturally appropriate Arabic version of the Personal Data Record for the Deaf Child (Kyle, 2012) (Appendix 9).

3.6.6 Reading assessment test

Because of the lack of objective assessments of literacy in Saudi schools, it was necessary to construct a new scale. Details are given in Chapter 5.

3.7 Ethical issues

All ethical issues were dealt with according to the requirements of the Saudi Ministry of Education and the laws of Islam, as well as following the guidelines of the British Sociological Association (2004), British Educational Research Association (BERA) (2011) and the Centre for Deaf Studies, and the regulations of the Data Protection Act 1998, the University of Bristol and University College London (UCL). Details are given in the following subsections.

3.7.1 Research methods

a) Permissions obtained and ethical issues

Ethics permission for the project as described above was first obtained at Bristol University (the Graduate School of Education), then approved by UCL.

As this research was conducted in Saudi Arabia, Criminal Records Bureau clearance was not required. However, formal requests, a common way of securing admittance to Saudi schools, were made in order to access the research locations. Initiating contact was facilitated by experience of working in the field of Deaf education in Saudi Arabia, by acquaintance with the head of the Administration of Special Education, with the names of the headteachers of Deaf schools and with contact details of gatekeepers, and by knowledge of the school year timetable.

b) Administrative issues

Nevertheless, there were significant difficulties in obtaining access to the research location. As a result, gaining access to the participants, to data and to school facilities was not straightforward.

1. One of the requirements of the University of Bristol was writing a research proposal for submission to the Graduate School of Education Ethics Co-ordinators describing ethical issues that might arise in the proposed research.
2. It was also compulsory to obtain primary permission from the Department of Planning and Development in the Public Administration for Education in Saudi Arabia to conduct research in one of its schools. Thus, two letters (an identification letter about the researcher's status and summary of the research area and aims) were provided to the Department. The doctoral thesis proposal and the initial permission letter for admission to Deaf schools, in which our supervisor emphasised the need for this research to take place in Saudi
3. Deaf schools were sent to the scholarship sponsors to obtain permission to conduct the proposed research.
4. After permission was received (Appendix 12 Approval letter for access to the school for Deaf girls), the administrative supervisors/headteachers of schools were contacted by phone to determine a suitable time to visit, before the school term started in September 2013, to select which schools to include in the research, explain the research topic and start the fieldwork. The date agreed was Saturday 27th April 2013.
5. At an early stage of the fieldwork, it was necessary to pilot the reading test with both Deaf and hearing pupils. There were no problems accessing girls' schools; however, conducting the pilot study in boys' schools was problematic, because Saudi schools are segregated by gender and no female, including researchers, can enter a boys' school. It was known from the beginning that there were issues around female access to boys' schools and vice versa, because this gender separation, requiring males and females to study in separate places, has a religious

basis. Therefore, although the letter from the Public Administration for Education approved research in both boys' and girls' Deaf schools, separate permission was needed to access the mainstream boys' school to pilot the reading test with hearing boys. A letter was written to the Department of Planning and Development and sent with a male assistant researcher, trained to work on the project's behalf within both boys' mainstream and Deaf schools. As final permission from the Public Administration to conduct this study had already been obtained (Appendix 13 Approval letter for access to the school for Deaf boys), this additional permission for the assistant was received the next day.

Issues regarding access to research locations were far more complex than might be expected for a comparable study in the UK. These began at the point of seeking official departmental agreement from the relevant heads of department within the different government organisations. Each headteacher had to be contacted, then followed up daily for up to two months, to enable completion of the application. Moreover, it became clear that a female researcher conducting research in a boys' school was a cause for concern for many staff at USDG2, the parents and governmental organisations. The Islamic principles related to gender separation do not prohibit the meeting of unrelated males and females in public in cases of special need, such as requiring medical examination or treatment. In our case it would have been possible for the female researcher to test boys outside the school, in a room provided by the Ministry of Education, but it would have been unethical and would have compromised the validity of the data to have tested the children outside their normal learning environment.

This issue was the most difficult and was resolved only by employing male/female volunteer researchers from the Ministry of Education for this purpose.

It was difficult to obtain access to research locations through two different governmental bodies: the Public Administration for Education and the sponsoring university. In addition to physical obstacles, electronically submitting the application for access to schools from the country of scholarship also

presented a major difficulty. In all cases, regardless of whether the school was for girls or boys, it was essential to abide by its rules. Moreover, ethical issues were uppermost relating to all methods used in the research, such as the initial informal interviews, reading tests, observations and group discussions.

c) Locations and sites

The USDG2 was selected as an appropriate research site in terms of the characteristics suggested by Marshall and Rossman (1999: 69; 2010: 101).

They recommend a site where:

- entry is possible
- there is a high probability that a rich mix of the processes, people, programs, interactions, and structures of interest are present;
- the researcher is likely to be able to build trusting relations with the participants in the study; and
- data quality and credibility of the study are reasonably assured.

The research was conducted in western Saudi Arabia at a school which had the required characteristics relating to staff, involvement of Deaf adults and ease of access. The school, which was a residential school for girls until 2010, is on a campus which includes primary, secondary and high schools.³⁹

3.7.2 Participants⁴⁰

The Deaf girls in the current research were pupils at a primary special school (institute) for Deaf pupils in western Saudi Arabia. In 2013, when data collection began, there were 35 Deaf pupils. Eighteen were excluded from the study: nine with complex disabilities, four Grade 1 pupils who were unable to sign at all; two pupils (Grades 3 and 5) who left the school before the end of the first year of the intervention; one Grade 2 pupil who was 19 years old; one Grade 2 pupil who left the school just after we started the intervention because of lack of transportation and one Grade 5 pupil who was withdrawn from the analysis

³⁹The USDG2 campus included 35 primary, 21 secondary, and 39 high school pupils (Source: The School Document, 2013).

⁴⁰The details about the participants came from the exploratory work.

because of inconsistency in her responses and unreliable participation. It was found that she had taken her test before breakfast time (9:30) and at the end that she complained of a stomach-ache.

The pupils who were involved in the current research, along with their teachers, were in Grades 2, 3 and 5. They had a mean hearing loss of 71+dBHL in the better ear. Four pupils had cochlear implants. However, no special rehabilitation sessions were provided for them except for audiologist-led individual speech training sessions (1/2 per week), just the same as the rest of the pupils. A purposive-sampling scheme was used to select the participants.

Five teachers of Arabic in the school took part in the study, in addition to the Head Teacher and the first teacher. Two Deaf assistants working for the school administration also participated (from a total of 13 administrators, nine hearing and four Deaf). The Deaf assistants differed from the hearing staff in status. Neither had previous experience of working with pupils or teaching pupils officially; one was a mother with hearing children. Tables 3.2 and 3.3 describe the participants in the research.⁴¹

Table 3.2: Participants by grade (n=17)

Grade	Age at test years/months	Deaf pupils	Age on entry to primary school years/months
2	12;6	3	8;3
	8;0		6;8
	8;4		7;2
3A ⁴²	12;0	3	9;0
	10;0		6;9
	8;7		7;5
3B	9;8	3	7;6
	9;8		6;5
	11;0		7;0
5A	10;8	4	7;5
	12		8;9

⁴¹ Pseudonyms are used.

⁴² The Grade 3 pupils had been arbitrarily assigned to classes 3A and 3B.

Grade	Age at test years/months	Deaf pupils	Age on entry to primary school years/months
	15;2		12;0
	11;2		8;0
5B	11;9	4	8;6
	12;2		9;0
	11;3		8;0
	12		7;0

Table 3.3: Participants (Teachers and Deaf assistants) in the research

						Total
Hearing teachers	Mrs. Asmahan	Mrs. Athar	Mrs. Eklas	Mrs. Rugaia	Mrs. Abrar	5
Deaf assistants	Mrs. Manal			Mrs. Lama		2

a) Classes and group size for the PVR implementation phase

Pupils in Grades 2, 3 and 5 are taught Arabic literacy. Their ages at the pre-test were between 7 and 15 years. All had hearing parents. Twelve pupils had Deaf siblings.

Because the Deaf pupils were below the age of consent, approval of their participation was obtained from their parents or caregivers, following the guidelines of the Ministry of Education and of BERA (2011). Twenty mothers were contacted in person or by telephone and eleven attended a group discussion on 29th October 2013 about the project. A final total of 16 mothers agreed to take part.⁴³ Information on parents' background is presented in Table 3.4. One of the mothers and 12 of the fathers were working; 15 mothers and one of the fathers were at home; three fathers had retired.

⁴³One of the mothers had two participating daughters.

Table 3.4: Parents' educational background

Qualification	Father	Mother
Does not read or write	0	0
Reads and writes	1	2
Primary	3	2
Secondary	5	8
Highschool	3	2
Bachelor's degree or diploma ⁴⁴	4	2
Total	16	16

The teachers in this study were not specialists in reading (Table 3.5).

Table 3.5: The experience of the hearing teachers

Teacher	Age (years)	Deaf teaching experience (Years)	Bachelor degree
Mrs. Asmahan	31-40	More than 12	Hearing Impairment ⁴⁵
Mrs. Eklas	31-40	More than 12	Hearing Impairment
Mrs. Abrar	21-30	1-5	Hearing Impairment
Mrs. Athar	21-30	1-5	Hearing Impairment
Mrs. Rugaia	21-30	1-5	Hearing Impairment
Total no. 5			

Following discussions with the Head teacher and the first teacher, two Deaf members of the school staff were recruited to co-teach in class.⁴⁶ They were aged 34 and 43 years, with 17 and 26 years of experience in that school respectively, but neither had previously worked as a classroom assistant. Both were fluent in SaudiSL.

⁴⁴ In Saudi Arabia, a Bachelor's degree is the degree taken at college after the high school (in the UK the degree is taken after the sixth form, on entry to college); (for further information about Bachelor's degree see Bachelor studies, 2017)).

⁴⁵ In Saudi Arabia, Hearing Impairment Major refers to the Bachelor's and/ or Master's degree where there is a specialism in Hearing Impairment.

⁴⁶ Two other Deaf staff in the school were soon due to retire.

With the assistance of a fluent signer in the school, it was explained to the Deaf assistants that they would be asked to use sign language in reading lessons. Consent for participation was obtained. All hearing and Deaf staff were invited to attend workshops about sign bilingualism and the PVR strategy. The Deaf staff also had a separate individual meeting with the researcher.

b) Informed consent

Much of the data collection procedure involved classroom observations, group discussions with teachers and semi-structured interviews, and it was felt essential to gain participants' permission to be involved in the research study. Conducting research in Saudi schools does not require a researcher to obtain consent from parents or the schools themselves, since a final permission letter from the Public Administration for Education is adequate to conduct research. Most studies conducted in Saudi schools have been quantitative, using self-completion questionnaires, with researchers rarely using interviews or observations; even if such methods are used, approval of the Public Administration alone is considered sufficient, without reference to parents or teachers. However, parents are the most important persons in a child's education; the active and positive desire of participants to take part in a research study is key to the success of academic research; and the university's ethical research protocol had to be followed. We were therefore very keen to notify the parents of Deaf pupils about our research and how their children could be involved.

Voluntary informed consent means that the participants understand all of the information given to them and approve of their involvement without any pressure, prior to commencing the research. The rules of informed consent require participants to be given, in simple and clear language (Arabic or SaudiSL), significant, detailed and clear information concerning the research, the nature of the study and what participation would entail, as well as the importance of participation. They would be given the opportunity to make decisions regarding whether they would participate, and would be informed about who would conduct and sponsor the research, who would analyse the

data obtained and how the data gathered in this research would be disseminated and used (Wiles, 2013).

Gaining informed consent for involvement in research is crucial to its ethical conduct. With Deaf participants, it can be complex because of cultural and language differences (Allen, 1999). In this study, information sheets and consent forms (Appendix 8) were presented and explained in sessions with the hearing teachers and mothers of participants; they were explained to the Deaf assistants using SaudiSL in individual meetings. Special workshops were held to explain ethical issues to participants, because experience in Saudi schools had shown that teachers and mothers are often unaware of their rights when participating in research. Furthermore, as some of the mothers were uneducated and could not read, it was important that they fully understood the consent form before signing it.

Signed consent forms were obtained from teachers, Deaf assistants, the Headteacher and first teacher. As Deaf pupils may have limited comprehension, are potentially vulnerable and were for the most part below the age of consent, innovative ways had to be identified to engage with them so that they could understand what participating in the research might involve (Wiles, 2013). Formal permission for Deaf pupil involvement was gained from parents or caregivers (Fombad, 2005).

c) Language of communication

Arabic, which is the language of instruction in Saudi schools, was used in interviews with hearing participants. However, in line with Centre for Deaf Studies (CDS) research guidelines (2005), investigators need to ensure cultural compatibility and fairness between them and those they interview. SaudiSL and written Arabic were therefore used with Deaf staff without an interpreter. Nevertheless, the participants' requirements and need for an interpreter were discussed individually. Sign language and preferred communication methods are considered a major issue, as they can affect all parts of research in Deaf Studies (CDS, 2005; Young and Hunt, 2011). According to CDS policy (2005),

research data from Deaf participants should be collected by Deaf researchers or by a hearing individual fluent in sign language.

In Saudi Arabia, there are currently no Deaf researchers. This was of concern, although the researcher had previously worked with Deaf pupils in Saudi schools and communicated with them using SaudiSL. However, following a five-year gap in working with Deaf pupils, effective communication in SaudiSL with Deaf assistants and pupils was not certain. Efforts were made to improve the researcher's fluency in sign language, reviewing SaudiSL dictionaries, watching SaudiSL channels on YouTube and twice-weekly video chats with Deaf women in Saudi Arabia via FaceTime. Furthermore, during fieldwork in Saudi Arabia, the Deaf Club was visited to meet Deaf people and engage in their cultural activities. By doing so, it was possible to collect data from Deaf participants for the first stage of the research without an interpreter.

Arranging for interpretation by employing an interpreter is considered by Johnson (1998) and the Centre for Deaf Studies (2005) to pose potential problems when carrying out research with Deaf people, because the interpreter's sign language skills and her knowledge and experience of interacting with Deaf people can vary. Sometimes the interpreter's language competencies do not match Deaf people's language needs. However, because we were not able to use video-recording when collecting data, the presence of interpreters was considered to be of importance during group discussions and formal individual interviews, to enhance the validity of data collected from Deaf assistants and to ensure that hearing participants would not misunderstand them. In line with Bloch (n.d), it was decided that the use of an interpreter in group and individual interviews would be discussed in advance with both hearing and Deaf participants. As a result of those discussions, the Deaf assistants chose a teacher from a high school department to be a volunteer interpreter during both group and individual interviews. However, the school administration did not agree to invite the interpreter suggested by the Deaf assistants and suggested that a teacher in the primary department be invited; the teachers had no opinion on that at all.

In contrast with the group discussion and interviews, the researcher administered the pre- and post-tests directly to the Deaf pupils. There was no need to use SaudiSL with Deaf pupils during the test, as they had to read the materials by themselves; only the main sections and the first example of each section were explained in sign. It was also considered desirable to avoid the subjectivity of their teachers as examiners, since they might use sign language to explain the statements to the pupils; guidance from CDS (2005) also advised against employing interpreters to work with Deaf pupils in schools.

d) Anonymity and confidentiality

Anonymity and the confidentiality of the participants' identities – especially Deaf participants, constitute another major issue when conducting research, because the community is small and close-knit (Gutman, 2002: 165). Because our research was conducted in one of two Deaf schools in an urban area of western Saudi Arabia and involved both hearing and Deaf staff, anonymity and confidentiality were particularly important. We repeatedly assured the participants of anonymity throughout our meetings and emphasised in the Consent Form that their information was to remain anonymous and confidential.

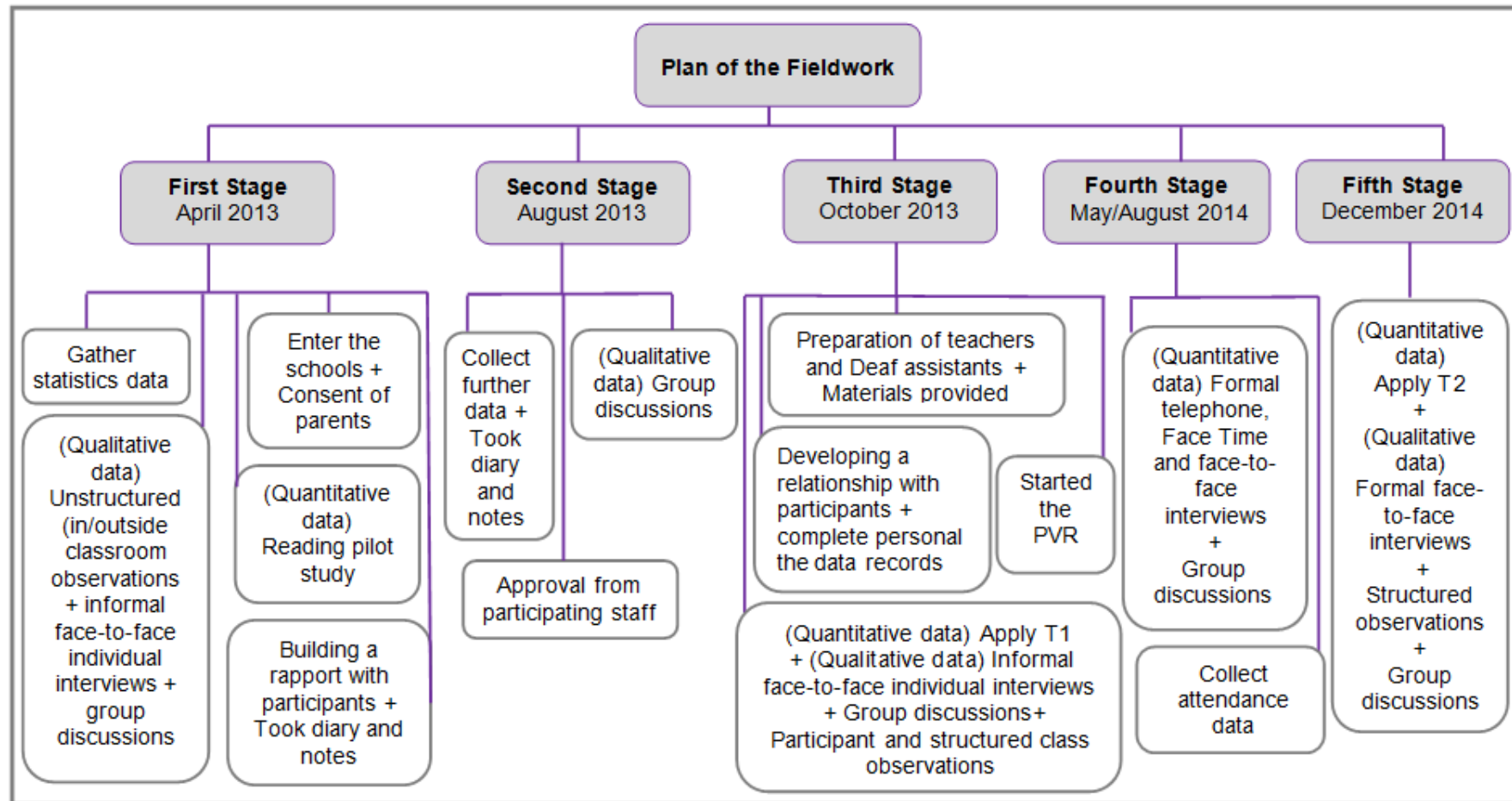
To enhance anonymity, each participant was provided with a pseudonym (which was not the name of any other persons in the schools in that city). The schools where the various studies were undertaken were also renamed. These names described both the setting and types of pupils they represented: i.e. USDG1 for an urban school for Deaf girls, USDB for an urban school for Deaf boys and USHB for an urban school for hearing boys, these three being where the pilot studies were undertaken, and USDG2 for an urban school for Deaf girls where the main study took place. Furthermore, in the analysis and discussion of research data, every effort was made to avoid mentioning characteristics of any participant which might make it easy to identify Deaf and/or hearing community members.

3.8 Plan of the fieldwork in Saudi Arabia

As a preliminary to the development of the primary methodology and data collection, an initial visit was made to agencies and schools that were expected

to participate. The school year in Saudi Arabia is divided into two semesters: the first from August/early September to the middle of January and the second from the end of January to the end of June. The researcher planned to do the fieldwork at USDG2 in five phases. Figure 3.2 is a flow chart of the fieldwork stages.

Figure 3.2 Flow chart of plan of the fieldwork



The introductory phase began on Saturday 27 of April 2013, approximately one month before the school closed for the summer holidays.⁴⁷ This phase allowed the researcher to a) collect statistics about Deaf schools and pupils in the city; b) access the schools and agencies for Deaf pupils; c) begin to build a rapport with the school staff; d) conduct unstructured observations; e) introduce the PVR strategy to staff and encourage its use in class; and f) carry out the pilot reading measure study.

The second phase of the fieldwork began on 26 August 2013 with three group discussions with the teachers and the Deaf assistants. Further details are presented in Chapter 4, noitceS 4.1.

In the third phase, the researcher started implementing the PVR strategy, which included engagement with the mothers, their involvement in the project and the introduction of Deaf native sign language users into the class. Their role in co-teaching was to be negotiated, but they were expected to provide the meaning content of the PVR strategy by interacting with the pupils in sign language. The intervention was scheduled to continue over a 12-month period. All training was provided in advance, with the researcher providing support at a distance and remaining in continuous contact with the hearing teachers and the Deaf assistants during the 12 months intervention to ensure quality control of the intervention. I used telephone, email, text and WhatsApp to communicate with the participants as well as personally visiting the school five times. Furthermore, I also asked the teachers to write a daily report.

The fourth phase happened in August 2014, it includes collecting further data about the participants as well as conducting face-to-face interviews and group discussions with the participated teachers, Deaf assistant, headteacher and first teachers.

The fifth phase took place in December 2014 and consisted of: a) administration of a post-reading test with the participating pupils to monitor the changes in reading performance; b) conducting formal interviews, structured observations

⁴⁷In the previous Saudi calendar, Saturday was the first day of the week. However, from 2014, Sunday became the first day of the week.

and a second group discussion with mothers; c) obtaining approval from participating teachers, Deaf assistants, administrators and mothers to transfer the collected data from the University of Bristol to University College London; and d) exiting the research setting. The relevant work is described in Chapter 4, and the development of the reading test in Chapter 5.

e) Practical issues regarding the intervention: Transportation

The lack of transportation was one of the issues encountered during the fieldwork. The USDG2 is one of the two special schools for Deaf pupils in its city; travelling to the school took 2-3 hours each day. As the researcher's husband was in the UK and because Saudi women are not allowed to drive, it was necessary to leave before daylight to find a taxi and get to the school early. Problems with transportation also impacted on the pupils in the school (see Chapter 6, Section 6.6.2 for an example).

3.8.1 Preparation of the teachers and Deaf assistants

In order to prepare the staff for PVR, group discussions were organised, which ensured that Deaf assistants had enough time to engage in the discussion with hearing teachers and enabled them to understand one another. Each discussion took place for around three hours in a meeting room in the school. A handbook and leaflets related to SBE and PVR were provided for the participants and the school staff. Participating teachers were encouraged to visit the Deaf Club in the city and to meet Deaf adults to help them learn sign language.

Six group discussions were conducted with the Deaf assistants to inform them about general and particular teaching strategies during reading lessons. The group discussions were carried out before and at the start of the implementation of the PVR strategy. Each session lasted around 90 minutes. The researcher used SaudiSL with the Deaf assistants without an interpreter.

The first teacher was also asked to create a schedule and invite the participating teachers to attend each other's reading lessons to share experiences and benefit from each other's approaches.

The teacher and Deaf assistant were requested to work together in preparing for each PVR lesson. The teacher was asked to explain the topic of the lesson to the Deaf assistant and they would then discuss together how they would introduce it via the PVR strategy and what examples and materials they would need.

The bilingual programme using the PVR strategy was to be applied in 250 lessons, which was the total of all literacy (reading and writing) lessons for the five teachers (50 lessons each) (further details are presented in Chapter 7, Table 7.5). This number was determined by agreement with the researcher, the head teacher, the administrative supervisor,⁴⁸ the participating teachers and the Deaf assistants. The number of lessons selected was based on the teachers' average number of lessons (18 per week); the Deaf assistants participated in half that number to ensure that the time taken for the project did not conflict with the Deaf assistants' work for the school administration.

3.8.2 Materials provided

The teachers were given various materials during the PVR intervention. Six different English picture story books from the Oxford Reading Tree were presented to the teachers and Deaf assistants to serve as examples (only) on how to adapt and simplify the texts for the pupils. Because of the lack of Arabic picture books, such stories, although of English origin, provided examples of stories that the teachers could use in reading lessons to help the pupils to develop new vocabulary and engage in discussion with the teacher and peers. A number of Arabic story texts with pictures were also provided to the teachers and mothers. A new Arabic picture story, created by Al-Mulhim (2013; 2014) was also provided as an example.

Three examples of reading texts (two by the researcher and one by a participating teacher) were rewritten, then presented to the teachers to help them see how they might adapt the curriculum to make it suitable for Deaf pupils and for use in a sign bilingual approach. In the absence of Arabic video

⁴⁸The administrative supervisor of the school works for the Ministry of Education. She visits schools for which she is responsible, including responsibility for the development of teachers and the academic level of pupils.

materials in SaudiSL, BSL and English language short video clips with direct Arabic translation of Deaf adults and pupils in sign bilingual classes were also provided to the teachers to help them understand how they might apply the strategy.

Details of a number of Arabic and English websites and links to simple images and activities were texted to the teachers. A list of the most important instructions to be followed by the hearing teachers and Deaf staff during the implementation phase was supplied. Throughout the implementation of the strategy, the teachers developed a variety of new materials.

3.8.3 Observation

Observations, which are regularly employed in educational studies according to Wragg (2012), allow the researcher to obtain information regarding the interaction, programme and human setting (Morrison, 1993: 80, cited in Cohen, Manion and Morrison, 2011). Observations can also give the researchers data regarding the behaviour of participants who are unable to participate. Observational data can be used to check and supplement the data collected by means of various research (triangulation) (Flick, 2014).

However, according to Curtis, Murphy and Shields (2014:138), observations have disadvantages: the participants may change their behaviour because they are being observed, or a researcher's previous knowledge may be a source of bias.

a) Participant observations

Participant observation is a natural type of qualitative data collection method that was used in the current research (Cohen, Manion and Morrison, 2007). It enables researchers to gain information regarding experiences of humans and their behaviour in a certain context in natural conditions (Guest, Namey and Mitchell, 2012).

Three key elements of a participant observation study, suggested by Guest, Namey and Mitchell (2012: 76-77) were considered before starting the participant observations:

- Accessing the place where the aspect of human experience under study occurs.
- Building rapport with participants.
- Spending enough time interacting to get the required data.

Therefore, from October 2013, the researcher spent breakfast time with teachers, Deaf assistants or pupils in the playground, as well as attending most of the school's social and academic events. Data obtained from these observations were used in the frame of qualitative research. These participations helped to build good relationships with the school staff in general and the participants in particular, which in turn facilitated data collection. The participations also allowed reflection on events and activities as they occurred and provided in depth descriptions about these events (Carnevale et al, 2008). They enabled the framing of questions for the interviews and group discussions and obtaining of a deeper understanding of the sense of the data (Guest, Namey and Mitchell, 2012: 79). They assisted in developing an understanding of what works and what does not in relation to SBE in Saudi school.

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b) Simple unstructured observations

Simple unstructured observations were used from the start of the research study in April 2013 and they continued in October 2013. Data gathered from these observations were subjected to both quantitative and qualitative analyses.

Following the approach recommended by Dunne, Pryor and Yates (2005), all teachers and Deaf pupils had to be informed of the purpose of the researcher's presence before classroom observations could begin. Therefore, during the morning of the first day of school, the researcher had coffee with the teachers in

the staff room and briefly introduced the research topic. Reading teachers were informally interviewed to discuss their views of the difficulties that Deaf pupils faced in developing literacy, to identify the methods of assessing the pupils' literacy and the assessment tools used, and to understand more about the pupils' literacy levels. They were then asked if they would agree to the researcher undertaking observations in their classrooms. If they agreed, they were asked to sign a consent form, although this was not formally required, as approval had already been obtained from the Saudi Ministry of Education. The first teacher sent information sheets and consent forms to all parents to obtain their permission for classroom observations.

In the unstructured classroom observations, the researcher sat at the front of the class, where it was possible to see the teacher, the Deaf assistant and the pupils. As it was not possible to make audio recordings, she made handwritten notes during and after each session. The notes including anything that appeared relevant in relation to applying PVR strategy, such as the pupils' reading levels, the teachers' strategies and levels of sign language skill, and general observations of what was going on in the school. Photos were also taken of examples of Deaf pupils' writing. Symbols in the margins of the notes were used for communications and/or events; after returning home, or immediately after the observations, the researcher added comments to help her to recall what happened during observations. Data obtained from observations were analysed in parallel with data collection. This provided feedback that was then used to guide questions and themes covered in structured and participant observations.

Further unstructured observations were conducted in the school building and its facilities, including the playground during breakfast time, the Morning Assembly and the administration offices. These observations were used to describe pupil-pupil, pupil-teacher and hearing-Deaf staff communication, views and feelings. Pupils' behaviour during the reading pre- and post-tests was also observed (for more details of the observations during the test, see Chapter 7, Section 7.1).

c) Structured observations

In the second week of PVR implementation, structured observations began in the classes. Within the frame of qualitative research, these observations aimed to understand how the teachers and Deaf staff applied the strategy, how they communicated with the Deaf pupils and how the pupils were involved in the lessons, whilst trying to evaluate their reading progress. The researcher's role during the observations was limited to listening, watching and writing, without sharing. Notes were also taken manually during the observations and recorded on an observation sheet developed to suit the observation process (see Chapter 7, Section 7.3 for more detail of classroom observations, Appendix 4 for a translated example of the reading classroom observation sheet and Appendix 7 for a translated example of transcript of a teacher interview).

The main problem faced was that some teachers were absent without telling the researcher or the Deaf assistants in advance. Therefore, supplementary tasks such as conducting informal interviews and obtaining more information from the school files was included in the daily schedule.

3.8.4 Interviews

The interview questions were piloted with four Saudi students (two male and two female) who study in the UK and who were teachers of Deaf pupils in Saudi Arabia to check the suitability of the questions for the research purposes.⁴⁹

Two versions of informal and formal semi-structured interviews were used with participants: a) face-to-face group discussions and b) individual interviews, carried out by email or telephone as well as face-to-face. Poor quality of connections during telephone interviews made transmission of information difficult, and the high cost of international calls meant that interactions needed to be kept short.

Group discussions with teachers, Deaf assistants and mothers took place before, during and after the intervention.

⁴⁹ The pilot study for the interview questions, "An Investigation into Teachers' Views on the Use of Sign Bilingual Education in Special Schools for the Deaf in Saudi Arabia", was a required assignment for Introduction to Qualitative Research Methods in the Social Sciences, Unit Code EDUCM0004 IQUAL, within the MPhil in Bilingualism/Deaf culture at the University of Bristol, February 2013 (for further information see Basonbul, 2013a).

The participants' permission to be involved in the group discussions was gained earlier on in the research stages. The group discussions were conducted at times and times agreed with participants. I prepared the empty classroom or meeting room before the meeting to make it more comfortable for the participants and thus make the discussion more relaxed. The participants sat in a semi circle and I sat in front of them in order to observe them and make it easier for them to make eye contact. Dates and coffee were as a custom to break down barriers between the researcher and the participants.

My role during the discussion was as a non-directive leader trying to keep myself out of the discussion. I maintained the group discussions with the teachers, Deaf assistants and mothers by asking questions, presenting themes or making statements but without controlling them. This role was chosen due to its personal suitability as it allows the participants (especially older teachers) to express themselves more freely instead of feeling forced and restricted.

I used Arabic (written and spoken) with the hearing participants and SaudiSL with the Deaf assistants. Each group discussion started with identifying its targets to participants by reading them from the board. I then presented the main themes and or questions (one by one) in bullet points provided in a PowerPoint, and asked the participants to begin the discussion. All the participants were encouraged to participate in the interaction. If one of the participants had not satisfactorily participated in the discussion, I directed a comment or a question to invite her into the interaction. The responses were recorded using extensive notetaking as video and audio recording is culturally inappropriate.

Although group discussions were designed as an efficient use of time, two of the participating teachers preferred not to participate in the first group discussion. The two teachers who did not participate during the first group discussion, when the Head Teacher was present, did contribute actively to the final group session, when the school administration was not present. A further challenge to the success of group discussions was the absence of the volunteer interpreter from some sessions. This made it more difficult to deliver all information to the Deaf staff, who therefore interacted less. Further discussion

of the communication between Deaf and hearing participants is presented in Chapter 6.

Before starting individual interviews with teachers, the researcher introduced her own personal issues (e.g. challenges in studying in the UK) in order to build rapport and trust.

Hearing staff were interviewed in Arabic; SaudiSL and written Arabic were used with Deaf staff. No interpreter was used in the informal individual interviews with the Deaf assistants. However, a hearing teacher acted as a volunteer interpreter in the formal individual interviews with the Deaf assistants. However, a teacher volunteered to translate between the Deaf assistants and the other participants in the group discussions. Translation and transcription issues relating to the interviews were considered. In all cases, the coding and extraction of themes were carried out by the researcher. All analysis was done on the Arabic text; only significant examples and quotations have been translated into English.

a) Practical limitations of focus groups

Before the implementation of the PVR strategy in the school, a focus group discussion was used as part of the intervention.

The concept of focus group discussion might have been unknown to the research participants; however, focus groups resemble everyday conversations among Saudi males or females. From initial fieldwork in USDG2, it was found that the focus group technique would be difficult to use for several reasons: first, focus groups can take a long time to arrange (Bryman, 2012: 507). Since there were only six weeks available during the second visit to USDG2, it was possible to arrange only one meeting for the school staff, making it difficult to set up a meeting for a group with 6-10 participants (Morgan, 1988), even though there were several staff meetings per year at the school. Secondly, video-recording of the participants was not possible because of Islamic rules and Saudi traditions forbidding the photographing of women. During the fieldwork, all participants except one were also unwilling to be audio-recorded. As it was therefore

necessary to take extensive notes during the sessions, it was difficult for the researcher to fully follow the interactions and responses during the discussions.

In order to facilitate recording the responses, I used a list of general abbreviations in advance to the group discussion, I took notes as much as I able to during the meeting and I corrected them afterword. It is culturally difficult to interrupt Saudi people during conversations, especially if they are older. Group discussion, rather than formally structured focus groups offered a familiar setting, similar to daily conversation with participants discussing different topics. Therefore, a small number of participants were invited within the framework of a group discussion, described by Goodyear (1996) as a relatively structured technique for the disciplined exploration of specified topics.

The group discussion method is the best choice in exploratory and explanatory research, because it allows participants to explore a subject in depth (Vaughn, Schumm and Sinagub, 1996). It is also recommended by Greenbaum (2000) for use in research with Deaf people, being preferable to the traditional focus group. Group discussion allows participants to feel more secure and comfortable talking and reflecting on topics than individual interviews (Hillebrandt, 1979; Hatch, 2002) and participants are more willing to share views with colleagues (Hatch, 2002). The group discussion enabled concentration on the participants' views about the PVR strategy, reading progress and co-working with Deaf assistants. A further advantage of these group discussions is that they provided an opportunity for Deaf assistants to engage in discussions and explore their opinions and experiences of being involved in the PVR strategy and of teaching Deaf pupils to read Arabic. Saudi teachers may avoid taking responsibility for raising points on their own, out of concern that it might affect their job evaluation or relationships within their school, especially in a small community such as a Deaf school; the group discussion provided a safe context for such topics.

Seventeen group discussions took place with participating teachers, first teachers, headteachers, Deaf assistants and mothers of Deaf pupils in the meeting room or in an empty classroom, to introduce the research and share views about the research, SBE approach, the PVR strategy, ethical issues for

participants and the reading progress of Deaf pupils. The discussions were also used to validate the data gathered from participants.

3.8.5 Diary and field notes

Field notes were particularly useful in recording non-linguistic data during the observations and interviews.

As it was not possible to record the sessions, a detailed set of diary and descriptive notes were made during all observations. These field notes provide some insight into the fieldwork structure and dynamics of school practices. The diary was used to document experiences during the fieldwork, taking notes of the reading lessons; school activities; daily interactions, behaviours and reactions between staff and pupils; and pupil-pupil interactions. The day and time at which events occurred were recorded alongside notes of personal feelings and comments about what had been observed as reminders of information during the analysis process. In the first two days, the researcher noted in great detail everything that occurred throughout the day. Later, it was possible to be more selective, noting only note the elements of daily interaction relevant to the research. Typically, journal entries were completed within the school setting. Alternatively, they were completed in the taxi from school to home or soon after arriving home, whenever it was not possible to find free time to be alone at the school (Cohen, Manion and Morrison, 2007).

The diary notes were transcribed using descriptive narrative, and supplemented by demographic information, dates and locations. This provided detailed information about life in the Deaf school as background to a consideration of the potential of introducing SBE, and participants' characteristics in relation to their level of sign language, as well as activities occurring during observations (Patton, 2002).

3.8.6 PVR implementation

The PVR strategy requires planned and purposeful switches between languages to provide learners with direct support for bilingualism (Li, 2005). Although some common bilingualism programmes support the separation of spoken/written language from sign languages, flexibility in using two languages

is crucial in these programmes in order to guarantee that all learners have access to content and communication (Gárate, 2012: 3). Flexibility in this approach allows the teacher to use different languages for different functions in a sign bilingual class, with the languages used sequentially according to the teacher's needs in instruction and the pupils' needs in communication (Martin-Jones, Blackledge and Creese, 2012: 241). In this way, pupils build up structures, vocabulary, and patterns of discourse, which in turn allows flexible use of both languages (Cummins, 2008). Moreover, the PVR strategy requires teachers to use support materials such as a graphic organiser, visual images and concrete subjects and activities (Green, 2013). These materials can play a significant role in teaching reading to Deaf pupils by simplifying reading texts and facilitating the process of reading comprehension, especially as Deaf pupils rely on visual features to receive information.

The PVR strategy was implemented from October 2013 in five reading classes: Grade 2 (one class), Grade 3 (two classes) and Grade 5 (two classes). The following example (from a Grade 3 reading class) shows how the PVR strategy was implemented.

a) Preview phase in SaudiSL

The Deaf assistant gained the attention of the pupils by turning the light on and off, and made direct eye contact with each pupil. She then introduced the lesson, about the city of Riyadh, in sign language, asking the pupils: "When and where was your birthday? Where do we live? Is it a large or small city?" The Deaf assistant used pictures where these were needed to facilitate learning. She showed the pupils a map of Saudi Arabia with the five largest regions highlighted. They were asked to highlight the city where they lived, then to underline the largest city they could see on the map (Riyadh). The assistant continued with questions: "Have you been to Riyadh before? What did you see?"

The title of the lesson was next written on the board by the hearing teacher, who signed RIYADH. She asked the pupils to produce the sign in a group and

then individually. This technique was repeated for other city names and new words. The teacher used speech at times (see Chapter 7 for transcripts).

b) View phase in SaudiSL

In the view phase, the teacher and the assistant divided the story into several sentences (these were simplified and unfamiliar words modified). The Deaf assistant began the lesson by telling the story in SaudiSL. PowerPoint slides were used to provide visual support to the story's events and characters. A physical map of Saudi Arabia was also used by the Deaf assistant to explain what was meant by describing Riyadh as a green land within the desert. The Deaf assistant asked questions and the pupils replied, interacting about the topic. Then she assessed the pupils' reading and their understanding of the story and new words by asking them to write the story in simple sentences, draw the events or tell the story in sign language.

c) Review phase in Arabic

The review phase offered the greatest challenges for teacher and pupils, because they needed to move from easy comprehension of the story through sign and pictures to an abstract representation in text. This was made more difficult by the teacher sometimes speaking rather than signing. The teachers, therefore, were encouraged to use all communication means for example drawing, signing, writing in order to meet the challenge. Questions such as "Why does Riyadh have this name?" were not understandable in spoken Arabic without signing. As the lesson was meant to be about literacy, teaching speech was not appropriate. However, as Wood et al. (1986) reported, teachers of the Deaf often turn reading lessons into speech lessons using only speech with the pupils and emphasising correct pronunciation of the text rather than the meaning.

d) Assessment phase in SaudiSL

Assessment was sometimes integrated with the review phase; the hearing teacher and assistant could both participate in this phase, depending on the content of the reading lesson. The hearing teacher corrected pupils' writing and the assistant assessed their drawing and retelling of the story. It was

emphasised that reading assessment had to be objective, not based on the teacher's and assistant's ability to understand the pupil, but on the pupil's reading skills, with all pupils receiving equal support.

3.8.7 Reading measures

Baseline measurements of pupils' reading were collected using the newly devised reading test (Chapter 5), teacher ratings, and interviews with staff and mothers.

3.9 Data analysis

The impact of the intervention on the pupils was assessed after 12 months of PVR training. Reading measurements, teacher ratings, interviews with staff and with mothers were repeated, in order to determine the extent of change.

Sequential mixed analysis was used. This has the advantage of being appropriate for analyses of both qualitative and quantitative data, and has been used by researchers such as Anderson et al. (2012). This model was chosen for several key reasons, namely clarity, organisation and appropriateness to the research design. Each stage, various methods of analysis were used. For example, thematic analysis was applied as a rigorous analysis of relations between participants (Boyatzis, 1998) and was structured and comprehensive (Alhojailan, 2012).

Initially, the analysis was applied to the data in the Arabic language so as not to lose the nuances relating to Saudi culture. Following the observations and interviews, developing themes were colour-coded by applying different colour highlighters. This allowed common themes to be identified. Subsequently, key points taken from interview and observation data were translated. Information was organised into groups (Flick, 2009), where themes were linked to research questions. When the data from interviews were analysed, accuracy was confirmed using respondent validation (Stake, 2010), asking participants for feedback on the analyses of interviews and observations. Thus, in the final group discussions with participants, informal analysis was used to validate the themes and concepts that emerged from individual interviews and observations.

Discourse features of the participants in the group discussions were not analysed, as the discussions were not recorded verbatim. Signed contributions were glosses (upper case); fingerspelled forms are represented by hyphens between letters.

An example of the conventions for presentation of participants' contributions is presented in Table 3.6.

Table 3.6: Analysis of participant utterances

Type of Sentence	Example
SSA and sign language	WHAT? WAS THE UNIT ABOUT YESTERDAY, yesterday?
English	<i>What was the unit about yesterday?</i>
Arabic	ماذا كانت وحدة الدرس بالأمس؟
Fingerspelling	c-i-t-y, CITY 2nd h/o / I / y HOLY.
English	<i>City, Two Holy Cities.</i>
Arabic	مدينة، مدينتان مقدستان

Finally, legitimation models, both quantitative and qualitative, were applied to evaluate the trustworthiness of the data and the interpretations derived from the analyses.

3.10 Summary

This chapter has described in detail the study's aims, design and methodology. The use of a mixed-methods approach enabled the collection of data and analyses which could not be achieved through either quantitative or qualitative methods alone. In this study, quantitative methods were used to measure the impact of the intervention, while qualitative methods were used to explore the participants' use of the PVR strategy. The next chapter presents comprehensive analyses of the notes taken during the initial fieldwork.

Chapter 4: Fieldwork in Saudi Arabia

Exploratory fieldwork was used in the study as a theoretical tool to support the understanding of the underlying dynamics of practicing Sign Bilingual Education (SBE) in the context of literacy lessons. This chapter presents comprehensive analyses of notes taken throughout the fieldwork.

4.1 Fieldwork stages

All procedures were carried out during field trips to Saudi Arabia.

The preliminary stage of the fieldwork, from Thursday 25/4/2013 to Thursday 9/5/2013, in the Urban School for Deaf Girls 2 (USDG2) included:

1. Collecting statistics related to Deaf pupils and their schools in the city proposed for the study.
2. Preparing the pilot of the reading pre-test with Deaf and hearing girls and boys.
3. Obtaining final permission from the Ministry of Education to access the school.
4. Creating points of contact with hearing teachers, Deaf assistants and other relevant individuals.
5. Developing a relationship with those involved in the study.
6. Selecting examples from notebooks of the writing of pupils in Grades 1, 2, 4 and 6 for the initial assessment of their literacy levels.⁵⁰
7. Investigating school library resources.
8. Informing parents about the study and obtaining their consent for collection of data relating to their children's reading performance and personal information.
9. Providing orientation group discussions with potential participants, as presented in Table 4.1.
10. Conducting informal interviews with school staff.
11. Carrying out unstructured classroom observations of methods of communicating with Deaf pupils.

⁵⁰ In the first visit to the school, these were the only grades being taught.

Table 4.1: Group discussions with participants before the intervention

No	Day, date, duration	Activities	Attending	Total	Language
1	Sunday 5/5/2013 (3 hours)	Discussed: The researcher's study aims, plans and proposal, bilingualism, SBE, its advantages and supporting research Reading with Deaf pupils. Leaflet about SBE.	Administrative supervisor Head teacher Deputy head teacher First teacher Librarian Audiologists (n=2) Participating teachers (n=3) ⁵¹ Other teachers (n=7) ⁵² Deaf assistants (n=2)	19	Spoken and written Arabic +Mixture of Saudi Sign Language (SaudiSL), Arabic Sign Language (ArabicSL), sign supported Arabic by a volunteer teacher translating for the Deaf assistants
2	Tuesday 7/5/2013 (3 hours)	Discussed: The PVR strategy, what is required from the participated staff. An SBE reading lesson using preview view review (PVR) with the researcher and one of the Deaf assistants. Leaflet about PVR.	Head Teacher Deputy Head Teacher First teacher Audiologist (n=1) Participating teachers (n=3) Other teachers (n=9)	18	

⁵¹Two teachers expected to participate were absent due to maternity and sickness. We had a separate meeting with them before starting the intervention.

⁵²The non participating teachers attended the first meeting because we were yet to select participants.

Chapter 4: Fieldwork in Saudi Arabia

No	Day, date, duration	Activities	Attending	Total	Language
			Deaf assistants (n=2)		
3	Wednesday 8/5/2013	The same as in group discussions 1 and 2.	Deaf assistants	2	Written and spoken Arabic ⁵³ SaudiSL + ArabicSL by the researcher
4	Tuesday 27/08/2013 (3 hours)	The same as in group discussions 1 and 2.	Participating teachers (n=2) absent from group discussions 1 and 2. Deaf assistant (n=1) as Deaf model in explaining PVR.	3	Written and spoken Arabic SaudiSL + ArabicSL by the researcher
5	Wednesday 28/08/2013 (1.5 hours)	Discussed participation rights in the research and ethical issues, then they signed the consent form.	Head teacher ⁵⁴ First teacher Participating teachers (n=5)	7	Written and spoken Arabic
6	Thursday 29/08/2013 (2 hours)		Deaf assistants	2	Written and spoken Arabic SaudiSL + ArabicSL by the researcher

⁵³Spoken Arabic was used because one of the Deaf assistants used speech reading.

⁵⁴This headteacher was previously the deputy head and became head after the headteacher retired.

It had been intended that during the second phase of the field work the intervention should start at the beginning of the school year, i.e. 26/08/2013; however, the Ministry of Education decided at short notice to undertake the rebuilding of some facilities at USDG2. Additionally, on the retirement of the head teacher with whom the intervention had been agreed, the deputy head became the new head teacher. The school staff were busy preparing new classrooms. The delay enabled the researcher to:

- collect further information regarding on the pupils from their school files;
- obtain written approval from the reading teachers, Deaf assistants, head teacher and first teacher, and conduct further group discussions (numbers 4-6 in Table 4.1).

The third phase of the fieldwork took place from 24/10/2013 to 02/12/2013. It comprised:

1. Building a strong rapport with the school staff; the researcher was given access to further information and the school staff regarded her less as a researcher and more as a colleague. The researcher held some informal interviews and met some mothers face-to-face to complete their children's personal data records.
2. The teachers completed their first rating of the pupils' literacy performance within the 'teacher Comment' section (questions 18-30) of the Personal Data records (Appendix 9).
3. Extra group discussions (Table 4.2).
4. The start of participant observations and implementation of the PVR strategy in the participating classes.

Table 4.2: Group discussions with the participants before the intervention

No	Day, date, duration	Activities	Attending	Total	Language
1	Thursday 24/10/2013 (1.5 hours)	Discussed general and specific teaching strategies during reading lessons.	Deaf assistants	2	Written and spoken Arabic SaudiSL and ArabicSL by the researcher
2	Monday 28/10/2013 (1.5 hours)	Provided the Deaf assistants with a copy of the agreed timetable for the intervention lessons. Discussed their roles in reading lessons.			
3	Wednesday 30/10/2013 (1.5 hours)	Selected reading texts from school books and discussed methods for teaching them.			
4	Sunday 27/10/2013 (1.5 hours)	Discussed The pupils' pre-test results and provided each teacher with notes on each pupil's reading performance. Presented a number of English stories (Oxford Reading Tree) such as The Hedgehog, The Lost Teddy, Kipper's Diary ⁵⁵ and some Aesop fables in Arabic, such as The Lion and the Mouse, The Cat and the Bell. Mrs. Athar, Grade 2 teacher, provided an example of an adapted reading text. Provided An article written by a Saudi Deaf university graduate who studied in America. A list of internet websites with images and Arabic stories to help in adapting reading texts.	Head Teacher First teacher Participating teachers (n=5)	7	Written and spoken Arabic

⁵⁵ Picture stories with few or no words, or a 3-word sentence. There are no comparable Arabic stories.

No	Day, date, duration	Activities	Attending	Total	Language
		<p>English stories adapted by a hearing teacher for Deaf pupils.⁵⁶</p> <p>A list of important information that should be considered during the intervention.</p> <p>Principles of reading for Deaf pupils</p> <p>A copy of the agreed timetable for the intervention lessons.</p>			
5	Tuesday 29/10/2013 (2.75 hours)	<p>Discussed:</p> <p>The researcher's study aims and plans, SBE and its advantages.</p> <p>Online video on the importance of early sign language learning, with 6-month-old baby signing 'milk'</p> <p>Baby sign language, a Deaf person's life (Arabic video).</p> <p>Mothers' and pupils' participation rights and ethical issues, then they signed the consent form for participation.</p> <p>Encouraged them to visit the Deaf Club.</p> <p>Open discussion.</p> <p>Provided them with a leaflet about SBE.</p>	Mothers	11	Written and spoken Arabic

⁵⁶ King Arthur and I am the Sheriff of Nottingham were given to the researcher during a visit to Elmfield School for Deaf Children, Bristol, UK.

The fourth phase of the fieldwork should have begun in May 2014, but because of serious public health issues related to the MERS virus in western Saudi Arabia, as well as the closing of the Centre for Deaf Studies (CDS) at the University of Bristol, resulting in the need to look for a new supervisor, this was delayed until early August 2014. Instead of the planned face-to-face interviews, formal telephone interviews were conducted with the teachers (n=2), the head teacher and the first teacher, and Face Time interviews were carried out with one of the Deaf assistants.

It was possible to return to visit the school from 24/08/2014 to 31/08/2014. This enabled the researcher to:

1. Conduct formal face-to-face interviews with those participants who had not been interviewed by phone.
2. Collect the participants' attendance data to determine whether this has an impact on reading performance.
3. Conduct a group discussion (number 1 in Table 4.3).

The fifth phase began on 11/12/2014 and finished on 04/01/2015. It comprised:

1. Conducting the post-reading test with the participating Deaf pupils.
2. Conducting formal face-to-face interviews, structured observations and group discussions. Each interview with the Deaf assistants lasted around 90 minutes; interviews with the hearing teachers lasted one hour.
3. Conducting further group discussions numbers 2-6 in Table 4.3.

Table 4.3: Group discussions with the participants during and after the intervention

No	Day, date, duration	Activities	Attending	Total	Language
1	Thursday 28/8/2014 (1.5 hour)	Updated the teachers with the initial results. Discussed the possibility of continuing the intervention. Presented a new signed and written Arabic story: A trip to the sea (Al-Mulhim, 2014).	Head teacher First teacher Participating teachers (n=4, one absent) Non-participating teachers (n=2) Deaf assistants (n=2)	10	Written and spoken Arabic SaudiSL and ArabicSL by the researcher and one attending teacher
2	Tuesday 16/12/2014 (2.5 hours)	Updated mothers on the intervention and the reading results. Discussed different topics, presented in 0	Mothers	6	Spoken Arabic
3	Sunday 21/12/2014 (1.5 hours)	Updated the teachers with the results. General discussion (e.g. Deaf education).	Deaf assistant (n=1) A volunteer teacher interpreter	2	SaudiSL with the Deaf assistant Spoken Arabic with the researcher
4	Sunday 28/12/2014 (1.4 hours)	Pros and challenges of the programme. Discussed the findings of individual interviews with the participants.	Deaf assistant (n=1) A volunteer teacher interpreter	2	
5	Thursday 25/12/2014 (1.5 hours)		The Head Teacher The first teacher The participating teachers (n=5) Nonparticipating teachers (n=1)	8	Spoken Arabic
6	Sunday 04/01/2015 (45 minutes)	Open discussion regarding the importance of Deaf education and attitudes towards Deaf persons e.g. the possibility of marriage to another Deaf person.	The participating teachers (n=5) Other teachers (n=2)	7	Spoken Arabic

4.2 Field notes summary

The following are representative of topic areas that covered in the fieldwork:

- Change in school management
- Perception of the research and the researcher
- Language choice
- Teachers
- Involving Deaf people
- Involvement of parents
- Sign bilingual education

Notes and observations were collated and subjected to a thematic analysis. Presented below are the primary themes of relevance to the SBE intervention.

4.3 Make sense of the data

A sequential mixed analysis was selected for the research data, because of its suitability for the type of data collected, the design and targets of the research, research questions and sample size (Onwuegbuzie and Teddlie, 2003). This model uses adductive reasoning, i.e. it combines both deductive and inductive reasoning (Morgan, 2007).

The data from the reading test (sections 1-4) and the Personal Data Record for Deaf Children were analysed using quantitative methods with where possible, to monitor the pupils' reading performance. Given the small size of the quantitative data set descriptive statistics were most often used.

The data from the reading test (section 5), interviews and observations were analysed using qualitative methods to examine views of teachers, Deaf assistants, the head teacher and the first teacher regarding their experiences of applying the SBE in reading lessons. The qualitative data were subjected to thematic analysis to methodically observe people's interactions (Boyatzis, 1998) and to examine relationships, commonalities and differences (Gibson and

Brown, 2009). The thematic analysis comprised six phases (Braun and Clarke, 2006: 87), as explained in the following subsection.

4.3.1 Phases of thematic analysis

The first phase was one of familiarisation with the data by transcribing, reading and rereading the data collected at the observation stage; the interviews with the teachers, the Deaf assistants, the head teacher and the first teacher; followed by writing down questions, notes and preliminary thoughts in the margins (Creswell, 2009). In the second phase, primary codes were generated from the notes.

The third phase brought all the codes together to identify interesting and primary themes and to group and categorise them. These themes comprised: attitude change; the issues of language/Arabic literacy and sign language; professionalism; enhancing of Deaf assistant-pupil social relationships; power sharing between hearing teachers and Deaf assistants; exploitation of Deaf assistants; and the compartmentalisation of the innovation (see Table 8.1 and Table 8.2). The themes were used to code each of the participants' responses.

The fourth phase consisted of reviewing the themes and identifying further important responses in order to categorise them. In the fifth phase, the final themes were defined and named by examining all uncoded responses to decide whether they could be labelled by new emergent themes.

In the sixth phase, the report was produced, continuing to analyse the data (in Arabic, to preserve Saudi cultural nuances) and choosing extracts from interviews and observations. Selected extracts were then translated into English and the themes were linked to the research questions to build analytical concepts for both the observations and the interviews. To protect the participants' anonymity, pseudonyms were used (Bloor and Wood, 2006).

4.4 Description and analysis of field notes from USDG2

The themes are the preliminary data. The analysis of the data collected during the study is also described here for convenience, but is explained with the data in Chapter 8.

4.4.1 Changes in school management

The changes of administrative supervisor and Head Teacher are likely to have affected the intervention. Six weeks into the intervention, two participants (Mrs Manal, Deaf assistant and Mrs Abrar, teacher) expressed dissatisfaction with the head's management skills:

The Head Teacher doesn't regulate the school. O God, Najwa [researcher], the school is a mess. Many teachers are absent and they want to leave the school [...] Mrs Sally wants to retire... the Head Teacher cannot manage the school. (D-Man1)⁵⁷

A remark made by Mrs Abrar (hearing teacher) at the end of the intervention sesirammus this:

The school is a real mess and we [the school staff] didn't feel the value of the previous Head Teacher until she left, because she was explicitly great in the school administration. She used to give the school a lot. She paid from her pocket for preservation of the school system. Look now how our situation is since the beginning of the school year. We live in hot temperatures because there is no air conditioning nor electricity. (T2-Abr1)

It became clear that the new Head Teacher could not run the school properly; she was not a facilitator of learning, embracing change or empowering hearing and Deaf participants to become good teachers.

4.4.2 Perception of the research and the researcher

Most teachers expressed their willingness to develop the literacy-teaching strategy. Before the intervention began, a literacy teacher, Mrs. Abrar, told the researcher:

Finally, we [teachers] have found someone who is willing to apply a new strategy [...] we [teachers] really need help in how to

⁵⁷The quotes from interviews conducted before the intervention are marked 'T1'; those that emerged during the intervention are marked 'D' and post-intervention quotes are marked 'T2'. The first three letters of the teacher's or assistant's name is followed by a number designating that particular quote. For example, the code T1-Ath3 indicates that this is the third quote used from Mrs Athar's pre-intervention interview.

develop reading skills for Deaf pupils [...] we will help you with anything you need during your work in the school. (T1-Abr2)

Deaf assistants also expressed their pleasure in developing the literacy skills of Deaf pupils and the consideration of Deaf adults and sign language. Before the start of the intervention, Msr Manal told her Deaf colleague, Mrs.Lama:

Her research is new and seems interesting because she felt the importance of Deaf people and their language.

Mrs. Lama replied:

Mashallah [whatever Allah wills] she does [...] Your thinking is right. No one did that before [...] Everybody wants to talk with Deaf people. (T1-Lam1)

4.5 Themes arising from observations in the school

This section summarizes some themes that emerged from observations in the school.

4.5.1 Language option

Most of the hearing staff reported that the school staff used Arabic signing. When the school staff referred to 'Arabic signing', they did not mean sign language as a language but the lexicon of signs appearing in the Unified Arabic Sign Language Dictionary.

However, different communication approaches (e.g., signing, spoken and written Modern Standard Arabic and Sign Supported Arabic (SSA)) were used by the hearing and Deaf staff in the school. Table 4.4 summarises communication methods used in the school before starting the intervention.

There was no sign language environment in the school system and Deaf people's communication needs were not taken into account when making plans for the school, which shows a lack of fairness between the Deaf and hearing staff.

Table 4.4 Communication methods among school staff⁵⁸

Conversational Participants	Type of Communication
Among hearing teachers	Spoken colloquial Arabic
Hearing teachers with the Deaf staff	Sign-supported colloquial Arabic with most of the Deaf staff and spoken Arabic with one of the Deaf staff
Among Deaf staff	SaudiSL
Hearing teachers with pupils	Sign-supported colloquial Arabic or spoken and written Modern Standard Arabic (MSA)
Pupils with hearing teachers	Arabic Sign Language (ArabicSL) and sometimes Saudi Sign Language (SaudiSL); some pupils used some spoken Arabic
Among the pupils	SaudiSL and sometimes ArabicSL
Hearing administrators with Deaf staff	Sign-supported colloquial Arabic or spoken Arabic
Hearing administrators with pupils	Sign-supported colloquial Arabic and spoken Arabic

Table 4.4 shows spoken Arabic as the colloquial, main language used everywhere in Urban School for Deaf Girls 2 (USDG2) among the hearing teachers and other hearing staff. Colloquial or vernacular Arabic dialects were used in daily life, while MSA was used for written Arabic. When teachers were communicating with Deaf staff in the school they used Sign-supported Arabic (SSA) (SimCom - simultaneous communication), i.e. speaking and signing at the same time. Hearing teachers and staff used MSA, sometimes mixed with colloquial Arabic and sign language or Sign-supported Arabic, when teaching the pupils.

The Deaf staff stated that they preferred using the 'old sign language' [SaudiSL], because it had "clearer signs than the new sign language [ArabicSL] and it is familiar to us". However, they all said that they had no problem in using ArabicSL if it was necessary to do so. Two of the Deaf staff said that they usually used SaudiSL with pupils in the school, but occasionally used ArabicSL,

⁵⁸ The information in the table is from our observations in the school; the data on the type of communication between the Deaf staff themselves, between them and hearing teachers or Deaf pupils was confirmed by the Deaf assistants.

in particular with pupils (usually in Grade 1 or 2) who had not yet learned SaudiSL.

4.5.2 Teachers

a) Teachers' sign language competence

All teachers in USDG2 were hearing, with four Deaf administrators among the staff of 36 people. This is a considerable number of staff for 35 pupils. The psychologist, sociologist, counsellors, nurse and cafeteria staff worked across the campus. Each teacher had to teach only 18 lessons per week (35-45 minutes for each lesson) in addition to involvement in some extra curricular activities.

The four senior teachers had bachelor's degrees in either maths, religion or art. None of these teachers had taken any courses related to deafness, Deaf culture or sign language during their university study. At the point when they started working with Deaf pupils, they might never have met a Deaf person and were at beginner level in sign language. Most of them had learned sign language from the pupils they taught, and in workshops led by hearing trainers. On the other hand, within USDG2, ten teachers (five of whom participated in this study) had a bachelor's degree or a higher diploma in hearing impairment. These teachers had attended extensive theoretical courses on deafness, interacting with Deaf people, Deaf people's language, and the psychological and educational assessment of the Deaf, but had only limited training in sign language.

Two Deaf staff had diplomas in art; two had only a high school qualification. Their sign language competence was advanced and they preferred SaudiSL, which they had used since they were young. However, they reported that they were able to use ArabicSL as well. One of the Deaf staff reported that in the past, Egyptian hearing teachers working in the school had used good sign language.

According to Mrs. Afnan (hearing administrator),

All the hearing teachers in the school have perfect sign language [...] except one or two who need to develop their sign language.

All of the hearing teachers themselves believe that their sign language is good. (T1-Afn1)

Most of the hearing teachers could be seen checking the ArabicSL and/or SaudiSL dictionaries to support their teaching before they went to their classes. However, there was a lack of high-quality, consistent sign language in school. Four Deaf staff and two hearing teachers used SaudiSL with correct grammar, facial expression and body language. None of the hearing teachers had contact with Deaf adults outside the school and they had only short conversations with the Deaf staff within the school. This made it difficult to create an sign language environment for Deaf pupils and there was a lack of understanding of the relationship of skills in sign language to a successful SBE.

b) Teacher training

The school provided several annual and occasional professional and educational training courses. Sign language training courses for teachers were also in the school plan, because, according to the head teacher, “We realized that Deaf pupils’ sign language was poor”. However, sign language training was only once held a year, for 3-5 days. These courses were conducted by two hearing teachers in the school (usually the first teacher and one of the reading teachers); no Deaf adults took part. During these courses, trainers worked only on teaching sign vocabulary taken from the Unified Arabic Sign Language Dictionary, without any grammatical structure. They made some gestures to the trainees, who had to repeat the signs, instead of using natural sign language for Deaf individuals. Some of the teachers had attended external sign language training courses at the Ministry of Education or at private training centres. These courses also lacked the participation of Deaf fluent signers.

Although the school offered a variety of professional and educational training courses, the importance of sign language training courses was not always recognised.

Mrs. Rugaia (hearing teacher) reported when she was asked about whether teachers suggested topics for training courses to the school administration:

I did not make a suggestion to the administration. Who should I make a suggestion to? Tell me who? [More loudly]... I will make a suggestion when there is appropriate care for the disabled and for teaching Deaf people. All of the administrators and policy makers are unwilling to change. (T2-Rug1)

It is clear that more sign language training is needed for the teachers in order to create a sign bilingual environment.

c) Teachers' and pupil's attendance

Pupils are required to attend school in Saudi Arabia for 185 days a year. However, there are often absences because of lack of transportation, hospital appointments or when the children are encouraged to take off a week before and after the official holidays.

In USDG2, some teachers were absent for a week in order to attend a training course, with pupils required to attend school even though there were no classes. The primary school library was closed for a week when the librarian took a course in Riyadh. The relaxed attitude to absences suggests that the staff may have had a weak commitment to engagement with their pupils and that they were not concerned with their educational outcomes.

4.5.3 Involving Deaf people

d) Access to training for Deaf staff

Deaf staff in the school did administrative work such as printing documents, handling correspondence between the Head Teachers and the teachers, and supervising pupils during teacher absences. Both of the participating Deaf assistants were employed through open competition at the Ministry of Civil Service. They had been recruited 26 years earlier with certificates of secondary education; the Ministry of Education had allowed them to complete their high school education after being appointed.

There was a lack of training for the Deaf staff in the school. Two of the Deaf staff said:

We've never been on any training courses, [...] although we keep asking the school administration to send us on courses, because we need to improve our knowledge and experience. [But they] said that these courses were not for Deaf people, so we wouldn't benefit at all. (T1-Man2)

Both also reported that they wished to complete their postgraduate education, but they could not use the regulations of the Ministry of Education to do so.

e) Lack of contact with the Deaf community

None of the participating teachers reported ever having visited the Deaf club or Saudi Association for Hearing Impairment in their city, although two of the Deaf staff had been active members of the club. Mothers of the Deaf pupils also reported that they did not visit the club for several reasons, including the distance from their homes and lack of transportation. Some of the mothers said that they had not even heard of the Deaf club. In a pained and frustrated voice, Nawal's mother, who was one of the few with knowledge of deafness and the Deaf community, said: "Our Deaf daughters are in isolation from society". She also described how Deaf pupils felt in the hearing world:

Even if we [hearing family members with her Deaf daughter] meet together with the family, my daughter still roams around the place without talking to anyone.

There was only one female Deaf club in the city of 2.8 million people. It was located in the north of the city, presenting transport difficulties for mothers from the south. Most of the Deaf pupils in the study had never been to the local Deaf club (n=16); only one had been an active member. There was no direct contact between the club, under the Ministry of Education, and USDG2, under the Ministry of Social Affairs. Some Deaf pupils were able to visit the club after school, but school staff could not take them there during school hours, the Ministry of Education having stopped all school educational trips because some accidents had previously occurred during such trips.

4.5.4 Involvement of parents

The data from group discussions with mothers has been only partially analysed as a result of direction from my upgrade committee concerning the already existing plethora of data. This section reports the analysis of the initial themes emerging from these group discussions, listed in Table 4.5.

Table 4.5: Mothers' perspectives –Initial themes

No	Themes	Explanation
1	Poor academic and literacy levels	A gap in academic level between Deaf and hearing pupils and school leavers.
2	Poor communication in both Arabic and sign language	No organised home-school programmes.
3	Lack of home-school environment	No organized programmes between the school and home.
4	Concerns and priorities of mothers	The mothers were concerned about their own education as well as their daughters' education.
5	Frustration of mothers	The mothers felt the lack of sign language experts in Deaf schools and the need for an ordinary life, in addition to feeling guilty about their daughters' deafness.
6	Lack of communication in the family	Family members' weak sign language resulted in limited interaction with the Deaf family member.
7	Lack of willingness by parents to take responsibility	The father's role was limited to going to work and earning money, while the mother's role was to raise the children and educate them.
8	Lack of social activities – Lack of mothers' awareness of social activities for Deaf people.	The poor link between Deaf schools and the Deaf club or the Deaf association resulted in a lack of awareness by the mothers about social activities for Deaf people.
9	Deaf rights not respected	Absence of legally mandated services such as SaudiSL interpreting and transport to and from school.

Most of the mothers of participating Deaf pupils said that there were no Family Support Programmes (i.e. early intervention programmes) in the city. They were often recommended to provide hearing aids for their children, then directed to a speech therapist to encourage them to speak. Thus, parents might have nowhere to go to learn SaudiSL. Few were able to make informed decisions about a Deaf child's language, as the majority were unaware of the importance of acquiring language at an early age.

All parents in the study were hearing. Most of the mothers said that they did not use SaudiSL or ArabicSL, as they had never learned a sign language and did not know much about them. Some reported that they had learnt signs from their Deaf children, while a few had enrolled in sign language training courses at the school. Although the school offered a sign language training course each year for mothers of Deaf children, the mothers said that it was not long enough, lasting only 2-3 days.⁵⁹

There was no home-school programme. The mothers did not engage with the school activities or daily homework of their daughters. Most of the mothers had no books, so when at home, their children had no books to work with. They may not have regarded literacy as important, which is likely to reduce the impact of this research study on families and pupils.

Furthermore, based on what the mothers and the first teacher said, there was no relationship between the deaf pupils' sign language and their parents' sign language. The Deaf pupils were taught ArabicSL at the school; some parents reported that they used SaudiSL. One mother said, "We don't understand our daughter's signs". When the mothers said that they used SaudiSL, they usually meant that they used Sign-supported Arabic or gesture. One mother said: "I try to use different signs until my daughter understands me", and a number of mothers agreed with her.

During the mothers' group discussion, some expressed concerns with the poor performance of their children in reading and writing. The mother of Nidaa said that her daughter, in Grade 3, could not write her name; two other mothers, who had daughters who had graduated from this high school, reported that they could not "even write or read a simple sentence correctly".

4.6 Sign bilingual education

Sign bilingual programmes require early exposure to sign language to facilitate access to the second language. Therefore, as part of the fieldwork, it was

⁵⁹Because of the gender separation rule in Saudi schools, I met only with mothers of Deaf pupils.

important to collect information on the extent of exposure to the two languages, the curriculum, teaching about Deaf heritage, and strategies for teaching.

4.6.1 Previous experience of SBE

The concept of SBE was not new for teachers. However, they were reluctant to implement the strategy, as their impression of SBE was negative. The Head Teacher reported that in 2012, one of the geography teachers had applied this strategy with high school pupils in geography lessons for two months without the involvement of Deaf adults. One of these lessons was presented to the school staff, who did not welcome the strategy. The Head Teacher thought that this could be due to its novelty or that the teacher had not provided sufficient information about this strategy or its importance.

4.6.2 Age of acquisition of sign language

Only five of the participating pupils were reported to have known sign language before starting school. Six were reported by their mothers to have been first exposed to sign language before the age of 5; eleven were between 5 and 10 years old when they began to use sign language.

4.6.3 School curricula

USDG2, like any other special school for Deaf pupils, generally used textbooks developed by the Curriculum Development Commission (see 0 for an example of a reading text curriculum for Deaf Pupils). Some of the teachers at USDG2 used other approaches, which did appear to be beneficial. Mrs. Rugaia tried to adapt the reading texts for her Deaf pupils. Before the intervention began, she stated:

I re-wrote some of the reading texts to simplify them for the pupils; however, I sometimes had difficulty in doing so, due to the lack of time and the difficulty in finding simple synonyms.

Mrs. Abrar said “I used play to teach the pupils new words, but not in every lesson”. This was never done in groups and there was no interaction or discussion with other pupils or with the teacher. Mrs. Abrar also reported using the “wonderful strategy” of mental maps, which helped her pupils remember the

words while reading texts. The pupils successfully learned words and how to write short phrases, compared to pupils from the other classes; however, they were still unable to create sentences.

Two teachers used educational visual materials from “real life” (e.g. computer, projector) in most of their reading lessons. However, they were limited to presenting ready-made educational programmes; no official internet was available inside the school. Before the start of the intervention, Mrs Athar said:

I used Al-Ostora as a special reading programme published on DVDs, which was developed for hearing pupils, with no sign language or subtitles. It includes an audio-visual component in spoken and written Arabic.⁶⁰ (T1-Ath1)

However, in one of the reading lessons before the intervention began, Mrs. Athar’s pupils seemed not to understand the Al-Ostora story; they began turning towards each other, showing that there was a lack of understanding, and a child asked her classmates: “What happened in the story?” They also did not answer the teacher’s questions about the story. The teacher then said: “I’ll re-run the story again and you must pay attention very well this time”. Surprisingly, Mrs Athar said, “I cannot modify the reading text and I depend on Al-Ostora in teaching the reading curriculum, as I cannot use a computer too much because of my health”. It seemed that teachers did not see it as their responsibility to modify reading materials to suit deaf pupils.

None of the teachers used or had even thought about using sign language materials. Mrs Abrar wondered: “What might that mean?” Similarly, Mrs. Eklas said, “I haven’t looked for this kind of materials, in fact I’m not sure if they’re available or not”.

4.6.4 Teaching about Deaf heritage

Deaf heritage is a fundamental component of a sign bilingual school’s identity and it helps to support and promote Deaf culture.

⁶⁰Al-Ostora uses PowerPoint software to present the reading texts; these were copied from the school reading books without any modification.

Findings from the fieldwork reveal, however, that the extracurricular activities in the school did not address the heritage of Deafness, the Deaf community or Deaf culture at all. For example, there was no Deaf-culture related programming during a school open day which was held for all hearing and Deaf pupils and staff. Instead, it focused exclusively on Saudi hearing culture, including a barbeque, listening to some Islamic songs (in spoken Arabic), dancing and so on. The Deaf pupils spent their time watching hearing performers.

The school did not develop sign language models suitable for either school or home.

4.6.5 Strategies for teaching

In the project's early observations (before the intervention) with Grades 1, 2 and 6, various strategies were seen to be used in teaching reading to the Deaf pupils. In one reading and writing lesson for Grade 1, observed on Sunday 28/04/2013, the three pupils sat in a row facing the board. Mrs. Hawazen (hearing teacher) used Arabic (spoken and written) to read the words that were written on the board, such as 'chicken' and 'family'. She then read the words in Sign-supported Arabic, followed by fingerspelling. She asked the pupils to read the phrases in Arabic and fingerspelling without encouraging them to use sign language at all, then she asked them to write the word 'eating' يأكل on the board without looking at the book. When Rawan wrote the word incorrectly, Mrs. Hawazen asked the other pupils: "Who knows the letter Y [the first letter of the word in Arabic] and can correct it for her classmate?" The teacher's voice was very loud during the lesson, her sign language was at a beginner level and she sometimes spoke while facing the board.

In an unstructured observation on Monday 29/04/2013, Mrs. Abrar (hearing teacher) had the four pupils sitting in one row facing the board. She used a number of strategies for teaching them to read Arabic. For instance, she used educational games, mental maps, Sign-supported Arabic, Arabic and fingerspelling to teach the pupils new words.

Before the intervention began, instead of teaching reading comprehension through the reading of full texts, Mrs. Abrar taught single words and short

phrases. She obtained informal permission from the school supervisor to summarize the reading texts, within the school curriculum, into simple words and sentences. The pupils were asked to read in spoken Arabic the words and phrases below each picture, such as 'giraffe', 'strawberry', 'apple', 'I play with the football'. She then asked each pupil to come to the board and describe the pictures. They tried to describe them in sign language; there were both correct and incorrect answers. Mrs. Abrar then taught the signs for each word. After that, she asked the pupils to write words and short sentences which she dictated to them. However, she sometimes spoke without making sure that the pupils were paying attention to her.

In one of the classroom observations, on Monday 29/04/2013, Mrs Rugaia's sign language was at beginner level; she depended on spoken and written Arabic, sometimes using Sign-supported Arabic, and included speech training at the end of each lesson. Very poor quality visual materials were used to support her in delivering the information. When Karimah did not understand what the teacher had said, the classmate sitting next to her, Tagreed, translated what the teacher had said. During the reading assessment before the intervention began, Mrs Rugaia told us that two pupils were not assessed, because "they were excellent pupils". This teacher was the only one who summarised and adapted some of the reading texts for her Deaf pupils by creating simple sentences while maintaining the main ideas from the text.

In all grades, the teachers moved in the reading lessons between teaching reading, language and speech. They paid more attention to teaching the pupils how to pronounce words and phrases in spoken Arabic than to helping them to read and understand them.

4.6.6 Total communication

Four teachers at the school said that they used the TC approach in teaching Arabic literacy to Deaf pupils. By this they meant that they used a combination of Arabic (spoken and written), listening, lip-reading, fingerspelling and ArabicSL; when referring to sign language, they did not clearly mean the native sign language of the Saudi Deaf Community.

There was little emphasis on the pupils' spontaneous writing. For the most part, they were required to copy sentences from the board. Although some teachers claimed to be able to sign, they often used only spoken language, with signs not added consistently.

4.7 Summary

Teachers used spoken Arabic or Sign-supported Arabic and there was no sign language environment, nor any models of sign language in use for the pupils to adopt. Few of the Deaf pupils and none of the participating teachers were in contact with Deaf adults. There was a lack of early intervention, school-home programmes and reading curriculum adaptation. Most of the participants, both teachers and Deaf assistants, stated that they were keen to adopt a strategy for teaching literacy, but expressed frustration at the school administration's unwillingness to accept change. The environment in the school created significant challenges for the SBE intervention.

Also, there were no standard reading tests which meant that the pupils were rated by the teachers. This showed that creating a more objective method to assess Deaf pupils' reading progress was essential. The following chapter; therefore, gives details of the development and structure of the Arabic reading test for Deaf pupils, together with a description of its use in the pilot study.

Chapter 5: Construction of the Arabic Reading Measure for Deaf (ARMD)

This chapter provides details of the construction of the Arabic Reading Measure for Deaf pupils. As mentioned earlier, there was no available measure of reading achievement which could be used in Saudi Arabia for this research.

5.1 Literacy ratings

During the initial fieldwork, it became apparent that pupils' records contained ratings by teachers that were purely subjective and driven using system pressures to pass the pupils. It transpired that these were mostly statements of curriculum delivery on the part of the teacher, and were unrelated to pupils' performance.

5.2 Existing monitoring of pupils

Teachers created their own worksheets to assess performance. This means that different Deaf pupils in the same Grade could be assessed by different worksheets because they were being taught by different teachers. There was no collaboration between teachers of pupils in the same Grade or of pupils of the same age in different Grades.

Deaf pupils were meant to be assessed in four units that had been identified by the Saudi Ministry of Education. They were tested on each unit; examining a groups of skills. These included 'copying short texts', consisting of two or three lines with diacritics, and 're-ordering sentence structure' (School document, 2012). Mrs Abrar (teacher) explained the process:

The teacher must evaluate the pupil until she succeeds, and if one of the pupils fails in any skill, the teacher must re-evaluate and re-evaluate until the pupil succeeds. (T1-Abr3)

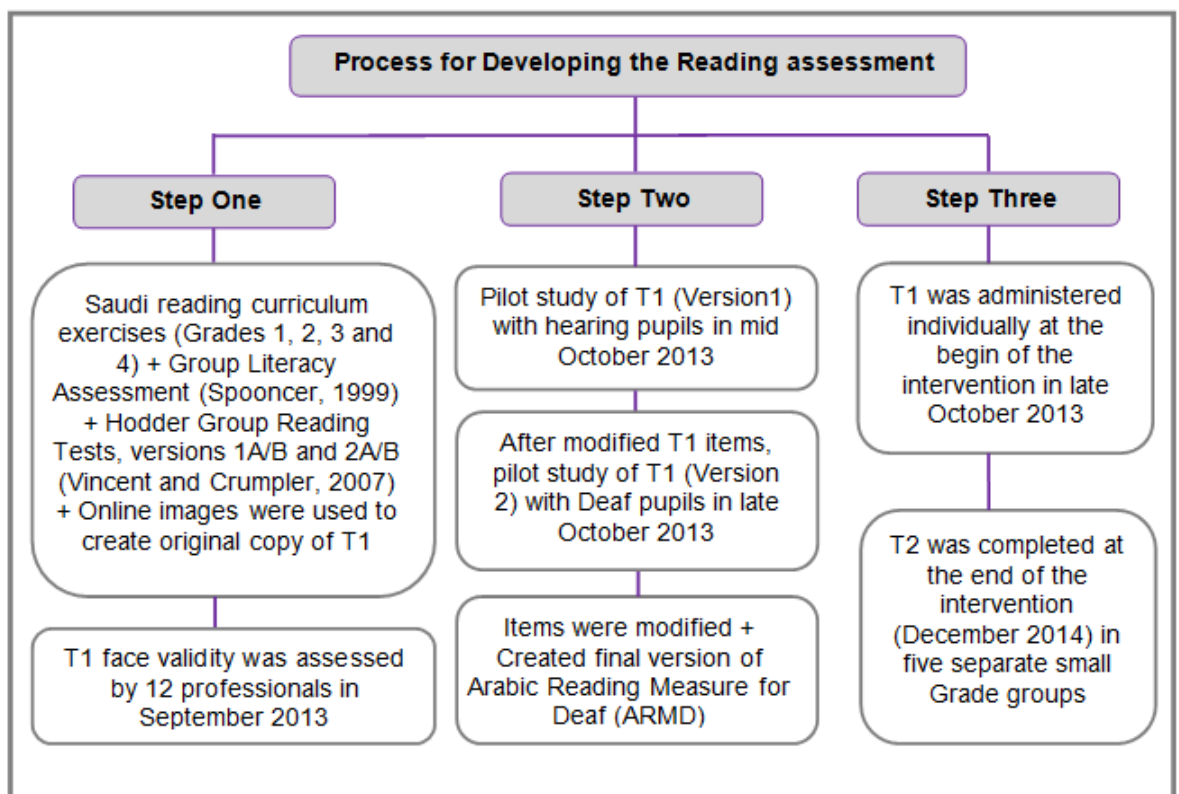
She added with a sense of frustration that "a pupil must succeed, or the teacher will be referred for investigation". As a result, teachers gave considerable direct help by signing and explaining the tasks.

5.3 The new Arabic Reading Measure for Deaf (ARMD)

5.3.1 Guidelines for design

The primary consideration in design was to source an appropriate structure into which the elements of the Saudi literacy curriculum could be placed, and which would allow a measurement of the grade-related progress of the pupils. The Group Literacy Assessment (Spooncer, 1999) and the Hodder Group Reading Tests, versions 1A/B and 2A/B (Vincent and Crumpler, 2007) were used as a guide in designing the two forms (T1 and T2) of the ARMD. No items from these tests were used or translated nor were illustrations from these UK tests introduced into the ARMD. The reading curriculum exercises for Grades 1, 2, 3 and 4 were used to generate items for both forms. Figure 5.1 displays the process that was followed in developing the reading assessment.

Figure 5.1 Process for developing the reading assessment



Each form consisted of five main sections, which drew upon different elements of the prescribed reading curriculum. There were five different types of item

(See Appendices 10 and 11 for an Arabic version of the final copy of T1 and T2). Table 5.1 and

Table 5.2 show the structure of T1 and T2 respectively.

Table 5.1: Type of item for T1

	Section					Target Pupils
	1	2	3	4	5	
Type of Item	Multiple-choice word to picture match	Multiple-choice picture to word match	Cloze	Compre- hension	Compre- hension +write in + Inference	
Source of Item						
Grade 1	1-7	24-28		48-52	69-71	All pupils up to/including Grade 5
Grade 2	8-12	29-32	42-47 ⁶¹	53-57	72-74	Grade 3 up to Grade 5
Grade 3	13-17	33-37	-	58-62	75-78	Grade 4 up to Grade 5
Grade 4	18-23	38-41		63-68	79-84	Grade 5 up to 6 pupils
Number of Items	23	18		21	16	84

Table 5.2: Type of item for T2

	Section					Target Pupils
	1	2	3	4	5	
Type of Item	Multiple-choice word to picture match	Multiple-choice picture to word match	Cloze	Compre- hension	Compre- hension +write in + Inference	
Source of Item						

⁶¹Items 42-43 must be answered by grade 2 pupils.

	Section					Target Pupils
	1	2	3	4	5	
Type of Item Source of Item	Multiple-choice word to picture match	Multiple-choice picture to word match	Cloze	Comprehension	Comprehension +write in + Inference	
Grade 1	1-8	24-29	-	48-52	69-70	All pupils up to/including Grade 5
Grade 2	9-14	30-34	42-47	53-57	71 -73	Grade 3 up to Grade 5
Grade 3	15-20	35-38	-	58-62	74-78	Grade 4 up to Grade 5
Grade 4	21-23	39-41	-	63-68	79-84	Grade 5 up to 6
Number of Items	23	18	6	21	16	84

In Section 1 of each form, 23 multiple-choice (word-to-picture match) items were created by choosing key words from the reading curriculum for Grades 1, 2, 3 and 4. Although multiple-choice answers are subject to guessing, they allow easy scoring of pupils' reading achievement. Reliability is also easier to measure. The words chosen as distractors had a similar spelling to the target word. The correct word always began or ended with the same letter as the distractors. The number of syllables in the words varied.

All the pictures of the items were selected from culturally-appropriate online libraries. Items were self-explanatory, requiring only to highlight or underline the correct word. Figure 5.2 shows an Arabic and a translated example of multiple-choice vocabularies from T1:

Figure 5.2 T1, Item 4: Highlight or underline the correct word



In Section 2, 18 multiple-choice items (picture-to-sentence matches) were created by choosing sentences from the reading materials for Grades 1, 2, 3 and 4. The pupil had to select the correct picture from a list. Pictures which were similar in terms of content were chosen. All pictures for these items in T1 were selected from online libraries except for item 37, whose pictures were taken from the Grade 3 reading book, second term (Saudi Ministry of Education, 2012; 2013b: 9, 24). The items in T1 were different from those in T2. Figure 5.3 shows an Arabic and translated example of multiple-choice pictures from T1, Section 2. In this sentence comprehension section, two distractor items were considered sufficient by the Saudi advisers at the consultation stage and this tended to avoid simple repetitive random choice selection by the students (i.e., if all the items looked to be the same in format).

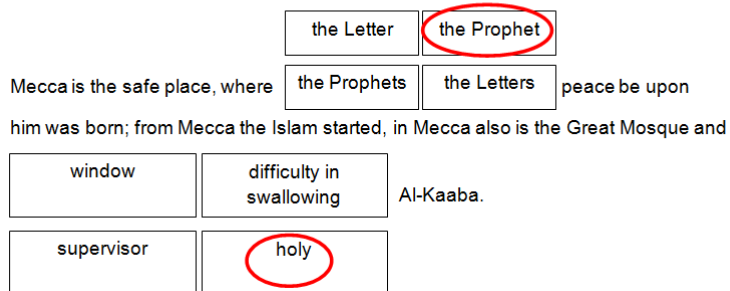
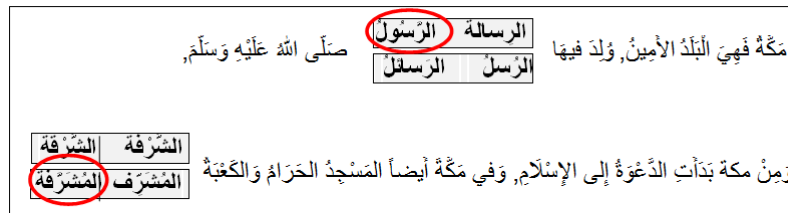
Figure 5.3 T1, Item 24: Select the correct picture from a list in a box



Section 3 of T1 and T2 required pupils to read a short cloze text. There were six sentences with a word missing and the pupil had to select the correct word from a list. Words with a similar visual structure provided the distractors.

The text in T1 was taken from materials for Grade 2, first term, while the text in T2 was taken from materials for Grade 2, second term. Figure 5.4 shows an Arabic and translated example of a cloze item from Section 3 of T1.

Figure 5.4 T1, Items 43 and 44: Select the correct word from a list in a box

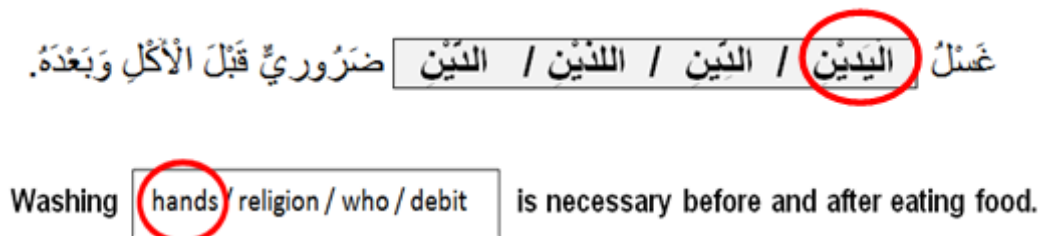


Section 4 comprised 21 comprehension items created using sentences from the reading materials for Grades 1, 2, 3 and 4. There were two types: “literal

comprehension”, to assess the pupils’ ability to understand the factual information in the text (Mohamad, 1999) and “inferential comprehension”, to assess understanding of meaning (Brassell and Rasinski, 2008: 17; William and Mary School of Education, 2014). The pupils had to select the correct word from a list in a box.

Each comprehension sentence had a word missing, with the options being from different parts of speech, such as nouns (e.g. body, vegetables), verbs (e.g. enter, run) and adjectives (e.g. beautiful, dry). This approach examines pupils’ knowledge of how words should be joined together to create sentences that are both readable and grammatically correct. In each sentence, distractors were words which were similar in visual features (i.e. letter shape) to the correct word match. The target words differed in meaning and in number of syllables. The sounds of the target and distractor words were not necessarily similar. The sentences in Section 4 differed between T1 and T2 but were chosen to have the same level of difficulty. Figure 5.5 illustrates an Arabic and a translated example of a cloze item from Section 4 of T1.

Figure 5.5: T1, Item 50: Select the correct word from a list in a box



Section 5 sought to examine comprehension, inference and writing. Section 5 of T1 had three “posters” with content related to the school curriculum. All of the answers required comprehension of both picture and text. Pupils had to write their answers by interpreting the information in the poster. The first poster was designed by the researcher; the second and the third were selected from Arabic websites with some modifications (Broonzyah, 2012; Twitmail, 2012). The items varied in complexity but covered concepts that the pupils had studied in school. Figure 5.6 shows an Arabic and translated example from Section 5 of T1.

Figure 5.6: T1, Items 72-78: Write answers by interpreting the information in the poster



Conditions for the Competition

- All competitors must be students (girls/ boys) from the schools of the ministry of education.
- The competitors can only compete with one drawing.
- The subject of the drawing must be chosen by the student (girls/ boys).
- The students (girls/ boys) must consider the principles of Islam and its values.
- The size of the drawing must be 45x70.
- The student must write his/her full name and the group.
- The deadline for submitting your participation is 7/4/1435H

The prizes of the Competition

- First place: 600 riyals
- Second place: 400 riyals
- Third place: 200 riyals



شروط المسابقة

- أن تكون جميع المشاركات من طلاب وطالبات مدارس وزارة التربية والتعليم.
- يسمح للمشاركة بملوحة واحد.
- أن يكون موضوع اللوحة من اختيار الطالب/ الطالبة.
- أن يراعي الطلاب /الت طالبات مبادئ الدين الإسلامي وأبعده.
- أن يكون مقاس اللوحة 45 × 70.
- يكتب اسم الطالب/ الطالبة الرباعي/ الصغرى.
- آخر موعد لتسليم اللوحة 7/4/1435 هـ

جائزة المسابقة:

- المركز الأول ٦٠٠ ريال.
- المركز الثاني ٤٠٠ ريال.
- المركز الثالث ٢٠٠ ريال.

السؤال الأول: اذكر اثنين من شروط المسابقة؟

-1

السؤال الثاني: آخر موعد لتسليم مشاركات المسابقة هو:

.....

السؤال الثالث: من الجهة المنظمة للمسابقة؟

السؤال الرابع: ماهي الجوائز المقدمة للفائزين؟

Q1. Write down two conditions for the competition?

1. _____

2. _____

Q2. The deadline for submitting your participation is.....

Q3. Who is the organizer to the competition?


Q4. What are the prizes for the winners?

It proved difficult to match the posters in T1 and T2 exactly. Section 5 of T2 used three posters from Arabic websites (Al-Walaa Islamic, 2003; Al-Alwan, 2011; Aswaqcity, 2012). The first two posters had little text, but the same skills of interpreting the information and writing text were required. Figure 5.7 shows an example from Section 5 of T2.

Figure 5.7: T2, Section 5, Items 69-73: Write full sentences describing the pictures

Q 6 (A): Describe the following posters in useful written sentences.

The First Poster:



An example * Manners when sitting at the dining table.

* _____

* _____


* _____

* _____

* _____

السؤال الخامس: (أ) التعبير بالكتابة عن المصفاة النظية في جمل مفيدة.

الملصق الأول



مثال * آداب الجلوس على طاولة الطعام.

* _____

* _____

* _____

* _____

* _____

— 69

— 70

— 71

— 72

— 73

* _____

* _____

* _____

* _____

* _____

5.3.2 Additional considerations in designing

The images were chosen to reflect Islamic rules and Saudi culture and traditions. All were deemed suitable for both male and female pupils. The images were selected from several online Arabic libraries, so the style varied from one image to another. The ARMD was presented in MSA formal Arabic as used in schools (Ahmed, 2007). Item difficulty increased within each section, linked to the Grade levels of the texts.

Signed instructions were also prepared and tested. Before administering to pupils, its face validity was assessed, by sending it to 12 professionals. Their responses led to the removal of unclear sections, items and wording (Al-Sayed, 1995). A pilot study of T1 with hearing and Deaf pupils was conducted to resolve ambiguities in the items. The pupils in the pilot study were randomly selected from those not taking part in the main study and from hearing pupils of a similar age.

Informed consent was obtained from participants' parents. Once they had signed the consent forms, the pilot study with hearing pupils was undertaken, followed by the pilot study with Deaf pupils; both took place in October 2013.

5.4 The reading pilot

5.4.1 Aim of the reading pilot

The reading pilot study was designed: a) to examine the appropriateness of the ARMD as one of the indicators of change resulting from the sign bilingual intervention; b) to check the comprehensibility of the instructions; c) to ensure that the Arabic words and sentences used in the test were intelligible; d) to check the order and range of items in terms of the level of difficulty of each question, i.e. to move from the easiest questions to the most difficult; e) to determine the amount of time required for the test; f) to identify any problems in its administration; and g) to practise administering it.

5.4.2 Pilot study procedures

In late October 2013,⁶² the pilot study was conducted with 14 boys and girls (8 hearing (5 female and 3 male) and 6 Deaf (3 female and 3 male)), who were selected from four primary schools in an urban area of western Saudi Arabia where the research was to be conducted.

5.4.3 Pilot study sample

Testing of 14 pupils was considered sufficient to obtain the data needed to examine the appropriateness of the ARMD for Deaf pupils. Participants in the Deaf pilot group had an average hearing loss in the better ear of 100.8 dBHL (only one Deaf boy had hearing aids) and their average age was 8.86 years. Table 5.3 lists the characteristics of the sample of pupils participating in the pilot study. The pupils in the pilot study were randomly selected from those not taking part in the main study and from hearing pupils of a similar age. Age, gender, grade level were allowed to vary among these pupils as the intention was not to create a matched group but rather to determine the extent of item intelligibility. Since this format of measurement was unfamiliar to Saudi

⁶² I.e. a month into the school year, which begins at the end of September in Saudi Arabia.

students, it was important to determine that the items could be used without them having to ask further questions. This procedure was not a standardisation or norming process.

Table 5.3: The sample of pupils

Hearing Status	Gender	Grade	Age		Total
			Year	Month	
Hearing	Female	2	6	7	5
Hearing	Female	2	7	6	
Hearing	Female	2	6	8	
Hearing	Male	2	7	3	
Deaf	Male	2	6	3	
Deaf	Female	3	10	7	2
Deaf	Female	3	8	-	
Deaf	Male	4	9	2	3
Hearing	Male	4	9	-	
Hearing	Female	4	8	3	
Hearing	Female	5	9	10	2
Hearing	Male	5	10	-	
Deaf	Female	6	10	11	2
Deaf	Male	6	10	8	
Total					14

For the pilot study with hearing pupils, the plan was to include hearing pupils (male and female), at lower grades (two or three) and the others at upper grades (4, 5 or 6). The same distribution was used for the Deaf pupils in the second pilot study. We included these pupils for two reasons. The first was to eliminate illegal bias on the grounds of gender and hearing status, and to promote equality of opportunity between boys and girls, both hearing and Deaf, in reading assessment. Secondly, as the ARMD had to be applied to Deaf pupils at different grades, we needed to check its suitability for this grade range. Fourteen pupils took part, comprising eight (57%) hearing pupils and six (43%) Deaf pupils. This distribution was anticipated, as in general there are more hearing than Deaf pupils, so it was easier to recruit hearing participants. The

participating schools could not provide pupils in all of the age groups we needed, and some hearing and Deaf pupils were unwilling to participate in the study because they perceived it to be testing them, rather than the instrument. We did not look for another school so that we could find pupils in all the age groups we needed, as there are only three Deaf schools in the city: one where we planned to conduct our main study and two where we undertook the pilot studies. It was also difficult to obtain further permission from the Saudi Ministry of Education for the research assistant to visit schools in other cities, as this would have cost time, money and administrative support.

a) Pilot study with hearing pupils

The hearing participants were three Saudi and two Yemeni girls, and two Saudi boys, selected from two mainstream schools in an urban area of western Saudi Arabia. All were born in Saudi Arabia and all wrote and spoke Arabic.

An individual interview was held with each girl in an unused classroom. The researcher introduced herself and chatted informally with the pupil before beginning T1 (Version 1, see Appendix 10 for Arabic version of the original copy of T1), asking simple questions (e.g., “What is your name?” “How are you today?”) and telling her that this was not a real exam. The task was then explained to the pupil, with a description of the first section and the way that it should be answered, using an example from the section.

This process was repeated with every section. Finally, the completion time for each question was recorded in order to be to calculate the average time needed for completion of the test. Notes were also taken of how each participant was performing, how the pupil responded to the test, whether the content was appropriate to the pupil’s age in terms of length and difficulty, and whether there were any other factors that might have affected the pupil’s performance. As the test was designed for administration in a single block of time, the pupils were given no break.

After completing the test, each pupil participated in a short discussion about correct and incorrect answers without being told whether a wrong answer had been given. Each was also asked about the clarity of the pictures and whether the words and the sentences were understandable.

With the hearing boys, a male research assistant, who had been trained by the researcher to administer the test, followed the same procedure as was done in the girls' schools.

b) Pilot study with Deaf pupils

The Deaf participants were three Saudi girls, one Yemeni boy and two Saudi boys, selected from two special schools for Deaf pupils in an urban area of western Saudi Arabia. All were born in Saudi Arabia and all had hearing losses of 71dB.

Based on feedback from the hearing pilot participants on the quality of the pictures, font size and posters, we administered a new T1 (Version 2) for use with Deaf pupils, comprising 104 items and using the same methodology as the hearing pilot, except that SaudiSL was the language of communication. Because no Deaf researchers were available in Saudi Arabia, the researcher held an individual interview with each female Deaf participant in an unused classroom. Those pupils who preferred spoken language received the instructions in speech; the simultaneous use of SaudiSL and speech was avoided. As with the hearing pupils, there were no breaks between sections.

In order to test the Deaf boys participating in the pilot, a male school supervisor was provided in advance with the instructions and was trained to administer the test, following the same procedure as was used in the girls' schools. The researcher could not be present at the boys' school for cultural reasons, so the male research assistant attended to ensure that the academic supervisor followed the instructions provided. Although it is possible that the presence of the research assistant may have had an impact on the results, the Deaf boys and girls did not differ greatly in their performance.

5.4.4 Time taken to complete

Hearing pupils took an average of 38 minutes to complete T1, while Deaf pupils took an average of 45 minutes. In cases, where the pupil had still not completed T1 within an hour, the session was stopped. This procedure was followed in the main study.

5.4.5 Results of the pilot study

Based on the professionals' feedback, 18 items were modified and ten removed, in order to make it suitable for the purpose of the research. In response to feedback from the hearing pupils, the font size was modified to Arial 18; the size of the posters and some ambiguous items were also modified. The number of items was reduced from 104 in the initial version to 84 in the final version.

5.5 The main study: Administering the ARMD

All Deaf pupils received the same instructions from the researcher during ARMD, in Arabic and sign language as appropriate. T1 was administered individually at the start of the intervention in October 2013. This allowed the researcher to observe each pupil and take notes on how they approached each item. The pupil sat in front of the researcher with a table placed between them. Seventeen pupils took part: Grade 2 pupils (n=3), two groups of Grade 3 pupils (n=3; n=3) and two groups of Grade 5 pupils (n=4; n=4). T2 was completed at the end of the intervention (December 2014) in five separate small Grade groups: Grade 3 pupils (n=3), two groups of Grade 4 pupils (n=3; n=3), and two groups of Grade 6 pupils (n=4; n=4). Each group worked in the classroom, with the pupils sitting separately from each other to avoid copying; the researcher stood facing the pupils to give the instructions.

In T1, the researcher introduced herself. To improve rapport, the pupil was asked simple questions (e.g. "What is your name?" "How are you today?"). Numbers from 1 to 21 were written on pieces of paper. Each pupil was asked to select a piece of paper and write its number in the code section of the first page of their copy of ARMD. The pupil was assured that this was not a real school exam.

On both test occasions, each pupil received a copy of the form and a pencil. The researcher also had a copy of the form in case a pupil asked questions.

Pupils completed the items without collaboration, discussion or copying from each other. The required method for answering each section was explained in sign language and spoken Arabic separately to the pupils. In T1 and T2, before

the pupil started answering each of Sections 1-4, a practice example was provided. For Section 5, the researcher gave them a practice item to read first – including a written answer – and explained the task in sign language and spoken Arabic to ensure that they understood what was required.

Usually the pupils responded to the instructions by nodding their heads, speaking, gesturing and/or signing, such as YES YES, UNDERSTAND ME, KNOW ME and so on. They then began their answer. Pupils who did not understand the instructions would say so or sign ME DON'T-KNOW, ME DON'T-UNDERSTAND and so on. The researcher repeated the question again in sign language, using the practice item until the pupil showed her understanding.

In both tests, pupils worked at their own tempo. In each of the first four sections, they were asked to circle or underline the selected answer. In Section 5, they were asked to interpret the information in the posters, fill in the gaps, mark a tick (✓) or cross (✗) and/or write full sentences as answers. The forms included item numbers to make marking easier for the researcher.

The ARMD was completed in a single session; no break was given to ensure that the pupils did not receive any assistance. Each session lasted 45 minutes for the Deaf pupils. In T1, all pupils were stopped after five wrong answers, whereas in T2 they were stopped when they ran out of time.

Throughout, the researcher made notes on the pupils' progress and about strategies that they appeared to use. Pupils often made comments such as "I can't read", "I don't understand", or "Is it this or this choice?" Notes were also made about how the pupil responded (e.g. hesitating to answer, needing a sign from the researcher to give her confidence with her answer, or appearing shocked) and whether there were any factors that might affect the pupil's performance, such as interruption from others or classroom environmental factors.

5.6 Marking

One mark was given for each correct answer. In T1, if the pupil spoke or signed the correct answer, then she was credited with one mark. If the pupil discussed

the answer in sign or debated which answer to give, then no points were awarded. However, if she identified the correct multiple-choice item but did not write it down, this was given one mark. In Sections 1 to 4 of both tests, no marks were given when a pupil selected more than one answer to a question.

Because of the multiple-choice item structure, it was possible to guess correctly. Therefore, it was important to calculate a chance score. The procedure described in Chapter 7 was applied to all items attempted in Sections 1 to 4.

5.7 Reading assessment

Baseline measurements of pupils' reading were compared with the teachers' ratings (Table 5.4). It can be seen that most of the Deaf pupils in T1 were not yet reading.

Table 5.4: Pupils' competence in literacy, as measured and from teacher rating (n=17)

Number	Name of pupil	Grade	Reading teacher grade estimate before the intervention ⁶³	Teacher Ratings of pupil competence in literacy ⁶⁴ before the intervention based on supplied 1-10 rating scale	Teacher end of year rating PD = pass with distinction	T1 ⁶⁵ scores	The chance score for T1 ⁶⁶	Teacher ratings of pupil competence in literacy during the intervention
1	Adwa	2	1	1	PD	11/22	13.08	1
2	Rawan		2	3	PD	8/22	15.08	5
3	Laila		2	5	PD	12/22	13.75	5
4	Maram	3A	3	5	PD	22/30	17.00	5
5	Miriam		3	5	PD	20/30	17.00	5
6	Miad		2	1	PD	17/30	14.92	5
7	Alaa	3B	2	5	PD	20/30	16.33	1
8	Anmar		2	5	PD	13/30	16.00	5
9	Nidaa		1	1	PD	12/30	14.92	1
10	Amoag	5A	5	5	PD	32/84	18.50	5
11	Rama		3	5	PD	23/84	18.50	5
12	Safia		3	5	PD	23/84	18.50	5

⁶³ The figures indicated teachers' rating of pupils' academic level.

⁶⁴ This rating represents grade boundaries, it was done by reading teachers for each grade; 10= highest score in the scale; 5= middle score; 3= lower quartile; 1= lowest score. Teachers' ratings were used for discussion only.

⁶⁵ This rating represents grade boundaries. In the pre-reading test (Grade 2), 22= highest score; 11= middle score; 0= lowest score. In the pre-reading test (Grade 3), 30= highest score; 15= middle score; 0= lowest score. In the post-reading test (Grade 5), 84= highest score; 42= middle score; 0= lowest score.

⁶⁶ The details of the method of calculating the chance scores are in section 6.4.

Chapter 5: Construction of the Reading Test and Pilot Work on Reading

Number	Name of pupil	Grade	Reading teacher grade estimate before the intervention ⁶³	Teacher Ratings of pupil competence in literacy ⁶⁴ before the intervention based on supplied 1-10 rating scale	Teacher end of year rating PD = pass with distinction	T1 ⁶⁵ scores	The chance score for T1 ⁶⁶	Teacher ratings of pupil competence in literacy during the intervention
13	Manal		4	1	PD	31/84	18.50	5
14	Jory	5B	4	5	PD	25/84	18.50	5
15	Gadeer		Foundation	1	PD	15/84	18.50	1
16	Loloah		4	5	PD	22/84	18.50	5
17	Nawal		4	5	PD	38/84	18.50	5

The teachers' ratings before and during the intervention were inconsistent with their formal ratings of the pupils' achievement at mid-term and end of year. Table 5.4 shows that all of the teachers gave the pupils scores between low and middle (1-6) in reading and writing based on supplied 1-10 rating scale; whereas the same teachers gave the same pupils a score of 1 (pass with distinction) in the formal assessment based on the end of year rating, 1= pass with distinction (PD); 2= pass with merit (PM); 3= pass (P); 4= fail (F). The teachers' reading-year group predictions for the pupils presented in Table 5.4 are generally low as most of the pupils year groups were two or more years lower than their actual year group.

The teachers' ratings often appeared to have no evidence base. They were often asked to assess the pupils in reading, but there was no definition of the categories. The teachers believed that all pupils must pass, whatever their actual level. For example, the description of a pupil's reading capacity was "Her [x] ability to read is very weak [...] she isn't able to concentrate and is distracted quickly and easily" (Mrs Abrar, teacher). However, the same teacher gave Miad a full mark at the end-of-year assessment. This may give a misleading picture. The teachers' formal ratings were not rating the pupil's reading performance per se, but their views on many other aspects such as pronunciation.

Accuracy of assessment is another issue. The teachers were poor judges of the reading abilities of their pupils and their views reveal error and bias. This is of extra concern, as there is no standard test that the teachers can use to compare the pupils' scores. Each teacher created her own reading assessment sheets, and these differed from teacher to teacher. It is possible that some selected easy questions so that their pupils were more likely to obtain higher scores than others in the same Grade, making them appear to be better teachers.

A further issue is that, during their reading assessments, most of the teachers focused on assessing Arabic grammar, language and pronunciation rather than reading comprehension. Mrs Asmahan (teacher) mentioned:

The pupil [x] has a limited ability to pronounce some words; she has a limited ability to write from lip reading; she can write what she's told in fingerspelling (D-Asm1)

Similarly, Mrs Eklas (teacher) said:

I wished to improve the pupils' 'handwriting', but I couldn't as they were usually absent [...] I used to give them worksheets to improve their letters. (D-Ekl1)

5.8 Summary

A new Arabic Reading Measure for Deaf pupils ARMD was created for this study. The absence of any suitable test was unexpected and the requirement to create one was challenging. There is a great need for such a properly standardised test – for use with both hearing and Deaf pupils - but to create such a fully standardised test would have been beyond the resources of this study. However, what has been achieved here is to prepare a systematic measure which can form the basis for the future development of a national test. It is also a key part of the attempt to measure progress in reading achievement in this intervention study.

Chapter 6: Measured Progress in Reading in the Intervention

This chapter presents a comparison between performance in T1 and T2, at the start and end of the intervention period respectively. If it had been possible to closely control the input in the PVR strategy (i.e., exactly what happened in each classroom on a daily basis), we would predict a significant improvement in reading performance. Conditions for intervention were not ideal, but interesting findings in relation to reading can be examined.

6.1 Consistency

Correlation between T1 and T2 is significant ($r=0.51$, $df=15$, $p<0.05$). The result is important in indicating that the two versions of ARMD appear to measure the same processes in reading Arabic.

6.2 Effects of age

There was no relationship between age in months at time of ARMD and performance, either for T1 ($r= 0.29$, $df= 15$, $p<0.05$) or for T2 ($r= 0.22$, $df= 15$, $p<0.05$).

In choosing texts and components of literacy, it is usual to examine the readability of the texts and to “norm” them by age, assessing, for example, that pupils aged 7 years would be able to read and understand a specific text. Readability measures might take into account work done on phonics as well as the maturity of the pupil and the conceptual level of meaning in the text. Because of reduced access to language, what is expected of a Deaf pupil may not match the competences of hearing pupils of the same age. It may also be necessary to identify Deaf pupils as learners of Arabic as a second language (after sign language) and for the teaching programme to take this into account. In reality, few teachers are sufficiently fluent in SaudiSL to undertake the required comparative analysis of texts.

Saudi Deaf pupils are placed in classes by estimated educational level, not by age. We know from previous studies in other countries (e.g., Juel, 1988) that as pupils grow older, they also tend to improve in reading. However, the age range of pupils in Grades 2 and 3 (between 9 and 13 years old) was wide and they

had started school at different ages. This indicates that when selecting items for inclusion in reading assessments, it is necessary to consider the age of the pupils as well as their grade level, because older pupils may differ from younger ones in experience and skills. Factors such as functional hearing loss, impact of cochlear implant (3 pupils), effective age of discovery/onset of hearing loss and conditions at home (attitude to literacy for Deaf girls) are all elusive and unmeasurable in this context.

Although there was no overall age effect, there was a consistent pattern at T1 of Grade 5 pupils being better readers than Grade 3 pupils, who in turn were better readers than Grade 2 pupils (Table 6.1). At T2, Grade 3 pupils performed better than Grade 5 pupils in Grade Levels 1 and 3. Overall, the Grade 2 items appeared to be more difficult for these pupils than the Grade 3 items (Table 6.2). This finding raises a range of questions which can be highlighted here: Is the reading curriculum actually appropriate for Deaf pupils? On what basis is it decided that an Arabic reading text is appropriate at Grade Level 1, 2 or 3 for hearing or Deaf pupils? Indeed, what is the basis of the Arabic curriculum for 7-year-old pupils?

Table 6.1: Pupils' T1 reading scores (% correct) arranged by grade difficulty level, mean (standard deviation) (n=17)

T1	Grade difficulty level			
	Grade 1	Grade 2	Grade 3	Grade 4
Grade 2 pupils (n=3)	27.45 (13.58)	10.00 (5.00)	13.33 (0.00)	10.42 (3.61)
Grade 3 pupils (n=6)	34.31 (7.82)	30.83 (7.36)	24.44 (11.67)	10.42 (8.54)
Grade 5 pupils (n=8)	46.32 (15.22)	37.50 (11.65)	40.83 (19.98)	28.91 (12.02)

Table 6.2: Pupils' T2 reading scores (% correct) by grade difficulty level, mean (standard deviation) (n=17)

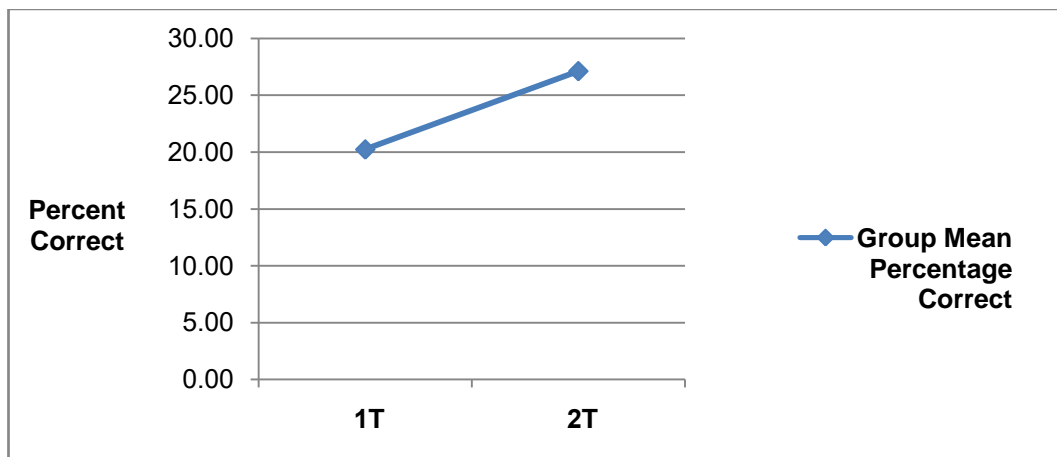
T2	Grade difficulty level			
	Grade 1	Grade 2	Grade 3	Grade 4
Grade 2 pupils (n=3)	38.6 (12.15)	24.24 (5.25)	28.89 (13.88)	22.22 (4.81)

T2	Grade difficulty level			
	Grade 1	Grade 2	Grade 3	Grade 4
Grade 3 pupils (n=6)	57.89 (7.44)	39.39 (14.28)	36.67 (19.21)	25.00 (7.45)
Grade 5 pupils (n=8)	49.34 (8.87)	47.16 (11.38)	33.33 (22.54)	36.46 (15.39)

6.3 Change in reading performance

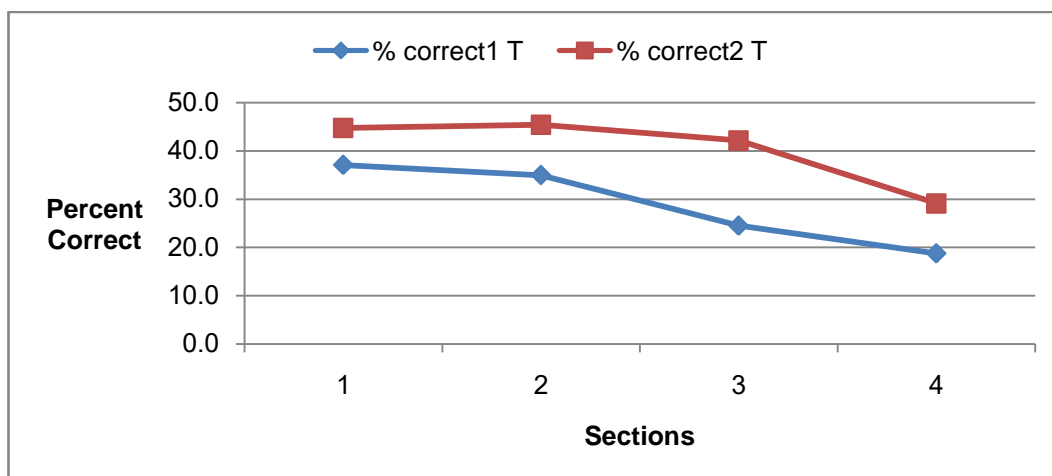
Scores at T2 were better than scores at T1 ($t=3.80$, $df=16$, $p<.05$). Mean values are shown in Figure 6.1. This result supports the prediction of improvement over time with the possibility that PVR intervention is a factor.

Figure 6.1: Mean reading performance (% correct): T1 vs T2 (n=17)



Performance at T2 was better in all sections (Figure 6.2).

Figure 6.2: T1 vs T2 by sections (1 = easiest to 4 + most difficult) (n=17)



Comparing the average differences in reading performance, all grades improved on their performance at T1.

Table 6.3: Reading performance by grade level (percent correct) and mean value (std. deviation) (n=17)

Grade	n	Mean at T1	Std. Deviation	Mean at T2	Std. Deviation	MeanT2-T1	Std. Deviation
Grade 2 pupils	3	10.33	2.08	19.67	3.21	9.33	4.51
Grade 3 pupils	6	17.33	4.08	28.17	5.64	10.83	7.57
Grade 5 pupils	8	26.13	7.18	29.13	6.75	3.00	6.46
All pupils	17	20.24	8.20	27.12	6.63	6.88	7.47

Table 6.3 shows some interesting differences among the groups of pupils. Grade 2 pupils scored 10% at T1, which suggests that they were not able to read at all; however, their score increased at T2, to just above chance level. Grade 5 pupils showed minor improvement, less than the percentage improvement of Grades 2 and 3 pupils.

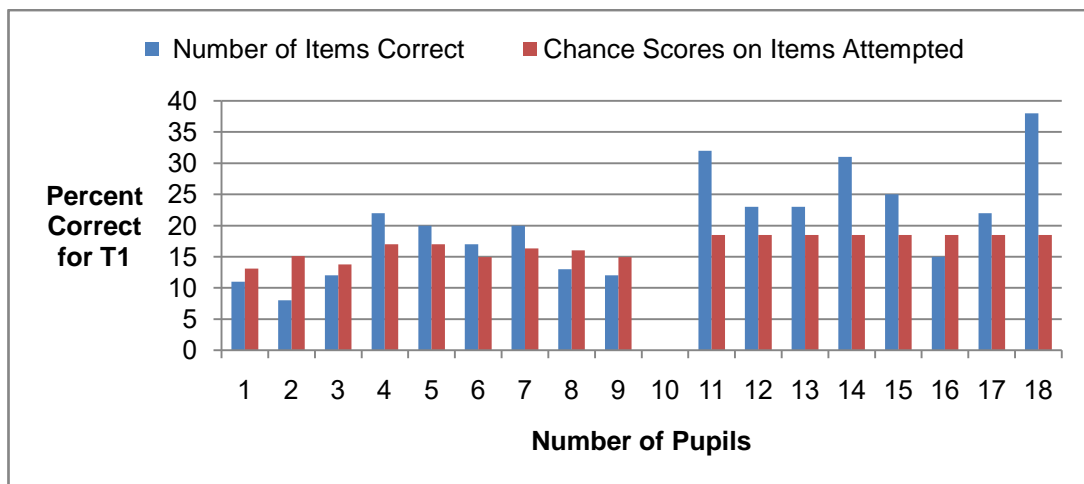
Generally, it can be seen that pupils in all three grades were still reading poorly at the end of the intervention.

6.4 Chance scores for items attempted

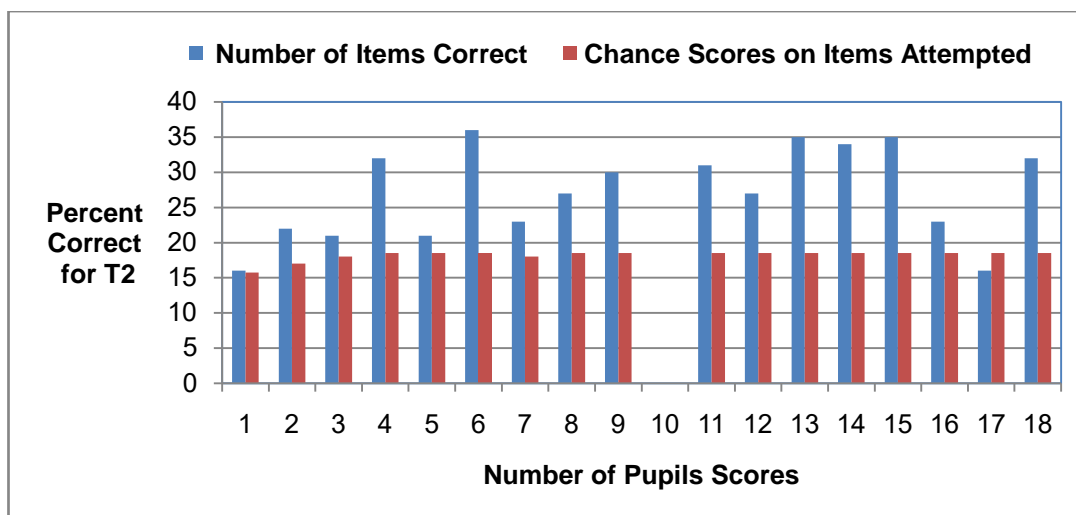
In multiple-choice tests such as the one used here, pupils can guess answers, so higher scores may be achieved by chance. Because the participating Deaf pupils were stopped at different points in ARMD (see Section 5.5), we calculated the chance scores for those items they attempted, giving each pupil a different chance score. Chance scores were calculated according to the number of choices in a question. Where there were 4 options, the chance score was 0.25; where there were 3 options, it was 0.33. The overall chance score for T1 was 18.44 and for T2 was 17.19. The scoring of Section 5 posed some problems and these are discussed in Chapter 7.

Figure 6.3 and Figure 6.4 plot the individual pupils' scores against the chance score.⁶⁷ It is noticeable that pupils performing at or below chance at T1 had moved above chance level by T2.

Figure 6.3: Actual versus chance scores for items attempted at T1



⁶⁷The pupils are arranged in number by Grade: Grade 2 (numbers 1-3), Grade 3 (numbers 4-9) and Grade 5 (numbers 10-18).

Figure 6.4: Actual versus chance scores for items attempted at T2

There was a general improvement at T2, indicating that the intervention had some effect. However, two pupils (nos. 1 and 17) scored close to chance on each occasion, indicating a continued inability to read.

6.5 Individual performances

At T1, all Grade 2 and 3 pupils were poor readers (performing well below the expected level for their age). Among the poor readers, three pupils (Adwa, Rawan and Laila) in Grade 2, two (Anmar and Nidaa) in Grade 3 and one (Gadeer) in Grade 5 obtained very low scores. The differences in individual performances are of interest.

6.5.1 The need for sign language

At T1, Rawan (Grade 2) and Nidaa (Grade 5) signed that they were not able to understand the reading passage that had been selected from the Grade 2 curriculum, even though they were able to reproduce the words in sign-supported speech and in fingerspelling. Nidaa signed: THIS DIFFICULT, NOT KNOW ME WORDS *هذا صعب; أنا لا أعرف معاني الكلمات The passage is difficult. I do not know what the words mean.* Rawan also signed: NOT-KNOW ME READ. NOT-KNOW ME UNDERSTAND. *ما أعرف أنا أقرأ, ما أعرف أنا I don't know*

how to read. I don't understand. Such statements indicate a degree of insight and possibly some metalinguistic awareness, but prompt the question as to why the teachers did not pick this up.

6.5.2 Incorrect reading strategies

Fingerspelling was used by four pupils (Laila, Grade 2, Maram and Miriam, Grade 3, and Safia, Grade 5) in attempting to read words. Despite being time consuming, this strategy was observed to be used by the Deaf pupils and some of their teachers in reading lessons and proved to be effective in Evans's study (1998). For example, at T1, Laila began to look at the sentence, producing a sign language translation of the sentence 'EAT'. She then looked at the pictures and signed BOY APPLE for "Talal eats an apple" (Figure 6.5). Next, she looked at the pictures, went back to the sentence, fingerspelled the letters of all the words in the sentence, then spoke the words aloud. It was interesting that although Laila appeared to know that the boy was eating an apple, she chose the wrong answer ("The boy eats pasta").


Figure 6.5: Item from T1, Section 2: Select the correct picture from a list




Maram (Grade 3) also tried to read all of the text in question 3 of T2, using a mix of fingerspelling, sign language and spoken Arabic, but she did not understand most of the sentences (Figure 6.6).

Figure 6.6: Item from T2, Section 3: Select the correct word from a list

السؤال الثالث: قراءة القطعة التالية واختيار الكلمة المناسبة للجملة.



فِيهِ شِفَاءٌ



مثال: رَجَعَ صَالِحٌ إِلَى الْمَنْزِلِ. خَرَيْتَنَا خَرَاتِهِ.

خَرَيْتَهُ خَرَانِ

42. سَأَلَتْهُ أُمُّهُ: لِمَ نَدَا أُمَّتَ؟ خَرَيْنَ مَرَيْنَ خَرَيْنَ قَرَيْنَ؛ قُلْ صَالِحٌ: إِنَّ زُمْبُلِي مُخْتَوًّا

يُرْقَدُ فِي الْمُسْتَشْفَى تَكُنْ طَعَامًا مَلُوثًا. الْإِيمَ: لَا تُعْرَضُ يَهَيِّئُ.

43. الْمُسْتَشْفَى الْمُسْتَشْفَى

44. فَيُجَنَّبُ نَزْوَرُهُ حَذْرًا لِئَلَّا يَخْضُرَ الْقَسَلُ الْقَسَلُ لِأَنَّ الصَّلَاةَ فِيهِ الشِّفَاءُ بِإِذْنِ اللَّهِ

45. فَاللَّهُ يَقُولُ عَنِ الْقَسَلِ: (فِيهِ تِبْيَانٌ لِّلنَّاسِ). قُلْ صَالِحٌ: شَكَرًا شَكَرًا شَكَرَهُ شَكَرَتْ

46. يَا أَبَتِي سَأَلْتُكَ إِنَّ سَاءَ اللَّهُ صَالِحٌ: الْخَطْبُ هُوَ عَلَى سَلَامَةٍ سَلَامَةٍ يَا مُحَمَّدُ.

47. مُحَمَّدٌ: اللَّهُ يُبَاهِتُكَ يَا صَبِيحِي. صَالِحٌ: حُذِرْ هَذَا الْخَسَلُ يَا مُحَمَّدُ. الطَّبِيبُ: فَالْخَسَلُ دَوَاءٌ لِأَمِّ

لَبِطٌ لَبِطٌ

Maram began to fingerspell each word, then read each word in spoken Arabic, repeating it again several times in fingerspelling and spoken Arabic; where she understood the meaning of a word, she also produced a sign. Having gone through a sentence, she returning to its beginning and tried to read it in signing mixed with fingerspelling, before choosing her response.

6.5.3 Eye gaze in relation to pointing at words while reading

It was common for pupils to point at individual words in the text as they attempted to read it. Such movements are likely to be associated with gaze pattern, although this did not form part of this study. Alla (Grade 3) and Manar and Safia (Grade 5), produced surprising patterns of finger movements. Rather than tracking along words in a single sentence, they pointed at words from more than one sentence on ARMD sheet. Figure 6.7 shows how each of these pupils began by looking at the picture, then put her finger on the first word in the sentence, followed by the second word, then returned to the top sentence, read

the third word, returned to the picture and so on⁶⁸. During this process, the pupils produced some signs, but these were related to the pictures rather than to the sentences.

Figure 6.7: Example from T1, Section 2: Select the correct picture from a list



These pupils were unable to read or to look at the sentences systematically from right to left, as required in Arabic.

6.6 Issues which may have affected performance

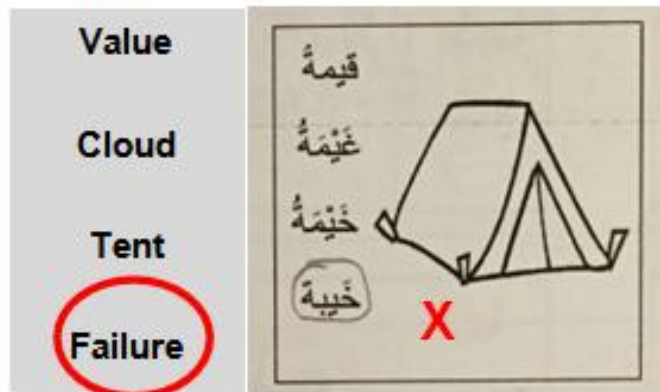
The use of ARMD in this research offers us some insight into the factors which might be associated with levels of literacy. Observations of the pupils suggest a number of variables which may have affected reading performance: visual perception of word shapes, the attendance of both pupils and Deaf assistants at PVR lessons, the frequency of such lessons and the extent and duration of pupils' hearing loss. These are now addressed in turn.

6.6.1 Visual perception of word shapes

Choosing the correct answer among words which have similar visual characteristics is a challenge for Deaf pupils. For example, although Miriam (Grade 3) knew the sign for TENT, she was unable to choose between خيمة /kaima/ (tent) and خيبة /kaiba/ (failure) in Item 7 of T2 (Figure 6.8).

⁶⁸ The red arrows represent the observations of the pupils' finger pointing directions.

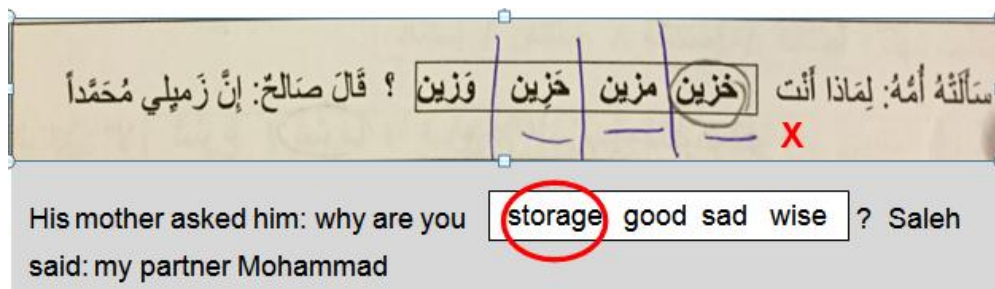
Figure 6.8: Visual confusion in a Grade 3 pupil instructed to highlight the correct word (T2)



This error was most likely caused by the visual similarity between the letters in the target word and the other choices. She was able to narrow down the options but then chose the incorrect item.

Similarly, in response to Item 63 (Section 3, T2), Maram (Grade 3) made the wrong choice between the words حزين (sad) and خزين (storage), which differ only in the diacritic marks above the first letter (Figure 6.9).⁶⁹

Figure 6.9: Pupil chooses visually similar word



The visual difference between Arabic letters can be very small, many being distinguished from each other only by diacritics, e.g. (د, ذ), (ج, ح, خ), (ب, ت, ث), (ع, غ), (ط, ظ), (ص, ض), (س, ش), (ر, ز), (ف, ق), (ع, غ), (ط, ظ), (ص, ض), (س, ش), (ر, ز), (ف, ق). The mis-identification of the location of the diacritics produces a different meaning. Differences need to be

⁶⁹Arabic writing includes both consonants and vowel letters with diacritic marks placed above or below them to distinguish among various consonants and to add vowels. These make the meaning of words clearer, especially for learners of Arabic and children.

matched to the words that the pictures in the task represent; for a hearing pupil, familiarity with the sound association of the word helps in this differentiation.

6.6.2 Attendance at PVR lessons

The attendance record of pupils (and Deaf assistants/teachers) at the school was another variable which is likely to have affected reading progress (see Section 6.6.3 for a more detailed explanation).

In Saudi Arabia, the school year runs from early September until June; pupils are required to attend school for 185 days per year, while teachers must attend for 190 days, starting a week before pupils begin school. The PVR intervention reported in this study began at the end of October, the seventh week of the school year 2013/2014, and the teachers were instructed to use the new strategy from then until the beginning of June 2014. Therefore, there should have been 155 school days remaining in the year for the teachers, the Deaf assistants and the pupils. We have analysed attendance data (and progress) for the first year of the intervention only, because although it was possible for the procedures to continue to be operative in subsequent years, there were uncontrolled factors during the second year; for example, the pupils had different teachers and some teachers had withdrawn from the research.

Within the first-year data, account must be taken of (unofficial) absences among the pupils, particularly before the authorized holidays (a week after the Hajj holiday and a week before the half-term holiday in the second term). On other occasions, the pupils came to school but the teachers were not teaching; pupils might also be asked not to come to school, which occurred two weeks before the mid-year holiday in the first term and during the last two weeks of the school year. There were thus only 25 weeks of teaching days during the intervention, amounting to 125 lesson days, i.e. 67.7% of the required 185 days' attendance. This raises a number of issues relating to the actual amount of teaching done in the school, which are explained and discussed in Section 6.6.3.

Table 6.4: Official number of lessons versus actual lessons using the applied sign bilingual method in the first year (n=17) shows the individual pupils' attendance based on the data provided by the school; however, these figures

were not subjected to statistical analysis, because the data as supplied regarding attendance (or the practice of leaving the school during the day) were inaccurate and unreliable for several reasons. Some pupils who were recorded by the official register as attending school were not in fact present for the whole day, having been taken out of school early for a hospital appointment or because of a lack of transportation, for example. Thus, one of the pupils left school at 11:30 every day instead of at 12:45, because that was a convenient time for her father, a high school teacher, to collect her. The alternative would have been for her to stay at school until very late, in turn requiring one or more teachers to stay late, which they would have been reluctant to do. Some other pupils were taken to individual speech therapy sessions during scheduled reading lessons. Such practices are likely to have affected not only the pupils' performance but also their attitudes to school.

Table 6.4: Official number of lessons versus actual lessons using the applied sign bilingual method in the first year (n=17)

Pupil	Grade	Pupils' estimated attendance (%)	T2 - T1 ⁷⁰	Planned number of PVR reading/writing lessons with Deaf assistant ⁷¹	Actual number of PVR lessons with Deaf assistant
1	2	87.74	5	50	9
2	2	88.39	14		
3	2	89.03	9		
			9.33		
4	3A	96.13	10	50	40
5	3A	96.13	1		
6	3A	87.10	19		
			10		
7	3B	92.26	3	50	22
8	3B	96.13	14		
9	3B	97.42	18		
			11.67		

⁷⁰This column represents the difference in reading performance scores (number of correct items) between T1 and T2 for each pupil and (in bold) each teacher's class.

⁷¹All teachers reported to the school administration 2 lessons of "reading and writing" per-week.

Pupil	Grade	Pupils' estimated attendance (%)	T2 - T1 ⁷⁰	Planned number of PVR reading/writing lessons with Deaf assistant ⁷¹	Actual number of PVR lessons with Deaf assistant
10	Removed				
11	5A	95.48	-1	50	17
12	5A	95.48	4		
13	5A	80.65	12		
14	5A	97.42	3		
			4.5		
15	5B	92.26	10	50	17
16	5B	92.26	8		
17	5B	98.06	-6		
18	5B	99.35	-6		
			3.17		
Total					111

In the Saudi education system, when a teacher is absent, supply teachers take the class but do not necessarily teach the pupils; during the intervention, supply teachers often only supervised the pupils, although they occasionally did some social activities with them. However, when Mrs Abrar (teacher) was away, she agreed that the Deaf assistant could take the class and the pupils then did the reading class with her. This Deaf assistant also sometimes attended another teacher's class when she had not asked her to do so. An estimate of how many days the Deaf assistant attended with the pupils is given in Table 6.4.

With the consideration that the sample was small, there was no significant correlation between the number of (45-minute) lessons that Deaf assistants taught in the first year and the difference in the pupils' performance ($r(15) = 0.25, p > 0.05$). This result is not surprising, as the number and duration of lessons that Deaf assistants worked with the pupils was unexpectedly low. The relationship is thus likely to be complex.

Table 6.4 shows that Grade 3B pupils, who had 22 of the planned 50 PVR lessons had a slightly better reading improvement (11.67%) than the Grade 3A

pupils (10%). However, the small number and large range suggest that there was little real difference between the groups.

Similarly, the average improvement in reading scores of Grade 5A (4.5%) and 5B pupils (3.17%) was lower than that of Grade 2 pupils (9.33%), although the latter spent less time with the Deaf assistant. Among the possible reasons for this difference is that the Grade 5 pupils were older and had started at a higher level. During the researcher's time at the school, she observed that when Mrs Lama attended the PVR reading lessons, she often arrived ten minutes after the teacher or left the lesson before it finished, because of problems with transportation. In one of the lessons, Mrs Lama appeared to be impatient to leave, perhaps because she had administrative tasks to do, asking the teacher, "Is the lesson over?" Even when she was present, Mrs Lama was not always fully employed in all parts of the reading lessons; for example, the teacher was observed not to allow Mrs Lama to introduce the lessons. It is likely that the Deaf staff did not have a clear specification of their role, and may have believed themselves to be only translators, rather than instructors.

6.6.3 Frequency of lessons applying PVR

During the period of the intervention, each pupil should have attended between 750 and 825 general teaching lessons.⁷²

Arabic literacy lessons included a range of activities: reading stories or texts then answering comprehension questions, writing, Arabic grammar, dictation and expression. Each teacher had to teach 10 or 11 Arabic literacy lessons per week (two or three lessons a day).

An agreement was reached with the school that 50 reading and writing lessons, which formed part of the literacy curriculum, should be designated for the PVR intervention with the Deaf assistants. The lessons were to take place in each class: two lessons per week for each grade. The PVR lessons would thus

⁷²This is the total number of lessons (including Arabic, maths, science, family, Quran, Tawheed, Jurisprudence, Hadith, art, history, geography and Patriotism) that all pupils were required to attend in the period of the intervention. Pupils in Grades 2 and 3 had to attend 30 lessons per week and those in Grade 5, 31 lessons per week. These were taught by both participating and non-participating teachers.

constitute between 22% and 25% of the Arabic literacy lessons. All of the teachers ensured that the PVR lesson timetable was compatible with when the Deaf assistants were free. Thus, in planning the PVR lessons, there were no timetable clashes caused by two teachers trying to access the same Deaf assistant at the same time. It was intended to apply the PVR strategy as much as possible when the Deaf assistants were able to attend with the teachers. The planned PVR lessons, to be delivered in sign language by both the teacher and Deaf assistant, constituted a small proportion (6.41%) of the total number of lessons taught during the year.

All of the teachers had agreed to teach 50 reading and writing lessons using the PVR strategy with the Deaf assistants. However, by early in the second term it could be seen that it would be difficult to achieve this total. Indeed, it was clear from the timetable for the lessons and the availability of the Deaf assistants that it would be unrealistic to teach 50 lessons. Firstly, the project was being managed from England; and secondly, there were not enough Deaf assistants to teach all of the planned PVR lessons using a sign bilingual approach, if preparation and management time were included as well as actual contact hours.

Another difficulty was that the Deaf assistants' preference was to teach other reading and religion lessons, which did not involve the PVR strategy. For example, Mrs Lama taught two reading curricula in collaboration with three teachers (of three different Grades, while Mrs Manal had to teach three subjects (reading, tawheed and jurisprudence) in collaboration with two teachers. Moreover, the teachers and Deaf assistants were not always able to spend as much time as expected on preparation for each PVR lesson.

Finally, although the administration had committed to the project, this commitment was not always adhered to. Both Deaf assistants were required to do many administration tasks assigned to them by the school administration on an ad hoc basis. As a result, the Deaf assistants did not have time to fulfil their planned role in the project to the extent that was envisaged. In the end, only 111 lessons were taught as part of the intervention, instead of the 250 that were planned.

At the end of the intervention, we also found that the number of PVR lessons actually taught during the intervention period had varied among the three grades and classes (ranged between 80% to 44%); there were also differences between the two Deaf assistants.

In addition to that, Mrs. Manal had a slightly greater impact on pupils' performance (a 22-point improvement) than Mrs Lama (a 17-point improvement) (Table 6.4).

6.6.4 Pupils' hearing loss

Another variable to consider is the degree hearing loss of the participating pupils. It had been predicted that the teachers' ratings would relate to the pupils' hearing loss. Mrs. Rugaia reported that "shouting during teaching has benefits because some pupils can hear". However, based on their audiograms, which may not be reliable, all participating pupils were severely to profoundly Deaf (85 dBHL in the better ear), except for one moderately Deaf pupil (69 dBHL in the better ear). Shouting would not be a useful strategy.

Table 6.5 shows the relationship of hearing loss to reading improvement results. Those with lesser hearing losses appear to have improved more during the intervention.

Table 6.5: Improvement in reading score for groups of hearing loss

	Better Ear Hearing Loss	
	≤ 90 dB, n ⁷³ =7	> 90 dB, n=10
T2 minus T1	8.14	6

6.7 Discussion

This chapter has reported on the application of a new reading measure before and after a period of intervention using the sign bilingual method, with Deaf assistants and using a PVR strategy. For all the reasons listed, this should be

⁷³ In each group, n is the number of pupils who have a hearing loss higher or lower than 90dB.

treated only as an exploratory examination of the possible quantitative outcomes of planned intervention.

One important aspect of the findings is that Deaf pupils improved in reading performance in this period as measured by scores at T2 compared to T1. By T2, nearly all of the pupils were performing above the chance level. This gives a little support to the view that the intervention had some effect on their reading, although the impact will be assessed qualitatively in following chapters.

More importantly, the study has confirmed the importance of measuring Deaf pupils' progress in Arabic literacy in a systematic fashion and that the ARMD (with further development) could form the basis of further studies with larger samples of hearing and Deaf pupils.

There was no significant correlation between pupils' ages and their reading performance. This is not an unusual finding in the literature on Deaf readers and may be indicative of problems in teaching methods, in the specification of the curriculum (in terms of readability, appropriateness of content and suitability for learning as a second language) and the lack of engagement of Deaf fluent signers in the education process. Anomalous responses and behaviours of pupils during administration of ARMD were noted, suggesting the need for further investigations to identify the factors underlying their pupils' behaviour during the task. Factors such as onset of hearing loss, functional hearing loss with, and often without, hearing aids or functioning cochlear implants, parental support, family attitudes to Deaf girls' reading were uncontrollable in this study but could be addressed in future studies. For the same reasons, the construction of a matched "control" group for a full quantitative analysis is impossible until the full range of impacting variables can be assessed reliably.

There were difficulties in implementing this new programme in a Saudi Deaf School in terms of meeting the contracted number of lessons during which the sign bilingual method was applied. The attendance record of the participants in the study was a further difficulty. A more structured, consistent and better-resourced intervention will be required for future studies.

Chapter 7: Analysis of the Reading Process and Classroom Observations

This chapter describes and analyses the classroom observations. The analyses use qualitative methodology to highlight the interaction and language characteristics of the Deaf assistants, pupils and teachers involved in co-teaching. It begins by analysing the pupils' answers to the poster-related questions in Section 5 of ARMD. There are several significant questions in regard to the way in which Deaf pupils react to text: Are they processing only the visual shapes? Do they recognise individual known words? Are they able to understand the requirements of the task?

The chapter presents the analysis of those factors identified during ARMD as affecting the pupils' reading performance. It next analyses the teachers' and the Deaf assistants' interactions while co-teaching the pupils within the PVR and other lessons. In the observation of children during reading, I will also highlight issues such as lack of metalinguistic awareness and diglossia in teachers' language use. These analyses are based on the notes I made during and immediately after each session.

7.1 Section 5 of ARMD: Extracting meaning

Section 5 of ARMD required the pupils to interpret the meaning of a poster. However, the inductive component of this task proved too complex for the pupils and the planned marking system was found to be inappropriate. The intended purpose of Section 5 is shown in Table 7.1 and the planned scoring system in the text which follows.

Table 7.1: Analysis of written responses: Section 5

Comprehension (understanding the instructions)	How sentences produced by the pupils indicate their understanding of the poster, ability to infer and make connections.
Grammatical features and sentence structure	How sentences were constructed. For example, the pupil writes simple, complex or compound sentences; she can write sentences where the first word is a noun, or sentences where the first word is a verb.
Spelling	Use of spelling rules and orthographic patterns.

The scoring system for pupil responses was designed as follows:

- One mark for every sentence with the correct meaning, one extra mark for correct grammar and one extra mark for each correctly spelled word in the sentence.
- No marks were given for correct punctuation, legibility/handwriting or vocabulary (i.e. word choices, in that the pupil could use words from either classical or vernacular Arabic).
- In Section 5 of T2 (items 79-84), pupils would receive a mark for each correct word in the sentence.

The intention was to examine the pupils' comprehension, inference and writing. Three different components of literacy were considered: a) understanding the poster, b) understanding the instructions and c) writing sentences. In the following sections we consider how successful this was.

7.1.1 Did the pupil understand the poster?

The initial plan was to present the pupils with the poster and instruct them to write the message of the poster in full sentences. Only two pupils, Nawal and Rama, Grade 5, appeared to understand the posters' messages. However, they did not write down their responses; therefore, they obtained low or no marks in this section, in both T1 and T2. For example, Nawal described each rule in poster A in T1 (Figure 7.1) by signing:

PAPER BIN ME THROW, FLOOR NO.

I throw the paper in the bin, not on the floor

ورق قمامة أنا يرمي، أرض لا.

She also explained the following rule in sign language:

HAND RAISE ME SPEAK TEACHER. SHOUTING NO ME NO.
POLITE MUST.

I raise my hand when I want to say something to the teacher. I don't shout. I must be polite.

يدي أرفع أنا عندما يتكلم معلمة صراخ لا أنا لا أدب لازم.

Then Nawal walked over to the classroom rules posted next to the door and signed:

SAME THIS, DOOR ME KNOCK, POLITE NO RUDE DOOR OPEN. [The third rule in the poster is the same as in the classroom rules: I knock on the door when I enter the class].

It is rude and not polite to open the door without knocking.

زي هذا، باب أنا يدق، أدب لا مشاغب باب يفتح.

Nawal signed that she did not understand the fourth message in the poster:

THIS WHAT (?), KNOW ME NO.

What is this? I don't know what is this.

هذا ماذا؟ أعرف أنا لا.

She signed:

PENCIL, RULER, RUBBER.

Pencil, ruler, rubber

مرسام، مسطرة، مساحه

but she did not understand the meaning of the rule, which was: Bring my school equipment to school. Instead, she was just identifying objects from her daily life in the poster.

Figure 7.1: Item from section 5 (A) of T1, pupils were instructed to interpret the information in the poster and write responses

السؤال الخامس: قراءة الملصقات الإعلانية التالية ثم الإجابة كتابياً على الأسئلة التي تليها.

الملصق الأول

قوانين الصف

رفع الأصبع
قبل الإجابة
على أي سؤال.

رسمي القانورات
الورقية في سلة
المهملات.

إحضار
الأكواب
المدرسية.

طرق الباب
قبل دخول
الصف.

مثال

السؤال الأول: ماهو موضوع الملصق؟
الموضوع هو قوانين الصف.

69 السؤال الثاني: كم عدد القوانين الموجودة في الملصق؟

السؤال الثالث: اعمل الفراغات التالية بالكلمات المناسبة من الملصق.

70 ا- يجب قبل دخول الصف.

71 ب- قبل الإجابة على اي سؤال يجب

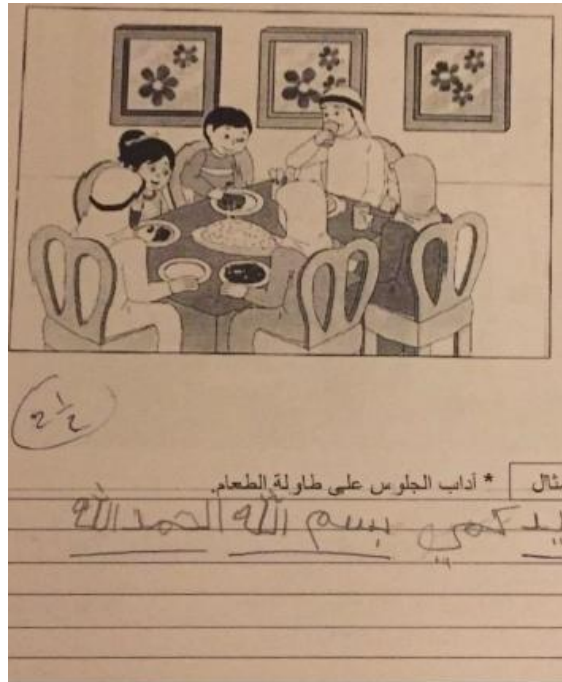
However, most pupils did not understand that the task was to understand the poster's message. They tended to treat the poster only as a picture, not as a source of information. For example, Grade 3 pupil Miriam described the poster in Section 5 (A1) of T2 in sign:

FATHER, MOTHER, BOY, GIRL, ALL SIT TABLE.

All of them, the father, mother, the [two] sons and the [two] daughters are sitting around the table.

أب، أم ولد، بنت كل يجلس طاولة. (Figure 7.2).

Figure 7.2: Miriam's response to T2, Section 5, Items 69-73: Write full useful sentences



She wrote a single line: *Hand called*. *سَمِّي*, but misspelt it so it was the word for *quantitative كَمِّي*, *in the name of God الله بسم*, *thank for God الحمد*.

Grade 2 pupil Laila also illustrated this problem when she signed:

DAD EAT DRINK.

The father is eating and drinking.

أب يأكل يشرب.

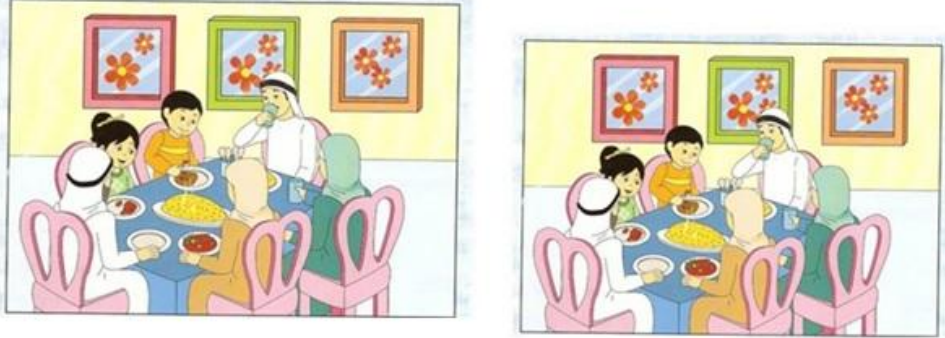
to describe the same poster (Figure 7.3). She was confused by the fact that the son was depicted as eating and drinking, while the father (identifiable by his beard) had no food, leading her to assume that the son was the father. In her written response, Laila just copied the word “example” which was written on the sheet.

Figure 7.3: T2, Section 5, Items 69-73: Write full useful sentences

Q 5 (A): Describe the following posters in useful written sentences.

السؤال الخامس: (أ) التعبير بالكتابة عن الملصقات التالية في جمل مفيدة.

The First Poster: الملصق الأول



An example * The manners of sitting on the dining table.

مثال * آداب الجلوس على طاولة الطعام

*
*
*
*
*

*
*
*
*
*

The Arabic Sign Language (ArabicSL) response here is typical of pupils describing static pictures. Although the children were unable to write Arabic, they could represent the picture. Single vocabulary items were used to indicate the agents and simple uninflected verbs were set at the end of the sentence. These sentences represented an ArabicSL representation of the picture.

7.1.2 Did the pupil understand the instructions?

Many pupils signed instead of writing, while a few wrote a list of words and/or unclear sentences. They produced simple vocabulary items, verbs and/or sentences using sign language, Sign Supported Arabic (SSA) and/or unclear spoken language; this is quite usual for young Deaf people. They also expressed the content of the poster with words from their daily life. In response to the item in Figure 7.4, for instance, Grade 3 pupil Anmar signed APPLE ME EAT LOT. *I'm eating a lot of apples.* تفاحة أنا أكل كثير, but all she wrote was the plural *apples*, تفاح, even though there is only one apple in the poster.

Figure 7.4: Item from T2, Section 5(A2): Write full sentences

الملصق الثاني

— 74 *
 — 75 *
 — 76 *
 — 77 *
 — 78 *

12

Similarly, responding to the item in Figure 7.3, Grade 5 pupil Amoaj signed EAT FAMILY DISH. *The family is eating the food.* يَأْكُلُ عَائِلَةٌ صَحْنًا. She correctly signed EAT, with reduplicated movement to indicate plurality, and FAMILY, but she mis-signed FOOD as DISH (FOOD is a compound of two signs: DISH (single movement) and EAT. Although she signed DISH, she probably meant FOOD.

Amoaj then wrote *family* عائلة but misspelt it so it appeared as the word *host* عائل. It is unlikely that she knew the meaning of “host”. Interestingly, the misspelling here looks like an example of visual confusion.

The pupils were responding logically to this task. The poster practice item had been explained to them in sign language and spoken language, and they were attempting to explain the poster. Since the researcher was present and able to see the same picture, they may have felt no great need to explain it – the researcher could see it for herself. Prompted to respond, they identified certain components. The conclusion here is that the instructions to write down an

Arabic sentence to explain the picture were simply not understood. In future use of ARMD, the practice item should be given to the pupils with practice questions and feedback.

7.1.3 Did the pupil know how to write sentences?

Not surprisingly, all pupils had difficulty in constructing Arabic sentences. It seems likely (from the observations below) that they had had limited practice in free expression and production of written Arabic. Safia, one of those who achieved a better mark at T2 than T1, produced full sentences, using relative clauses which were not part of ArabicSL but rather a form of sign supported Arabic (SSA). Safia signed Arabic and fingerspelled:

WHEN (?) EAT ME 1st SAY i-n t-h-e n-a-m-e o-f. G-o-d, t-h-e M-e-r-c-i-f-u-l.⁷⁴

Before starting eating I first say, in the name of God, the Merciful.

عندما ؟ أكل أنا أول يقول بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ.

She also signed

FINSH EAT ME SAY THANKS GOD.

When I finish eating, I say thank God.

خلاص أكل أنا أقول الحمد لله.

but in written Arabic, she only wrote:

In the name of God, the Merciful. Thank God

بسم الله الرحمن الرحيم .. الحمد لله.

Safia added, in sign

ME NOT KNOW WRITE.

I don't know how to write it.

أنا لا أعرف أكتب.

⁷⁴Fingerspelling is represented by letters with hyphens between them. Fingerspelling is in general use by Saudi Deaf people, teachers and Deaf assistants when representing verses from the Quran, spelling place names, personal names, and words which have no sign equivalents.

Some pupils had learned to write the sentences that they saw on the board every day. They may have memorized them, but not necessarily understood them. It also appears that pupils used SSA rather than ArabicSL.

The instances above show the poor level of the pupils' literacy skills; they were practically incapable of writing or reading a simple sentence. They saw the poster as a visual image without considering its message and found it difficult to construct Arabic sentences.

7.2 Observations of the pupils during ARMD

The data analysed in this section were collected by observations I made during ARMD. Eighteen pupils were observed individually at T1 and again in small groups at T2 (only five observations at T2).

No video or audio record was used during the observations. I made notes during the test and recorded them in the margins of separate copies of the ARMD for each pupil. At the end, I organised the pupils' comments and transcribed them from memory in Arabic.

I included a variety of data including: pupils' anonymous names, date and time of test, place of test, surrounding environment during the test, verbal responses such as "what is this?" "what is the answer?", non-verbal responses such as smiling or shaking their heads and slang expressions such as "ooooohh" when they saw the long text.

The data allow analysis of factors affecting their reading performance.

7.2.1 Confusion between reading and writing

We saw in the previous section that using ARMD in a way which required pupils to read and then write their answers was challenging for them. This type of measurement requires comprehension of the particular form of Arabic that the pupils are supposed to read and write, which differs from the vernacular Arabic used in the everyday speech of the adults they meet.

The difficulty is that Deaf pupils have to learn Modern Standard Arabic (MSA), because all school materials are written in MSA, and even the teachers, who

speak in vernacular Arabic during literacy lessons, have to write in MSA, as there is no standard written form of vernacular Arabic. The usual bridge for hearing pupils, of meaning derived from speech, is not available to these Deaf pupils. Indeed, although all hearing pupils have this bridge in theory, some also face difficulties in developing Arabic literacy, according to Tibi and McLeod (2014).

7.2.2 Typical strategies, e.g. spot the word

It is often observed that Deaf pupils attempt to build sentence meaning around a single word which they recognise (Carter, James and Lansdown, 2002); the same was observed in this group of Deaf pupils. For example, Grade 2 pupil Rawan was able in T1 to identify familiar words such as *green* الْأَخْضَرَ (Item 55), *new* جَدِيدٌ (Item 51) and *the mosques* الْمَسَاجِدِ (Item 60), but did not understand the sentences associated with the items. Laila, Grade 2, also signed the word SEA from the sentence *Waleed sits at the seaside* (Figure 7.5), but chose the picture of three boys jumping into a pool instead of the picture of Waleed sitting on the beach.

Figure 7.5: T2, Section 2, Item 25: Choose a picture to match the sentence



The pupil Laila, in spoken Arabic, said the word *Waleed* (*the boy's name*) وَلَيْدٌ and signed BOY. *Boy*. وَلَدٌ, then said *sits on the seaside*, signed SEA بحر, went through the three pictures, came back to the sentence, spoke the word *Waleed* وَلَيْدٌ again but this time signed BOY MORE *Boys* أَوْلَادٌ and chose the wrong picture. This shows that these pupils do not read at all, but attempt to answer the question through selecting familiar words and pictures.

7.2.3 Unfamiliarity of ARMD formats

Some items in ARMD may require metalinguistic skills. For example, the cloze questions in Section 3 of T1 and T2 require knowledge “about” language. Rawan, Grade 2, for example, was instructed to read the passage about the two Holy Cities in Item 3 and select the correct word from a list in a box (Figure 7.6). However, it appeared that she could not read effectively, as having looked at the pictures next to the title, she repeated several times in sign language and then in spoken Arabic the word “prayer”. She appeared unable to use knowledge of language structure to deal with the item.

Figure 7.6: T1, Section 3, Items 42-47: Select the correct word from each box

السؤال الثالث: قراءة القطعة التالية واختيار الكلمة المناسبة للجمل.

مدینتان مقدستان




مثال: ملکت المنظمة إلى أخلد أن أشارك في

صحيف	صحيفة
صنيفة	صنيفة

42 أخلد هذا الموضوع في

وطنية	وطنية
وطنية	وطنية

43 المنور فلتا مكة فهي البلد الأمين، ولد فيها

الرسالة الرسول	الرسالة الرسول
الرسائل	الرسائل

44 وميها بدأت الدعوة إلى الإسلام، وفي مكة أيضاً المسجد الحرام والكعبة

المنرفة	المنرفة
المنرفة	المنرفة

45 الخراج إليها كل عام لاداء

مناسب	مناسب
مناسب	مناسب

46 ولما المدينة المنورة فهي طيبة الطيبة دار الإسلام الأولى. ماجز إليها الرسول صلى الله عليه وسلم، وبني مسجده الشريف على أرضها، ثم جاهد في

تنشيط	تنشيط
تنشيط	تنشيط

47 وفيها ثوبان ويكون في حوزته التزميها الإسلام في جميع

إرضاء	إرضاء
إرضاء	إرضاء

بالخير والفوز والخلا والإحسان.

The length of the passages was another problem. The pupils were used to being assessed with short sentences; they found it difficult to follow a long text and deal with relationships between sentences. This was clear for pupils who read only the first sentence in the text then jumped to the choices without reading the rest of the passage. Indeed, Rawan, Grade 2, seemed shocked

when she saw that the text had no pictures in it at all. She appeared unable to use textual cohesion.

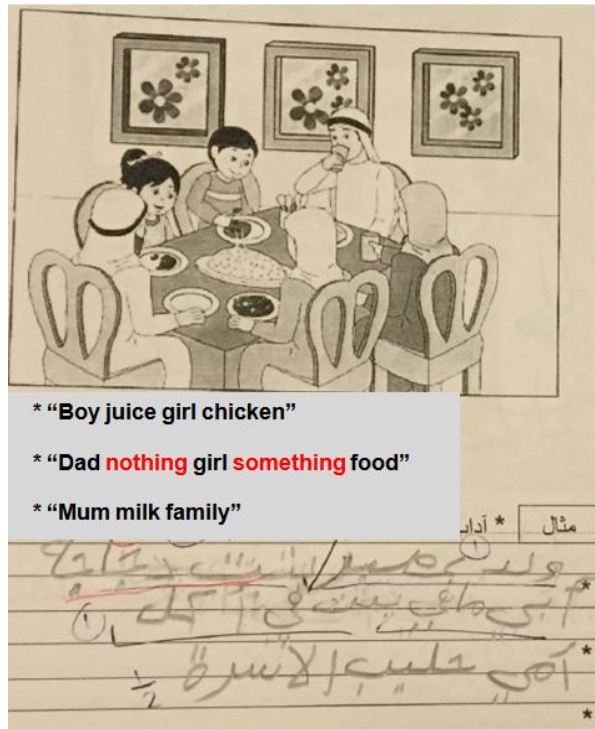
As there are no standard tests of Arabic reading, ARMD format was unfamiliar to the pupils. However, in separate observations, it was seen that the teachers seldom used or asked for interpretation and never used paragraph meaning tasks.

7.2.4 Issues with Modern Standard Arabic

Certain problems arose from the use of MSA, which is the language of the reading schoolbook, in designing ARMD. In the first section of both versions (multiple-choice items), some pupils described the items in spoken vernacular Arabic but could not choose the correct written answers, which were in MSA. For instance, Laila, Grade 2, said: *bissah* (vernacular) *cat* بِسَّة, but she did not choose the correct item, which is *gitah* (MSA) *cat* قِطَّة. Similarly, she said *foloos* (vernacular) *money* فُلُوس and signed MONEY, but she did not choose no good (MSA) *money* نِقُود.

Mixed MSA and vernacular Arabic also emerged in the pupils' written answers in T2, Section 5. Figure 7.7 shows that Miad, Grade 3, mixed a number of MSA words (e.g., family, house, chicken) with vernacular Arabic words (in red).

Figure 7.7: An attempt by Miad, Grade 3, to write full useful sentences



These types of errors illustrate pupils' unfamiliarity in reading MSA.

7.2.5 Mental fixedness: copying the questions as answers

During ARMD, some pupils would copy what was written in the questions without understanding the instructions. In T2, Section 5, in response to poster A1 (Figure 7.3), Manar, Grade 5, copied the example exactly: "Manners when sitting at the dining table". She also wrote "In the name of God", which we expect that she would have copied from the board. Manar had been asked to write her answers; however, she signed:

NOT KNOW ME WRITE.

I don't know how to write.

لأعرف أكتب.

She signed three examples of good manners when sitting at the dining table, then signed:

TEACHER ALL WRITE ON BOARD WHOLE THEN TEACHER
SAY GIRLS COME-ON COME-ON WRITE.

The teachers all write on the whole board and then say girls, come on, come on, write.

أبلة كله يكتب في سبورة كلها بعدين أبلة تقول بنات يالله يالله اكتبوا.

Excessive use of copying without comprehension would not help the pupils to learn to read.

7.2.6 Second language learners' grammar "errors"

Reports of Deaf pupils' problems in mastering the grammar of written language are longstanding and probably exist in almost every country (such as USA (Quigley, Wilbur and Montanelli, 1976; Kim, 2012; Cannon and Kirby, 2013), Italia (Chilosi, 2013), Japan (Takahashi, et al. 2017)).

However, such problems are not unique to Deaf learners, as most second language learners exhibit similar problems. Use of one's first language in order to express meaning in a second language is now considered not as an error but rather a transition phase, increasing access to the spoken and written second language. The same problems were observed in pupils in this study but it appeared that teachers were not aware of the nature of the problem and continued to teach as if the pupils were first language learners with access to Arabic.

Maram, in signing the items, did not differentiate between singular and plural forms: she chose "magazines" and "clouds" instead of "magazine" and "cloud". One Grade 2 pupil, Laila, when required to match the sentence "These are two useful books" with a picture of two books, chose a picture with more than two books. These responses may be predicted from her use of Saudi Sign Language.

The examples above present the issue of dualisation/reduplication and pluralisation. These processes in SaudiSL involve changes to the movement of the same sign, whereas dualisation and pluralisation in Arabic require processes of affixation. It would therefore be predicted that such errors would be common among Deaf pupils, linked to the use of sign language. Teachers may not have enough insight into SaudiSL to be able to manage this.

This could be due to hearing teachers trying to use Arabic to represent sign language, which does not make sense for Deaf pupils because the teachers cannot differentiate the word structure in Arabic and sign. For instance, *two books* كتابان is expressed in SaudiSL by two signs: BOOK *book* كتاب, followed by the sign for TWO *two* اثنان to indicate the dual. The dual is represented in other signs by reduplication.

7.3 Observations of PVR class lessons

This section examines classroom interactions when the Deaf assistant and the teacher were working on preview view review (PVR), then Section 7.4 considers interactions in other lessons. Individual teachers were observed to co-work in different ways with the Deaf assistants and these differences are of some importance.

During the intervention, there were two models for the Deaf assistant: teacher-instructor and interpreter. In the teacher model, the Deaf assistants provided a Deaf approach to teaching. They delivered the lessons using as much visual information as possible to ensure the pupils' understanding. They also worked with the Deaf pupils, providing an important role model and developing the pupils' sign language.

Secondly, as 'interpreters', they interpreted pupils' signs to the teacher, translated print on the board or in the schoolbook into sign language and through lip-reading translated the teachers' speech.

Class sessions are analysed in six subsections: greeting the pupils, revision of the prior lesson, introducing a new topic (preview), raising a prediction question, reading texts and concluding the lesson.

7.3.1 Greeting the pupils (attention getting)

Reading and writing lessons often began by an early greeting to the pupils from the teacher, but rarely from the Deaf assistant. Table 7.2 shows an example from one of the classroom observations which showed how the teacher began the reading lesson.

Table 7.2: Classroom observation transcript 1A

<p>Observation day and date: Monday November 18, 2013. Time of observation: 9:30-11, after breakfast. Purpose of the lesson: Reading the text in the book correctly, learning the names of the two holy cities and learning about the holy places in them. Present: Teacher = Mrs Eklas; Deaf assistant; Three pupils. Researcher: NB. Layout: The pupils sat in a semi-circle. The teacher used the board, the projector and picture cards. The Deaf assistant sat to the left of the teacher and opposite the pupils.</p>
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No	Teacher	Pupils	Deaf assistant
1		Already seated in a semi-circle and silent.	Sitting on the right of the classroom.
2	Mrs Eklas stood in front of the pupils, waved her hand and said: "Come on, be with me. We're going to start the lesson now."		
3		Two of the pupils looked at the teacher, while one of them was busy with her bag.	
4			Flashed the light and pointed to the teacher.
5		All looked at the Deaf assistant.	
6			Signed to them to pay attention to the teacher.
7	<p>She began the lesson by signing IN THE NAME OF ALLAH THE MERCIFUL.</p> <p><i>In the name of Allah the merciful.</i></p> <p>بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ</p> <p>while pointing to the written phrase on the board with her hand.</p>		
8		Two of the pupils looked at the teacher, one pupil looked at NB, but they did not say or sign anything.	

The teacher did not use an effective strategy for gaining attention and the pupils turned to the Deaf assistant for guidance. It is not clear that the teacher's

(culturally appropriate) invocation of Allah had a meaningful impact on the pupils.

Another teacher, Mrs. Rugaia, used the same opening and ignored the Deaf assistant, who was nevertheless observed to sign the same invocation for the pupils, independently of the teacher.

7.3.2 Revision of the previous lesson

Sometimes the teacher and the assistant spent 15 minutes revising the previous lesson by asking questions such as “What did we do last week/last session?” The pupils generally did not respond and the teacher needed to ask the Deaf assistant to try to explain. Table 7.3 gives an instance of this from Observation Transcript 1B.

Table 7.3: Classroom observation transcript 1B

No	Teacher	Pupils	Deaf assistant
1	Mrs Eklas asked the pupils simultaneously in sign and speech: WHAT WAS the unit ABOUT YESTERDAY? <i>What was the unit about yesterday?</i> ماذا كانت وحدة الدرس بالأمس؟		
2		All the pupils looked at the teacher in a surprised way.	The Deaf assistant looked at the teacher and pupils, waiting for the teacher to give her permission to explain to the pupils what the teacher was signing.
3	What? What?		
4-11		Much confusion among pupils.	
12	She asked the Deaf assistant to explain this to the pupils.		
13			Moved in front of the pupils while pointing to the greeting card in the teacher's hand and signed:

No	Teacher	Pupils	Deaf assistant
			<p>YESTERDAY, YESTERDAY WE TALK ALL.HOW? CARD USE KNOW GIRL [ZAKIA] [high school on the ground floor] ENGAGEMENT, BLESSED SAY, HOW? [ZAKIA] BLESSED CARD WRITE AND SEND.</p> <p><i>Yesterday, we all talked about how we use the card; for example, ZAKIA, got engaged and we said blessing to her by writing a card and gave it to her.</i></p> <p>بالأمس، تحدثنا عن كيف نحن نستخدم البطاقة، على سبيل المثال، زكية انخطبت وباركنا لها عن طريق كتابة بطاقة لها وإعطائها البطاقة.</p>

It is clear that a reference to previous lessons out of context had little impact on the pupils' learning. The fact that the teacher did not even use SSA but rather mixed up sentences in Arabic with a few signs will have presented an additional obstacle to the pupils. In the end, the Deaf assistant had to repair the interaction.

Using contextual learning and linking pupils' experiences to the text they read are important parts of reading comprehension. The teachers however did not link content in the classroom to the pupils' background knowledge, their cultural, academic or personal experience. It is unclear whether the type of instruction that the teacher used such as providing a clue that the information relates to their "last reading lesson" is understood by the pupils, as it provides no information about what they were supposed to learn. As well as lacking contextualisation, the teacher's use of signs confuses the pupils further since she uses direction of movement (in LESSON, for example) incorrectly.

This example also shows that a decontextualised approach to the lesson was one of the problems affecting the time available for teaching the new topic. In discussion of the card, the pupils were meant to understand concepts which

were not represented by pictures; therefore, they found it difficult to understand and respond.

Interestingly, however, the Deaf assistant was able to link the text to the pupils' background knowledge, personal experiences, school events and activities in which they had participated, assisting them to understand what they were reading. Another Deaf assistant, Mrs. Manal, also connected the reading text to the world; for instance, after Grade 3B pupils struggled to understand what self-sacrifice meant, she reminded them what had happened a few days earlier:

REMEMBER [NIDAA] FORGET BREAKFAST BRING SCHOOL,
THEN [ALAA] AND [MARAM] GAVE [NIDAA] PART SANDWICH
THEIR? THIS SELF-SACRIFICE, SELF-SACRIFICE MEAN
PEOPLE GIVE ANYTHING LOVE ME.

Do you remember when [Nidaa] forgot to bring her breakfast to school and then [Alaa] and [Maram] gave [Nidaa] part of their sandwich? This is self-sacrifice, which means people give anything to other people even if they love it and need it.


يتذكر [نداء] ينسى فطور يجيب مدرسة بعدين [الاء] و [مرام] يعطي
[نداء] شويًا ساندوتش، هذا إيثار، إيثار يعنى ناس يعطي أي شيء
شيء يحب أنا.

This demonstrates how contextual learning can take place in the classroom by linking content to Deaf pupils' own experiences.

7.3.3 Introduction of the topic (preview stage)

Three of the teachers (Eklas, Abrar and Asmahan) allowed the Deaf assistants to introduce the literacy lessons, to help the pupils gain important background information. An example of how effective this can be is taken from Observation Transcript 1C (Table 7.4).

Table 7.4: Classroom observation transcript 1C

No	Teacher	Pupils	Deaf assistant
1	<p>Mrs. Eklas flashed the light and showed a picture of the Grand Mosque on the board. She indicated the Deaf assistant to start the lesson.</p> 		
2		<p>The pupils looked at the picture and signed (some using voice):</p> <p>MECCA. Mecca. مكة،</p> <p>PRAYER. <i>Prayer.</i> صلاة،</p> <p>UMRAH. <i>Umrah.</i> عمرة</p> <p>and</p> <p>ALLAH AKBAR.</p> <p><i>Allah is the greatest.</i> الله أكبر</p>	<p>The Deaf assistant pointed with her hand to be patient.</p>
3	<p>Mrs Eklas sat on the right of the classroom, watching.</p>		
4			<p>She pointed at the picture and signed:</p> <p>PICTURE WHAT? SEE YOU IN PICTURE?</p> <p><i>What can you see in the picture?</i></p> <p>صورة ماذا؟ تشوف أنت في</p>

No	Teacher	Pupils	Deaf assistant
			صورة.
5		The pupils raised their hands to participate.	
6			She chose one pupil at a time to answer.
7		<p>One of the pupils said in clear speech: <i>Mecca, Umrah</i></p> <p>مكة، عمرة .</p> <p>Another pupil raised her hand and in SSA said PRAYER, Mecca.</p> <p><i>Prayer, Mecca.</i></p> <p>مكة، صلاة.</p> <p>The third pupil signed: MECCA. <i>Mecca</i></p> <p>مكة</p>	
8			<p>She signed MECCA PRAYER UMRAH ANSWER ALL RIGHT THIS [Pointing to the picture] HAVE NAME HIS IT NAME THE GRAND MOSQUE.</p> <p><i>All these answers Mecca Prayer Umrah are right. [pointing to the picture] This has a name; its name is the Grand Mosque.</i></p>

No	Teacher	Pupils	Deaf assistant
			مكة، صلاة، عمره إجابته كله صح هذا [مع الإشارة إلى الصورة] عنده اسم، حقه هو اسم: المسجد الحرام.
9		They are all surprised.	

The teacher gave the picture as a clue to the pupils, who were expected to name the Grand Mosque. In the end, the pupils gave a correct answer, although it was not what the lesson was supposed to be about. Their responses were related to the city of Mecca, but not the Great Mosque, which is the holy place where people pray, do Umrah and other Islamic activities.

The lack of understanding of the lesson became clear later, when the Deaf assistant asked them to describe the pictures of some holy sites of pilgrimage rituals in Mecca. The pupils signed only what they saw in the pictures: "people". This interchange was not successful as the preview part of PVR, leaving the children with no clear understanding of its aims.

At this stage of the lesson, the Deaf assistant's role was to support the instructor in helping the pupils to understand the concept of the mosque. It is possible that she did not know what the teacher was trying to achieve with the picture. The Deaf assistant asked the same questions several times throughout the lesson:

YOU GO HAVE TO MECCA [Grand Mosque] OR MEDINA
MOSQUE FOR PROPHET?

*Have you been to the Grand Mosque in Mecca or to Prophet
Mohammed's Mosque in MEDINA?*

هل أنت روح إلى مكة مسجد حرام أو مدينة مسجد نبوي
MECCA YOU WHY GO?

Why did you go to Mecca?

ليه؟ روح مكة

IN MECCA YOU WHAT? SEE WHAT?

What did you see in Mecca?

في مكة أنت إيش؟ يشوف إيش؟

This example suggests that the teacher and Deaf assistant reduced the scope of the topic and taught only what they could control.

f) Raising a prediction question (Preview Stage)

The lesson introduction, all of the teachers asked a prediction question, related to the subject of the lesson, but varied in the way they presented it. Three of them wrote the title on the board, read it aloud and explained it to the pupils, followed by real-life examples from the Deaf assistant. The Arabic written title would be an important way to provide context and meaning to a Deaf pupil. However, in the following example of Transcript 2A, it becomes a translation exercise in the minds of the adults and not an opportunity to create learning (Table 7.5).

Table 7.5: Classroom observation transcript 2A

Observation day and date: Tuesday November 26, 2013			
Time of observation: Second and third lessons, 8:15-9:00 (before breakfast) and 9:30-10:15 (after breakfast).			
Purpose of the lesson: Reading the text correctly, understanding the concept of cooperation, identifying the type of cooperation and its benefits.			
Present: Teacher = Mrs. Abrar; Deaf assistant; Three pupils. Absent: none.			
Lesson arrangement: The pupils were seated in a straight line. The teacher used the whiteboard and picture cards.			

No	Teacher	Pupils	Deaf assistant
1	Mrs Abrar wrote the title "Cooperation" on the board and attempted to explain it in speech and SSA.		The Deaf assistant was standing next to the teacher.
2		One of the pupils seemed not to understand the teacher and looked inquiringly at her classmates	

No	Teacher	Pupils	Deaf assistant
		because she might need help.	
3			<p>She explained in sign language without being asked by the teacher: MEAN PROBLEM HAVE COOPERATE YOU ME SOLVE HELP.</p> <p><i>The word cooperation means that if you have a problem, I help you to solve it.</i></p> <p>معنى مشكلة فيه يتعاون أنت أنا حل أساعد</p>
4		One of the pupils showed that she understood by putting her hand on her head.	
5			<p>She signed: LOOK LOOK COOPERATION EXAMPLE ME GIVE.</p> <p><i>Look look I will give an example of cooperation.</i></p> <p>. انظروا انظروا...تعاون مثال أعطي</p> <p>The Deaf assistant acted carrying many items; she needed help and asked them to come and help her carry the bags.</p>
6		The pupils stood up one by one with the teacher to give the Deaf assistant a hand.	
7			<p>She signed: YES COOPERATION THIS.</p> <p><i>Yes, this is cooperation.</i></p> <p>أها تعاون هذا</p>

However, several teachers asked the pupils to predict the title. We understand that asking pupils to predict what they are going to learn is an active valued situation in education. Table 7.6 shows an example of this from a classroom observation transcript 1D

Table 7.6: Classroom observation transcript 1D

No	Teacher	Pupils	Deaf assistant
1	<p>After Mrs Eklas introduced the lesson, she asked in spoken Arabic followed by signing:</p> <p>WHAT DO YOU THINK THE SUBJECT OF THE LESSON IS TODAY?</p> <p><i>What do you think the subject of the lesson is today?</i></p> <p>ماذا تتوقعوا موضوع الدرس سيكون اليوم؟</p>		The Deaf assistant was sitting on the right and watching only.
2		Two of the pupils nodded their heads to show that they did not understand what the teacher said. The third pupil only looked at the teacher and her classmates did not say anything.	

The type of hearing strategy used by the teachers with Deaf pupils here was actually for hearing pupils and it was different from the way Deaf people determine meaning, i.e. they negotiate the topic visually, then interact with it. Table 7.7 shows how the above lesson continued: Mrs. Eklas wrote the title on the board when she saw that the pupils struggled in predicting it, but by making the approach completely Arabic-centric, she effectively excluded Deaf pupils' processing.

Table 7.7: Classroom observation transcript 1E

No	Teacher	Pupils	Deaf assistant
1	<p>Mrs. Eklas wrote the Arabic text on the board</p> <p><i>Two Holy Cities.</i></p> <p>مدينتان مقدستان</p> <p>and signed to the Deaf assistant to come to the board, read and explain the title to the pupils.</p>		The Deaf assistant was sitting on the right of the classroom and watching only.
2		The pupils	

No	Teacher	Pupils	Deaf assistant
		looked at the board.	
3	The teacher stood on the right of the classroom watching.		She stood in front of the board and waved her hand to obtain the pupils' attention.
4		The pupils looked at the Deaf assistant.	
5			<p>She then read the subject literally followed by signing: c/ i /t/ y, CITY 2nd h/o / l / y HOLY.</p> <p><i>Two Holy Cities.</i></p> <p>م/ا/ي/ان/ها/ مدينة 2 م/ا/د/س/ات/ان/ مقدسة</p> <p>She looked at the board, picked out a word, turned to the pupils and read it literally, then signed it. She turned several times to pick out the letters in the word. She turned again to the board to pick out the second word and did the same with it. With the long word, Mrs. Lama turned to the board many times.</p>
6		They copied her in combination.	
7-9		Much confusion among pupils.	
9	<p>She explained the notion of city by asking in SSA: WHERE IS THIS MOSQUE? THIS IS THE GRAND MOSQUE, WHERE IS IT? WHICH CITY? IS IT IN RIYADH? IS IT IN JEDDAH? OR IS IT IN MECCA? WHERE IS IT LOCATED?</p> <p><i>Where is this Mosque? This is the grand mosque, where</i></p>	The pupils copied the teacher and looked at her, but did not say anything; they only watched.	

No	Teacher	Pupils	Deaf assistant
	<p><i>is it? In which city is it? Is it in Riyadh? Is it in Jeddah? Or is it in Mecca? Where is it located?</i></p> <p>أين هذا المسجد؟ هذا المسجد الحرام أين هو؟ في أي مدينة؟ هل هو في الرياض؟ هل هو في جدة؟ أو هل هو في مكة؟ أين يقع؟</p> <p>Then, she signed: MECCA IS CITY, RIYADH IS CITY, JEDDAH IS CITY, OK.</p> <p><i>Mecca is a city, Riyadh is a city, Jeddah is a city, ok.</i></p> <p>مكة هي مدينة، الرياض هي مدينة، جدة هي مدينة، الدمام هي مدينة، طيب.</p>		

Although the teacher took the lead, she tried to avoid explaining the notion of a city from the beginning. She finger-spelled the word “holy”, although there is a sign for it, but she perhaps did not know it. Then, although the pupils did not understand, she carried on teaching the lesson. This may have caused the pupils to be puzzled and not relate it to their experience. Unfortunately, the Deaf assistant was drawn into this by the hearing teacher. The continuous series of unanswered questions were a sign of the teacher’s frustration. It may also be the case that the problems arose because the Deaf assistant used SaudiSL, whereas the young pupils were being taught at this school with ArabicSL; this confused the pupils. From this observation, it was hard to see how this teaching method related to literacy; it was not consistent with the sign bilingual approach. Table 7.8 continues the observation of the same lesson. The Deaf assistant seemed to feel that the pupils had not understood the teacher, so she indicated to Mrs Eklas that she wanted to take the lead for a second time, then explained the notion of a city to the pupils.

Table 7.8: Classroom observation transcript 1F

No	Teacher	Pupils	Deaf assistant
1	From 1-7, Mrs Eklas was standing and watching.		<p>The Deaf assistant indicated the sentence on the board "I was born in Damam city" and signed:</p> <p>[DAMAM] ME BORN, OK? ... DAMAM CITY... DAMAM CITY...MEANS PLACE].</p> <p><i>I was born in Damam...ok Damam is a city... Damam is a city, which means a place.</i></p> <p>دمام أنا ولدت طيب؟ دمام مدينة، دمام مدينة معني مكان.</p>
2		The pupils focused on the Deaf assistant.	
3			<p>She asked each pupil: YOU WHERE? BORN? US TELL WHERE? WHERE? ... CITY WHICH? ... IN RIYADH BORN? OR JEDDAH? OR MEDINA? WHERE? WHERE?</p> <p><i>Tell us, where were you born? Where? Where? In which city were you born? Were you born in Riyadh? Were you born in Jeddah? Or were you born in Medina? Where? Where?</i></p> <p>أنت أين ولدت؟ قول لنا أين أين؟ مدينة فين؟ هل؟ الرياض ولدت هل؟ في جدة ولدت في أومدينة ولدت في؟ أين؟ أين؟</p>
4-12			Interaction about where pupils were born to explain concept of city.
13			<p>She pointing at the picture (the city of Mecca) and signed:</p> <p>MECCA THIS CITY...GRAND MOSQUE MECCA IN.</p> <p><i>This is the city of Mecca where the Grand Mosque is.</i></p> <p>مكة هذه مدينة... مسجد حرام مكة في.</p>
14		The pupils engaged in the conversation with the Deaf assistant using sign language and	

No	Teacher	Pupils	Deaf assistant
		<p>voice. For example: one of the pupils simultaneously signed:</p> <p>MECCA ME Umrah PAPA MAMA</p> <p><i>I went to Mecca and did Umrah with my mum and dad.</i></p> <p>مكة أنا عمره باباماما</p>	
15			<p>She responded to the pupil and signed with speech:</p> <p><u>Excellent</u>, YOU MECCA GO YOU GRAND MOSQUE GO UMRAH DO YOU.</p> <p><i>Excellent, you went to the Grand Mosque in Mecca and did Umrah.</i></p> <p>ممتاز، أنت مكة روح أنت مسجد حرام روح عمره سوي أنت.</p> <p>Then she asked another pupil in signing:</p> <p>[The name of the pupil] COME ON SAY, PAST GO YOU MECCA? OR NO? PAST GO YOU GRAND MOSQUE? OR NO? SAY US.</p> <p><i>Well [The name of the pupil] come on tell us about you. Have you been to Mecca? Have you been to the Grand Mosque? Come on tell us.</i></p> <p>ها [اسم الطالبة] قولي بالله... أول رححت أنت مكة ولا لا؟ أول رححت أنت المسجد الحرام ولا لا؟ لنا قولي.</p>
16		<p>This pupil signed:</p> <p>MECCA GO PRAY ME GRANDFATHER MAMA WITH ALL MECCA.</p>	

No	Teacher	Pupils	Deaf assistant
		<p><i>I, my grandfather and mum went to MECCA to do Umrah.</i></p> <p>مكة روح صلاة أنا جدي ماما مع كله مكة.</p>	
17			<p>She did a similar thing with the next picture about Al Medina Al Monawara and the Prophet's Mosque.</p>
18			<p>Later, she pointed to the title and signed: CITIES 2nd HOLY MECCA AND MEDINA ARE, WHY? HAVE MECCA AND MEDINA GRAND MOSQUE AND MOSQUE MESSENGER MOHAMMED GOD'S PEACE BE UPON HIM ... PLACE GREAT MEANS PURE.</p> <p><i>The two holy cities are Mecca and Al Medina because they have the Grand Mosque and the Prophet's Mosque ... holy means great and pure.</i></p> <p>مدينة 2 مقدسة 2 تكون مكة ومدينة, ليه؟ عشان في مكة مدينة مسجد حرام ومسجد رسول محمد صلى الله عليه وسلم مقدس مكان عظيم يعني معنى طاهر.</p> <p>Finally, she read the subject as a whole sentence.</p>

This example shows the importance of the Deaf assistant's use of sign language to ground the topic in experience and to gradually move the pupils to explaining events.

g) Teaching reading texts (view stage)

After the prediction component, reading texts were used. The Deaf assistant acted the role of the teacher in reading the text, using the 'whole-part-whole' technique to explain the main idea around the sentence; she broke down the sentence into words to explain them, then zoomed out again to the whole sentence to evaluate the pupils' comprehension. The next extended example is from classroom Observation Transcript 2B (Table 7.9).

Table 7.9: Classroom observation transcript 2B

No	Teacher	Pupils	Deaf assistant
1	<p>Mrs. Abrar divided the text into short sentences (4-8 words) and wrote the first one on the board:</p> <p><i>Cooperation is between family members: Father, mother, son and daughter.</i></p> <p>التعاون يكون بين أفراد الأسرة: الأب، الأم، الأبنة و الأبن</p>		The Deaf assistant stood next to the teacher.
2		They looked at the sentence.	
3			<p>She moved to the front of the pupils and signed:</p> <p>FAMILY COOPERATION.</p> <p><i>There is a cooperation in the family.</i></p> <p>التعاون في الأسرة</p>
4		They looked at the Deaf assistant.	
5		They all automatically signed what the Deaf assistant signed.	
6	She nodded her head to show that it was the correct answer.	<p>One of the pupils signed while saying these words:</p> <p>DAD MUM SISTER ALL.</p> <p><i>Family is father, mother and sister.</i></p> <p>أسرة بابا ماما أختي كله</p>	
7	She nodded her head to show that it was the correct answer.	<p>Miad signed:</p> <p>COOPERATION.</p> <p>Cooperation.</p> <p>تعاون</p>	
8	She stood to the left of the Deaf assistant and watched.		<p>(Whole) she signed:</p> <p>EACH PERSON FAMILY HELP OTHER...MUM DAD HELP...DAD MUM</p>

No	Teacher	Pupils	Deaf assistant
			<p>HELP...ALSO SON DAD HELP...DAUGHTER MUM HELP...HELP ALL TOGETHER.</p> <p><i>Each person in the family helps each other...dad helps mum...mum helps dad...also the son helps his dad...the daughter helps her mum.</i></p> <p>كل شخص أسرة يساعد بعض... أم أب يساعد...أب أم يساعد... كمان إين أب يساعد... بنت يساعد أم... يساعد كل بعض</p>
9		<p>Another pupil signed:</p> <p>FAMILY ALL HELP.</p> <p><i>The entire family helps each other.</i></p> <p>أسرة كل يساعدوا.</p>	
10		<p>The third pupil said: ME MUM HELP.</p> <p><i>I help my mum.</i></p> <p>أنا ماما يساعد</p>	
11	She read the sentence in Arabic, followed by SSA.		She stood to the right of the teacher and watched.
12		The three pupils copied the teacher and read the sentence with an unclear voice.	
13			<p>(Part) She began explaining the words one by one for example, she asked:</p> <p>WHAT MEAN COOPERATION?</p> <p><i>What does cooperation mean?</i></p> <p>ماهو معنى تعاون؟ She asked each pupil</p>

No	Teacher	Pupils	Deaf assistant
			about each word in the sentence and asked them to come to the front of their peers.
14		<p>This pupil signed:</p> <p>HELPING. <i>Helping.</i></p> <p>مساعدة</p> <p>The other two pupils then repeated in sign:</p> <p>HELPING. <i>Helping.</i></p> <p>مساعدة</p>	
15	<p>She placed the images on the board regarding cooperation in the family (one had children helping their mum to prepare the dining table, one had a daughter helping her mum to put clothes on the line and one had father reading with his son).</p> <p>She pointed at the pictures and said in SSA:</p> <p>NOW WE will explain HOW? COOPERATION in FAMILY?</p> <p><i>Now we will explain how? Cooperation in family?</i></p> <p>الآن نحن سوف نوضح كيف؟ التعاون في الأسرة؟</p>		
16		They all looked at the pictures.	

In this example, we see the major role for the Deaf assistant in creating classroom interaction. However, it is also unclear if the Deaf assistant has been given the underlying aim and meaning of the exercise. The teacher and the Deaf assistant may have confused the concept of cooperation, i.e. two people assisting each other to overcome each others' weaknesses, with the concept of

help or personal assistance. It may also be the case that using a literacy lesson to provide personal/social education is less effective than if such concepts were taught in discussion.

Although the Deaf assistants were able to explain information to the pupils, they sometimes used incorrect terms or misunderstood the sentences, e.g. when the Deaf assistant interpreted the word /al-moror/ *policeman* المرور as /al-marrah/ *woman* المرأة due to the similarities in shapes of the letters in the two words (0). It is possible that the teacher had not discussed the sentence with the Deaf assistant before the lesson. The teacher did not correct the Deaf assistant. The sentence signed by the Deaf assistant was contextually appropriate, as cooperation is possible between a woman and man in the street but was incorrect in this context.

Although the approach that the Deaf assistant used was not directly a literacy exercise, it was in keeping with a Deaf approach to developing the concept. Instead of concentrating on component skills, such as reading words aloud, or teaching sound-letter or letter names, she focused on improving comprehension and explanation through group discussion, writing and drawing activities.

The Deaf assistant moved to the final part by asking the pupils, who were by this point supposed to be familiar with the sentence, to look at features of specific words and compare them in sign language and Arabic. Lastly, the pupils went back to reading whole sentences to consolidate their learning. The whole-part-whole teaching technique appears useful for work on literacy.

Within this co-teaching technique, the Deaf assistant used sign language, which was accessible to all of the pupils, in teaching the reading text related to cooperation, as this was a good model for ArabicSL (spoken and written) used by the hearing teacher. In the example above, the Deaf person used visual supports (pictures as well as the written sentence) to make the text meaningful.

The teacher's and assistant's roles were equal and complementary; they both took the role of instructor, with the teacher employing written Arabic (L2) and the Deaf assistant modelling sign language communication to engage with the

Deaf pupils and express the idea of cooperation through using sign language as their L1, which was also pointed out in Smith's and Ramsey's study (2004).

Most of the pupils interacted positively with the Deaf assistants by giving real examples, and engaging in discussions and conversations. Indeed, the conversational competence of many of the pupils seemed to grow and they became more active when the Deaf assistants worked with the teachers in reading lessons. Before the Deaf assistants took part in the reading lessons, the pupils were rarely participated actively and did not engage in discussion of vocabulary or create their own sentences, whether in writing or signing. One example is Adwa, Grade 2, who rarely participated in classroom activities with the teacher; however, she became much more engaged and raised her hand to participate in activities when Deaf assistant took part in the lesson, even if the teacher or the assistant did not ask her to participate.

Other teachers taught reading texts in a strikingly different manner from that used by the Deaf assistants. The following instance is from classroom Observation Transcript 3 (Table 7.10).

Table 7.10: Classroom observation transcript 3

Observation day and date: Monday November 18, 2013.			
Time of observation: Fourth lesson, 10:15-10:50, after breakfast.			
Purpose of lesson: Reading the text correctly, understanding the concept of cooperation, identifying the type of cooperation and its benefits.			
Present: - Teacher: Mrs Athar; Deaf assistant; Three pupils; researcher.			
Absent: none.			
Lesson arrangement: Pupils sat in a semicircle. The teacher used the whiteboard, data show, PowerPoint and image cards.			

No	Teacher	Pupils	Deaf assistant
1	(Whole) Mrs Athar read the sentence again as a whole in Arabic but when she came to new words, she stopped to give its sign; e.g. <i>The pupils are thinking and consulting each other.</i> أخذ التلاميذ يفكرون ويتشاورون فيما بينهم.		The Deaf assistant stood on the left of the board and watched the pupils and the teacher.
2		They all copied the	

No	Teacher	Pupils	Deaf assistant
		teacher and read in unclear voice then they copied the sign of the teacher.	
3	She asked in spoken Arabic: <i>What does consulting mean?</i> ماذا يعني يتشاورون؟		
4		There were no responses to her question.	
5	(Whole) She explained the word 'consulting' by presenting a picture of two cakes and giving them an example in SSA: I need to choose a <u>CAKE</u> for the <u>PARTY</u> ; I'll ask my <u>SISTER</u> to tell ME which <u>ONE</u> which <u>CAKE</u> is more <u>DELICIOUS</u> that is consulting. It <u>MEANS</u> <u>WHAT</u> is <u>YOUR</u> <u>OPINION</u> ? <u>THIS</u> or <u>THIS</u> ? I need to choose a cake for the party; I'll ask my sister to tell me which one is more delicious. This is consulting. <i>It means what is your opinion? This or this?</i> أنا أحتاج اختار كيكة للحفلة، أنا سوف اسأل أختي لتخبرني أي واحدة، أي كيكة لذيذة ... هذه هي استشارة ... يعني إيش رأيك هذا ولا هذا. She repeated it twice.		
6		There were no responses.	
7	(Whole) She said in SSA: I want to <u>BUY</u> a <u>CAKE</u> . There are <u>TWO CAKES</u> ,		

No	Teacher	Pupils	Deaf assistant
	<p>one white and <u>ONE</u> with <u>CHOCOLATE</u>. I don't <u>KNOW</u> which <u>ONE</u> I <u>BUY</u>! I'll consult [Mrs Manal (Deaf assistant)] which ONE I can <u>BUY</u>.</p> <p><i>I want to buy a cake ... there are two cakes, one with white cream and one with chocolate. I don't know which one I should buy! I'll consult with [Mrs Manal (deaf assistant)] about the one I should buy.</i></p> <p>أنا أريد شراء كيك، وهناك كيكتان، واحدة بيضاء وواحدة بالشوكولاته أنا ما اعرف أيش اشترى! أنا سوف استشير [أبلة منال (مساعدة صماء)] أي واحدة اشترى.</p>		
8		<p>One of the pupils nodded her head to show that she understood. Alaa signed: CHOCOLATE CAKE LOVE ME. <i>I love chocolate cake.</i> شوكلاته كيك أحب أنا. No response from Nidaa.</p>	
9	<p>She pointed to the Deaf assistant to read the sentence. <i>The pupils are thinking and <u>consulting</u> each other.</i></p> <p>أخذ التلاميذ يفكرون ويتشاورون فيما بينهم.</p>		
10	She stood on the left of		(Whole) She read the

No	Teacher	Pupils	Deaf assistant
	the board and watched.		<p>sentence and explained it in sign language; e.g., she explained the word 'consulting' by presenting two pencil cases on the table and asking the pupils:</p> <p>ALL BAGS LIKE ME BUT KNOW NO ME ONE CHOOSE THIS THIS YOU WHAT? REASON? CONSULTING THIS MEAN OPINION ASK ME YOU THINK.</p> <p><i>I like both pencil cases but I do not know which one I should choose - this one or the other one. What is your opinion? Asking about your opinion means consulting. You are a consultant.</i></p> <p>كله شنطة قلم تعجب أنا لكن ما عرف أنا إيش واحده اختار هذه ولا هذه رأي أنت إيش؟ سبب؟ استشارة هذه معنى رأي أسأل أنا أنت شيء مستشار أنت.</p> <p>She wrote down the word 'consultant' on the board.</p>
11		Another pupil chose the pink pencil case.	
12			<p>She asked Nidaa in signing</p> <p>REASON CHOOSE PENCIL CASE WHAT (?)</p> <p><i>What is the reason for choosing this pencilcase?</i></p> <p>سبب يختار مقلمة اش هو؟</p>
13		<p>This pupil nodded her head and smiled and signed</p> <p>LOVE ME PINK PENCIL CASE. BEAUTIFUL</p>	

No	Teacher	Pupils	Deaf assistant
		<p><i>I love the pink pencil case because it is beautiful.</i></p> <p>أحب أنا الزهري المقلمة جميلة.</p> <p>Then, each pupil chose a pencil case and gave her opinion of it</p>	
14			<p>She responded to this pupil by signing:</p> <p>CORRECT. EXCELLENT.</p> <p><i>Correct. Excellent</i></p> <p>صح ممتاز</p>
15			<p>She gave the third pupil two pencils and asked her to act that she wanted to buy it and ask for consultation. She then asked the other two pupils by signing:</p> <p>CONSULTANT WHO? CONSULT WE WHO? TELL WE WHAT OPINION? WHO?</p> <p><i>Who is the consultant? Who do we consult with and who tells us his opinion? Who is he?</i></p> <p>مستشار من؟ يستشير إحنا مين؟ يقول إحنا إيش رأيك؟ مين هو؟</p>
16		<p>One of the two pupil signed with fingerspelling:</p> <p>CONSULTANT [the name of her classmate].</p> <p><i>The consultant is [the name of her classmate].</i></p>	

No	Teacher	Pupils	Deaf assistant
		مستشار [اسم زميلتها]	
17			She responded to this pupil by signing: CORRECT. EXCELLENT. <i>Correct. Excellent</i> صح ممتاز
18			She read the sentence The pupils are thinking and consulting each other. أخذ التلاميذ يفكرون ويتشاورون فيما بينهم. and asked each pupil to read the sentence in sign language.
19		They read after the Deaf assistant in sign language.	

In this session, Mrs. Athar started the reading lesson using a 'part of the text' approach (i.e. the teachers started reading the sentence by dividing it into words and the words into letters), emphasising sound-word and sound-letter correspondence (i.e. using a reading lesson to teach speech). She read the first sentence in spoken Arabic, with accompanying signs (Sign Supported Arabic (SSA)). While reading, she pointed to the words. This is reminiscent of the way reading was taught to Deaf pupils in the 1980s in Britain, as described by Wood, et al (1986).

She then went on to use the 'whole' technique, i.e. reading the whole sentence without stopping. After each word, she asked the pupils to repeat it after her. She used stories to clarify the main idea of the sentence and its meaning. Mrs Athar then asked the pupils to read it in spoken Arabic: *Come on, read together after me.* يا الله أقرأوا ورايا. The pupils copied the teacher and read in indistinct speech. She read a word, they copied her, then she read the next word, they copied her and so on with her correcting their pronunciation mistakes. The

teacher then went back to the 'part' technique, separating the words into sound-letters or letter names to explain the relationships between them.

Although the teacher taught the pupils by providing a visual example (picture), there were no responses to her question 'what does consulting mean?' The pupils did not understand her purpose. The progress of the lesson was slow and extended in time in a way which reduced opportunities for learning. When the Deaf assistant was allowed to create interaction, some progress was made, but despite the presence of the Deaf person, the PVR strategy was not effective because of the early control by the teacher.

During our lesson observations, none of the teachers or assistants asked the pupils to look at the reading texts and identify words that they might not know. None of them asked pupils to identify significant words in the sentence or in the text as a whole. Indeed, the pupils rarely interacted with the text, particularly if the Deaf assistant did not attend the reading lessons. The pupils had not been encouraged to highlight or underline the main ideas in the text. They also had no opportunity to predict the meaning of the words and were given no advice on how to use available information in the text to understand new words. It seems that the PVR strategy has been only partly implemented.

The Deaf assistants played a significant role in encouraging pupils to participate in some reading lessons. From Observation Transcript (2A) (Table 7.5), we can see how different the Deaf assistant's responses to the pupils' were compared with the teacher's responses. When Mrs. Manal (Deaf assistant) asked the pupils:

TODAY, COOPERATION LEARN, right?

Today we learnt about cooperation, didn't we?

اليوم، تعاون إحنا تعلم صح؟

pointing at the topic on the board, two pupils, Maram and Miad, responded. When Miriam did not interact with Mrs Manal, she asked her to come to the board, questioned her about what was written on it and discussed it with her in sign language. Surprisingly, we found that Miriam knew the answer, as she signed, accompanied by (poorly articulated) speech:

COOPERATION MUM ME HELPING.

Helping my mum is cooperation.

تعاون ماما أنا مساعدة.

h) Concluding the lesson (review stage)

A further example from Classroom Observation Transcript (4) (Table 7.11) illustrates how the Deaf assistant encouraged the pupils to work as a group.

Table 7.11: Classroom observation transcript 4

<p>Observation Day and Date: Thursday November 28, 2013 Time of Observation: Third and fourth lessons, 9:30-11, after breakfast. Purpose of Lesson: Reading the text correctly, acquisition of cognitive and linguistic credits for our bodies and health, and understanding the concept of joints and their functions. Present: Teacher = Mrs Asmahan; Deaf Assistant; Five pupils. One of them who left the school before finishing the intervention). Absent: none. Lesson arrangement: The pupils were seated in a semi-circle. The teacher used the board, data show, PowerPoint, skeleton and image cards.</p>

After the Deaf assistant had explained the joints mentioned in the text 'Our bodies and their health', she divided the five pupils into two groups, asking each group to identify each others' joints and state their functions. Interestingly, the four pupils other than one responded, whereas this pupil looked at her peers, then at the Deaf assistant and the teacher, and signed: WHAT? *What?* إيش. She seemed not to have understood the Deaf assistant. The assistant repeated the question in sign language and asked this pupil's group to work together. Then, one the five pupils held this pupil's hand, pointed at some joints and acted out how her hand would be if there were no joints. Another pupil signed to this pupil:

COME ON TURN YOU JOINT WHERE?

Come on, it's your turn show us where is the joint?

ياالله دور أنت مفصل فين؟

In response, this pupil pointed at several joints on her body.

At this stage, the teacher and/or the Deaf assistant were to review what they had taught in each lesson and attempt to check on the pupils' understanding.

Two teachers/assistants asked the pupils to summarise what they had learned by writing sentences, drawing pictures or telling the story in sign language.

The following example was taken from the Observation Transcript 1G (Table 7.12) to illustrate how the teacher and the Deaf assistant collaborated to conclude the lesson. Two of the five teachers and the Deaf assistants followed the PVR strategy for the most part.

Table 7.12: Classroom observation transcript 1G

No	Teacher	Pupils	Deaf Assistant
1			Pointing at the board, the Deaf assistant signed simultaneously: TODAY, COOPERATION LEARN, right? <i>Today, we learnt about cooperation, didn't we?</i> اليوم، تعاون إحنا تعلم صح؟
2	Mrs. Abrar stood on the right of the Deaf assistant and pointed to the topic on the on the board.		
3		They all replied in spoken Arabic: Right. <i>Right.</i> صح.	
4	She nodded her head to show that their responses were correct.	One of the pupils signed: FAMILY COOPERATION. <i>Family cooperation.</i> أسرة تعاون	She signed: GOOD. <i>Good.</i> ممتاز.
5	She nodded her head to show that their responses were correct.	Another pupil signed: STREET COOPERATION POLICEMAN MAN.	

No	Teacher	Pupils	Deaf Assistant
		<i>In the street, there is cooperation between a policeman and a man.</i> شارع تعاون شرطة رجل.	
6	She nodded her head to show that their responses were correct.		She signed: GOOD. Good. ممتاز.
7			She gave them stickers as a reward.
8-14	Introduces mind-map.		She explained the mind-map.
15	She discussed, their answers with the pupils and corrected their spelling mistakes and grammar.		

After introducing the mind-map to the pupils, Mrs. Abrar (teacher) asked them to pay attention to the Deaf assistant, who would explain it to them. The Deaf assistant used different methods to ensure that learning and interaction took place. First, she offered a model structure in sign language, which she later made the pupils do activities with. She signed:

ME TAG WITH [Mrs Abrar] TEACH YOU COOPERATION
EDUCATE YOU.

Me and [Mrs Abrar] cooperation with each other to teach and educate you.

أنا مع بعض مع [أبله أبرار] يدرس أنت تعاون يعلم أنت.

Interestingly, we could see that all three pupils engaged with the Deaf assistant through her challenging them to reflect on experiences that they had had; such communication between the Deaf assistants and the pupils supports them in understanding and learning. One of the pupils signed:

ME COOPERATION MUM HOME ME AND MUM COOK TAG

Me and my mum cooperated at home; me and my mum cook together.

أنا تعاون ماما بيت أنا و ماما يطبخ مع بعض.

Similarly, another pupil signed:

FAMILY DAD MUM COOPERATION SCHOOL FRIEND.

Cooperation in the family between dad and mum. Cooperation in the school between friends.

أسرة بابا ماما تعاون مدرسة صحبة.

Although Miad the third pupil did not raise her hand to participate, Mrs. Abrar (teacher) moved towards her and asked her in sign and speech:

Yes [Miad], want YOU SAY SOMETHING?

Yes, [Miad], would you like to say something?

ها [ميعاد]، تبغي تقولي شيء.

This pupil responded in sign and speech:

LOVE ME FRIEND ALL ME COOPERATION ALL SCHOOL ME
SISTER COOPERATION HOME MUM

I love my friends, we cooperate at school. Me and my sister cooperate at home and help my mum.

أحب أنا صحبة كل تعاون كل مدرسة أنا أخت تعاون بيت ماما.

Mrs. Manal (the Deaf assistant) encouraged Miad and signed:

EXCELLENT.

Excellent

ممتاز

The Deaf assistant then drew a mind map on the board and wrote down the selected vocabulary from the lesson to review the pupils' understanding; then they followed her. She signed with fingerspelling:

PAPER THIS...EACH ONE m-i-n-d. m-a-p DRAWOK

THEN ANYTHING ANYTHING LEARN YOU COOPERATION
WRITE ON PAPER.

*This is a sheet of paper. Each one of you has to draw a mind map
and fill it with anything you learnt about cooperation.*

ورقة هذه... كل واحد خريطة يرسم تمام ... بعدين أي شيء أي
شيء تعلم أنت تعاون أكتب في ورقة.

Other teachers, however, concluded the lessons by asking the pupils to copy the sentences or the words that were written on the board, without discussion or giving homework. This meant that the Deaf assistant was not involved in the conclusion (review) stage; the lesson was controlled by the teacher.

Additionally, the teacher, instead of teaching comprehension, was teaching word reading through memorisation.

In the observations, none of the five teachers or their Deaf assistants concluded a reading lesson by involving the pupils in free reading or asking them to choose a story from the shelf and come in the next day to discuss it with the whole class. The pupils did not borrow books or take them home. They were not taken to the school library or encouraged to visit it.

Differences in the behaviours of the participants might have affected the lessons. These are discussed in the following section.

7.4 Views of lessons prior to PVR/during PVR and issues of pupils' learning

During the classroom observations, several behaviours and characteristics of language and interaction between teacher and pupils, between teachers and Deaf assistants (co-teaching practice), between Deaf assistants and pupils and between pupils and pupils were observed. The most frequent behaviours and changes where they occurred during the course of the intervention are discussed below.

7.4.1 Attracting Deaf pupils' attention

Teachers and Deaf assistants differed in strategies for attracting the Deaf pupils' attention during the reading lessons. In contrast to Mrs Manal (Deaf

assistant), who waved her hand to attract the pupils' attention towards Mrs. Athar (teacher), the teacher herself used speech or tapped on the board to attract their attention.

In one reading lesson, Mrs. Athar stood next to a pupil who was writing on a sheet of paper and spoke to her without first gaining eye contact

What did we say? We cannot do this. This is wrong... [Pshaw!] Oh my God...wrong wrong wipe wipe

إش قلنا إحنا؟ إحنا مانقدر نسوي كذا. هذا غلط. أووف ياربي غلط
غلط أمسحي أمسحي

The pupil did not respond until Mrs Athar put her hand on the paper, then she looked at the teacher, who repeated what she had said to the pupil.

Eye contact is essential for interaction with Deaf individuals. However, before and during the intervention teachers had difficulty in making eye contact with pupils and often shouted during the reading lessons to attract their attention.

7.4.2 Teachers' professional responsibility

Four teachers began to recognise the importance of adapting the reading texts to make them more suitable for the Deaf pupils. However, their adaptations were focused on simplifying the Arabic, not on producing a route to the text from a sign language perspective. Mrs. Abrar, for example, presented the text about cooperation in separate sentences on the board. She condensed the entire content of the text into a short Arabic form which native speakers of Arabic would find easier. Mrs. Eklas reduced the text from two pages to under one page; she removed what she believed were most of the complicated words and grammar and omitted repeated phrases and words which she felt were not relevant. She gave the pupils handouts of this revised text, but then asked them to copy it without first explaining any of it. The teachers' approaches in teaching literacy to Deaf pupils are not surprising as they were used by teachers in other countries such as the UK (e.g., Heineman-Gosschalk and Webster, 2003). Adapting such approaches by teachers of Deaf pupils could be due to the lack

of time and training that the teachers received in developing the literacy skills of Deaf pupils.

7.4.3 Focusing on Deaf pupils with good speech

All of the teachers, before and during the intervention, focused on those pupils who could speak some Arabic, even if their speech was poorly articulated. Pupils who signed received very little or no attention from the teachers. Such behaviour was reported by the participated teachers and parents in Heineman-Gosschalk's and Webster's study (2003). The likely reason for this is that the teachers were better able to understand the speakers than the signers. This behaviour is completely different from that of the Deaf assistants, who interacted with all of the pupils, whatever their skills in sign language, and who engaged those who tried to avoid participation as well as those who participated actively. This finding is also reported in Kyle's, Woll's and Ackerman's report (1989), Webster's and Heineman-Gosschalk's study (2000) and Heineman-Gosschalk's and Webster's study (2003).

7.4.4 Types of questions asked by teachers and assistants

The questions that the teachers posed during reading lessons differed from those asked by the Deaf assistants.

The teachers often asked the pupils either factual questions which required them to remember facts structured chronologically or structuring/close-ended questions. They asked many questions but often did not give the pupils a chance to respond. Clarifying questions, to assist the pupils to think more deeply about the topic, were not used by either the teachers or the Deaf assistants. Mrs. Athar (teacher), for example, asked the pupils several questions one after the other in signed Arabic, but none of them responded.

WHAT did WE study YESTERDAY? WHAT did YOU LEARN? WE learned about modern communication devices. Who can name some of them?

What did we study yesterday? What did you learn? We learned about modern communication devices. Who can name some of them?

وش درسنا أمس؟ وش تعلمتيا؟ إحنا تعلمنا وسائل الإتصالات
الحديثة، مين تعدد لي بعضها؟

Both Deaf assistants made use of yes/no questions and or tag questions during the literacy lessons. For example, Mrs Lama asked Grade [x] pupils:

MECCA PRAY DO UMRAH, TAG don't we?

We go to Mecca to pray and do Umrah, don't we?

مكة يصلي سوى عمره إحنا نروح، مو صح كذا؟

Mrs Manal also asked Grade [x] pupils:

HONESTY AND TRUTH MUST WE CHARACTERISTIC,
CORRECT?

Honesty and truth are characteristics we must have, correct?

صدق وأمانة لازم إحنا صفة، صح؟

7.4.5 Teachers helping out with answers

There was a further problem regarding the behaviour of teachers in reading comprehension assessments. For example, Mrs. Eklas helped the pupils by revising the main information just before the reading assessment to help them to recall it during the test. She also helped the pupils during the test by giving them clues. For example, when one of the pupils chose the wrong word from the list to fill the gap, Mrs. Eklas approached her, tapped on the table and showed through her facial expression that the pupil's answer was wrong. Then she signed: REMEMBER (?). *Remember?* بتذكري؟, followed by pointing at the sentence on which the pupil had made a mistake. Such behaviour may make the pupils more dependent and reduce self-confidence in their work.

7.4.6 The Deaf assistant as advisor

During the classroom observations, we noted that the Deaf assistants' role was not limited to teaching but sometimes also extended to serving as counsellors. They advised pupils when behavioural problems arose. For example, when some Grade [x] pupils laughed at an older pupil [x] who was asked a question by the teacher that she was not able to answer, Mrs. Lama intervened and

advised them to behave kindly with each other. She was sensitive to the pupils' interaction when the teacher was not.

7.5 Conclusions and possibilities for future reading assessment of Arabic

From these observations of ARMD, several major issues emerged. The pupils did not automatically understand that written answers were required, or that questions were not to be copied as answers. They demonstrated very poor skills in the grammar of written Arabic. Lack of metalinguistic competence meant that differences between sign language and written Arabic were not understood.

Because of the difficulty that the Deaf pupils faced in putting their responses in writing, we suggest that teachers and Deaf assistants might find another way to help the pupils to respond. Instead of asking them to copy from the board, the teachers should ask them to write down what they have learnt from the lesson by drawing a storyboard of some events regarding cooperation and writing some sentences below the drawings. The Deaf assistant should then present the drawings on the board and discuss them in groups in sign language, and the teacher could correct their writing.

MSA was used in the reading curricula but sign bilingualism was neither well understood nor effectively implemented. Most of the pupils were unable to understand the requirements of the tasks in ARMD. Instead of writing their interpretation of the posters' message, they only identified items as familiar pictures. They mostly responded in poorly articulated spoken language, sign and/ or SSA when they were asked to write; when they did write, they only produced single words, or created unclear Arabic sentences with many grammatical errors. The pupils were shocked when they saw the long texts in ARMD which were unfamiliar to them. They spotted familiar words and matched them to the pictures, and often copied the questions as answers. There was a mix of vernacular Arabic and MSA in their spoken and written answers.

Most of the Arabic literacy sessions observed did not focus precisely on literacy. Instead, they focused on interaction about reading texts within the school.

Implementation of PVR as a sign bilingual approach by teachers and assistants was inconsistent and incomplete. The teachers' interactions did not correspond to the SBE model: teachers used spoken Arabic and/or SSA instead of SaudiSL; they concentrated on interaction with those pupils who could speak; they displayed poor skills in attracting the pupils' attention and failed to use pupils' background knowledge to support delivery of content during the teaching of reading. Surprisingly, some teachers also seemed unsure whether the pupils understood what they had explained to them. Moreover, they appeared to ignore those pupils who seemed not to have understood them. Perhaps they did not want to show that they had failed in delivering the information.

In the project, the Deaf assistants were different from the teachers. They played two roles (teacher and interpreter) during the reading lessons, assisting the teachers when they were unable to express a teaching concept or to measure the pupils' understanding of notions through spoken or written Arabic. In this case the Deaf assistants supported the teachers by modelling deaf communication, a function which they did not always perform, because the teachers tended to control the lessons. Thus, the Deaf assistants often did not have an effective role in lessons, but only sat and watched.

The Deaf assistants also applied different methods to help the Deaf pupils become involved in reading lessons. They both encouraged them to do so by simplifying questions and providing clues, by giving them other examples, working in groups or linking the context with earlier events that the pupils might be able to remember. We suggest that involving a Deaf adult in the classroom might help the teachers to learn these ways of teaching.

Although the intervention assumed that the Deaf assistants would use SaudiSL for comprehension and expression, this was an issue because both SaudiSL and ArabicSL were used in the school setting, by teachers, Deaf assistants and pupils. Teachers found it difficult to support pupils using sign language or other forms of expression such as acting out or drawing, as a means of moving towards understanding concepts in written language. Moreover, although there was a considerable emphasis on Deaf models, most of the pupils spent very little time with a Deaf assistant.

Despite having had limited training in co-teaching, when hearing teachers and Deaf assistants worked together using the PVR strategy they were able to appreciate each other's abilities and cooperate successfully, enhancing the pupils' achievements in reading Arabic. Although the Deaf assistants performed both roles as models, in order to develop their possible role as teachers and agents of change, they will need to be enabled to attend in-work training courses after school hours or in the holidays.

Co-teaching should be planned between hearing and Deaf staff, with high expectations for Deaf pupils. The Deaf assistant and hearing teacher need to learn how to work together as a team, respect each other's specialised knowledge, improve their communication with each other, jointly prepare lessons and set targets together to improve both the academic and social skills of their pupils. If teachers were seeking to develop their teaching and interaction skills with Deaf pupils, working with Deaf assistants would be an advantage. Co-teaching with the Deaf assistant in reading lessons should be carefully planned and the Deaf assistant's and teacher's roles should be clearly identified in advance; such thorough preparation is likely to make the teaching process more organized and effective. We also suggest that it is very important for teachers to learn sign language for use with their Deaf pupils and that using sign language as a first teaching language for Deaf pupils would facilitate effective interaction between the Deaf adult, the teacher and the pupils.

Chapter 8: Beyond the Intervention: Teachers' and Deaf Assistants' Reflections

The teachers and Deaf assistants who had participated in the intervention shared their reflections on applying the sign bilingual education (SBE) and preview view review (PVR) methods.⁷⁵ This chapter presents these data, which were collected in individual and group discussions with all participants. In the formal individual interviews with the Deaf assistants, a hearing teacher acted as volunteer interpreter.⁷⁶

8.1 Initial themes

Several themes regarding the SBE approach /PVR strategy emerged from the initial analyses of the interviews (Tables 8.1 and 8.2) before, during and after the intervention.

Table 8.1: Teachers' perspectives: Initial points

Theme	Summary
Attitude change	Changing teachers' expectations of what pupils can achieve and what Deaf adults can do.
Language/Arabic literacy	Arabic dialect differences influence reading "instruction". Varying expectations of girls' reading achievement. Misunderstanding in reading comprehension.
Sign language	Conflict between ArabicSL and SaudiSL.
Professionalism	Teachers' understanding of how to improve learning by their own techniques. Issues around flexibility in lesson delivery/techniques.
Enhancing pupils' engagement and social relationship with Deaf assistant	The programme reinforces the relationship and helps pupils pay better attention.
Power relations between teacher and Deaf assistant	Deaf assistants in subservient role.

⁷⁵This chapter quotes the interviewees in English translation only.

⁷⁶The volunteer interpreter was a teacher of older pupils, fluent in SaudiSL. She was not formally trained as an interpreter.

Table 8.2: Deaf assistants' perspectives: Initial analysis

Theme	Summary
Teacher-assistant power sharing	Deaf assistants are able to communicate better with Deaf pupils, but have less power.
Improving professionalism of teaching	Potential for engagement by Deaf assistants
Variation in sign language among Deaf assistants, teachers and pupils	Pupils used different signs from Deaf assistants and teachers
Exploitation of Deaf assistants	Assistants attended only certain reading lessons, based on teachers' determination of their needs
Sign language competence	Teachers' poor sign language results in ineffective interaction with pupils

These first-level analyses suggest further underlying factors in the data, such as insufficient monitoring by the school management, teachers' low expectations of pupils' performance, and power imbalances. The emerging pattern is described in terms of four main themes affecting the development of pupils' literacy. These themes, discussed in detail in the following sections, are: attitudes and attitude change; professionalism and capacity for change; teachers' concepts of reading; and sign language. Two further themes are also discussed: power and roles; and social relations and confidence.

8.2 Attitude and attitude change

Attitudes are groups of beliefs which people base on their experiences and communications with others; these beliefs in form their actions and expectations. Attitudes relating to Deaf pupils are crucial to the process of education. The attitudes of teachers are often different from those of Deaf people. This major theme in the analysis has four subthemes: expectations about Deaf girls, attitudes towards Deaf assistants, Deaf attitudes to teachers' signing and Deaf assistants' views of teacher's attitudes.

8.2.1 Beliefs about Deaf girls (expectations)

Before the intervention began, the teachers often expressed negative views of Deaf girls and Deaf pupils in general.

The [ARMD] is difficult for our pupils. They wouldn't be able to answer the questions because they don't know how to read and their signs are poor. (T1-Ath2)

Even at the end of the intervention there were still negative comments:

The sign bilingual approach is an amazing approach, but what I see is that the curricula are very difficult and whatever we do, the pupils cannot understand; especially in Arabic reading, where they didn't understand and interact in the class. (T2-Rug2)

Mrs. Athar felt after the intervention that her attempts at educating Deaf pupils had failed. Even though she was positive about SBE, she attributed their problems with literacy to their own weakness, rather than to the educational method or to her competence. She complained:

Our Deaf pupils are very poor at reading and they are hopeless [...] I'm tired of teaching and repeating the information over and over again but they still they don't understand [...] There's no hope, they're always forgetting the information that I've given them [...] Hearing pupils would be able to remember, but Deaf pupils wouldn't. (T2-Ath3)

Although there were some positive changes in attitude after the intervention, teachers on the whole retained low expectations of the Deaf girls.

8.2.2 Attitudes towards Deaf assistants

At the end of the intervention, Mrs. Rugaia (teacher) negatively reflected on the research by stating:

I found it easier to work without the Deaf assistant, as she was an extra workload for me. I didn't have time to train and teach her. I wasted my time in training her [...] Applying the sign bilingual approach is difficult and there are no principles for its implementation; I cannot understand the idea of asking the Deaf assistant to come to teach in sign. (T2-Rug3)

She did not recognize the Deaf assistant as having any value as a Deaf role model.

The teachers also expressed mixed views about having a Deaf person working with them. Some positive attitudes towards co-working with a Deaf adult did emerge during the intervention. Mrs. Abrar (teacher) stated:

I couldn't have imagined what the Deaf teachers did in the class. You [the researcher] were with us in the class and you might have realised how she could have helped the pupils understand the information without shouting; she's a real teacher. (D-Abr4)

Involving the Deaf adults in the classroom enabled two of the teachers (Abrar and Eklas) to begin seeing the skills of the Deaf assistants positively:

In the first term, there was a difficulty in reading texts which had sophisticated words that I didn't know the signs for. Mrs. Lama's description of the terms in the reading texts was better than mine, her signing was more understandable than mine and she helped me describe the complex terms to the pupils [e.g.] "plough the ground". I tried to explain it to them, but I couldn't. (D-Ekl2)

Teachers began to recognise the value of the Deaf assistants and their success in teaching in sign language. Mrs. Abrar felt that the compatibility of the Deaf assistant and the Deaf pupils was the reason behind their understanding of each other.

Mrs. Manal can do everything. She can be a leader, a teacher and an assistant. Her role is very important, as she can deliver unclear ideas. She was eager to learn the information, she taught me how to explain the information to the pupils and she is preparing the lesson timetables and helping teachers to organise exam work. (D-Abr5)

The consequences for the teachers of involving the Deaf assistant in reading lessons were also positive at a personal level. They became aware of what they needed to do and what they did not know as teachers of Deaf pupils.

It's important to spend more time with our pupils, talk and think with them so that we can interact with them in a better way [...] Through my experience with Deaf pupils, I found that I must use my brain more when preparing the lessons and not just depend on the school book. I mean I mustn't just write and speak like we do with hearing pupils. (D-Ekl3)

As a positive result of co-working with the Deaf assistants, the same two teachers became more reflective. They recognised that communication with the Deaf pupils was not limited to speech, written text and visual images, but also included sign language.

I spend time home thinking about how I can deliver the information to them through examples and activities, because there are aspects which are difficult to deliver to the pupils through images only. (D-Ekl4)

However, at the same time, there were negative comments about the Deaf assistants' poor education and lack of qualifications.

As you [researcher] know, the Deaf staff aren't educated, so do you think that they'll be able to teach the pupils reading? They've never been to class. (D-Rug4)

Some teachers, such as Mrs Asmahan, continued negatively criticising the Deaf assistants throughout the intervention. Their views were driven by their own reliance on spoken Arabic when communicating with the Deaf assistants. Any difficulty in interaction with an assistant was presented as a weakness in that Deaf person:

The Deaf assistant wasn't very skilled in teaching, and she needs extensive training; even if I explained the lesson to her before entering the classroom, she couldn't understand everything. I explained each concept and sentence to her and she nodded her head and said she understood the lesson. However, in the classroom, she taught the pupils something different; [e.g.] instead

of signing: *maintaining the family*. الحفاظ على الأسرة, she signed:
nappy the family. الأسرة الحفاضة على. (D-Asm2)

The mistake by the Deaf assistant that Mrs. Asmahan reported, signing NAPPY instead of MAINTAIN, may have happened because of the similarity between two letters in the words: ظ /THAaa/ and ض /ḍā/. These have a similar sound and shape, which may confuse hearing listeners. However, there is a possibility that the teacher did not fully understand the Deaf assistant's signing.

At the end of the intervention, Mrs. Asmahan appeared still to see the Deaf assistant's participation as a problem:

I'll teach a new group of pupils. It's difficult to continue applying the programme, as it requires a huge amount of effort to teach the pupils in two languages i.e. signing by the Deaf assistant and speaking and writing by me. (T2-Asm3)

Negatively perceived difficulties were compounded by the belief that the Deaf assistants' ArabicSL was different from the pupils' signing.

The sign bilingual approach is very good, but if the Deaf assistant was educated and a specialist, there would be no common language between the pupils and the assistant. I feel that our pupils' signs are correct, but the Deaf assistants invent new signs. (T2-Rug5)

This comment, made at the end of the project, set a tone of poor understanding of sign language and its dynamic features. The semi-standardised and artificial form of ArabicSL is what the teachers had been told to use. Mrs. Eklas (confusedly) stated:

I don't support the idea of the presence of the Deaf assistant with young pupils. I felt that young pupils were confused between the teacher and the Deaf assistant and they didn't understand the Deaf assistant, perhaps because they're young and don't have a wide range of vocabulary like junior pupils [i.e. years 5 and 6], who

might benefit from her and be able to understand her signs. (T2-Ek15)

Mrs. Athar and Mrs. Rugaia refused to allow the Deaf assistants to introduce lessons at all, because of their perceived lower status. Mrs. Rugaia negatively said:

I begin reading the text, then [let] the Deaf assistant teach the pupils in sign, not because there's any failure from her but I don't see that she should begin the lesson. The Deaf assistant isn't qualified and I feel wary about correcting her mistakes, as she's my colleague. If I allowed her to attend another lesson, she might help me in explaining the lesson to the pupils, but she'll also benefit from me, as she doesn't know the basics of learning. (T2-Rug6)

Negative views of the Deaf assistants were linked to their perceived lack of knowledge of ArabicSL:

The Deaf assistant was the thing that didn't work very well in the sign bilingual approach, as she isn't a qualified person; she needs to go on some Arabic sign dictionary training courses. [...] Their training should also be done through the Ministry of Education, because the teachers don't have time to train them (T2-Ath4).

Although Mrs. Abrar positively stated that training should be the responsibility of the Ministry, she wanted the Deaf assistants to be introduced at a lower level and prove themselves to the administration.

The Ministry of Education should train the Deaf assistants in teaching skills, in designing educational tools and Arabic. However, I have to personally train the Deaf assistants in school, so they know my teaching technique. Because the school administration isn't convinced about the Deaf assistants' teaching skills, and religious education is difficult for us to teach, the Deaf assistants should teach religious courses to Deaf pupils in the schools to convince the administration of their teaching abilities, so

the teachers and the Deaf assistants can learn from each other.
(T2-Abr6)

Teachers were challenged by observing the effective communication between Deaf assistants and pupils. Even so, the attitudes were contradictory. Mrs. Eklas said:

I don't think that the sign bilingual approach will succeed if there's no Deaf teacher; I can't say that the hearing teachers could do without the Deaf assistant. Especially if their signing is poor, they'll need to work with a Deaf assistant, but for me I can manage without the Deaf assistant. (T2-Ekl6)

Mrs. Rugaia, however, wanted to protect her own professional standing by making a negative comment:

The Deaf assistant does not understand the information, so how is she going to teach? I feel that the sign bilingual approach is hard to apply, because the Deaf assistant cannot fulfil her role, because she is still learning. I don't have an issue with the Deaf assistants themselves, but they are completely unqualified and not suitable for education. This strategy requires qualified people. (T2-Rug7)

Again, we see a narrow view of the Deaf assistant role, with no understanding of the cultural impact of the Deaf role model. The same negative view of the Deaf assistant role appears in Mrs. Athar's final interview:

The Deaf assistants should attend as listeners with the teacher or teach reading texts, but not lead the exercises [...] I feel that they can be administrators but not educators. (T2-Ath5)

This difficulty in seeing the potential of Deaf people within education impacted on the way in which the teachers engaged with the Deaf assistants as co-workers. The administration's lack of interest in the Deaf assistants negatively affected the teachers' enthusiasm for the SBE programme.

Our interviews with school administrators indicate a lack of interest in the Deaf assistants and narrow views of their qualifications and teaching skills:

In fact, the Deaf assistants were appointed by the Ministry of Civil Service as maids and then as assistant administrators. Because of the lack of hearing staff this year, we need the Deaf assistants in the administration (Mrs. Afnan, Administrator). (T2-Afn2)

In this negative context, the Headteacher also said:

Sign bilingual education needs Deaf and hearing individuals but the Deaf assistants aren't educated. They must have training and qualification for teaching all subjects, like hearing teachers, to teach pupils [...] The teachers have suggested that if the two teachers in the sign bilingual programme were hearing, one could take the role of the hearing teacher and the second the role of Deaf assistant. That would be easier for them [...] The teachers should also learn how to use two languages in the programme. (T2-Hea1)

Such views are not unusual as social attitudes to Deaf people act as an obstacle to Deaf people taking up teaching positions. Identifying this problem is important in making progress with SBE.

8.2.3 Deaf attitudes to teachers' signing

In contrast, the Deaf assistants positively pointed out the importance of sign competence. Mrs Manal said:

I liked [Mrs. Abrar's] activities in the classroom because she is a teacher and she has a certificate and knows how to read and write and I learned from her, but I'm better than her at signing, because the Deaf pupils understand me and I understand them. (D-Man3)

On this point, the other Deaf assistant, Mrs. Lama, positively said:

A good teacher must be a good signer. For example, I've learned from Mrs. Asmahan how to teach because her signing was good and fast and I preferred her teaching method; she used sign more than speech. On the other hand, Mrs. Rugaia talks Arabic very well but she didn't use sign [...] I can see that the certificate isn't everything [you need] to teach Deaf pupils. A teacher's job must

be pleasing to God Almighty; the teacher can write but I can't, I can sign but she can't. (T2-Lam2)

The Deaf assistants also neutrally emphasised the importance of visualisation by the teachers when teaching Deaf learners. Mrs. Manal said:

The teacher doesn't necessarily have to be an excellent teacher in sign to be good at teaching. For example, Mrs. Abrar's signing wasn't very good, but her teaching was amazing and she delivered the information accurately. Mrs. Asmahan's signing was good, but her teaching was not good. (T2-Man4)

Deaf staff thus recognised that hearing teachers had better teaching skills than them, but expressed concerns about their sign language competence. Limited communication skills will hamper the delivery of information to the pupils and therefore impact negatively on academic performance.

8.2.4 Deaf assistants' views of the attitudes of the teachers towards them

The negative attitudes of the teachers were also mentioned during the intervention by the Deaf assistants, who felt used by them:

The way Mrs. Abrar treated me depended on her mood. If she was in a good mood she allowed me to attend her lessons, but if she was in a bad mood she told me that there was no need for me to come as she would only be doing some revision [...] One day, she made me explain everything to the girls in sign for three hours in continuous lessons, without a break, because she was preparing for an observation by the Head Teacher and Supervisor the following day. Then she told me that there was no need for me to attend with her the following day. She exploits me. (D-Man5)

The negative theme of exploitation re-appeared again at the end of the intervention when Mrs. Lama said:

The teachers didn't hand much responsibility to me. They prepared the lessons and then explained them to me. They asked me about some signs which aren't in the sign dictionary. They only need me to help with the signs. (T2-Lam3)

The analysis shows that hearing teachers and Deaf assistants expressed mutually negative attitudes, which reduced the potential impact of the intervention.

8.3 Professionalism and the capacity to change and learn

The responses of both teachers and Deaf assistants appeared to indicate an unwillingness to take responsibility for pupils' education, the curriculum, lessons or punctuality; nor did they appear able to act on their own initiative. This may have been the result of weakness in training, a fear of the administration or a lack of professionalism.

Many of the teachers viewed their duty negatively at a very basic level: to deliver the mandated curriculum to Deaf pupils. The project challenged them with a new approach where they had to think about pupils' individual needs and co-work with a Deaf assistant. Doing so involved work outside the classroom. At the end of the intervention, Mrs Athar stated:

I couldn't maintain the teaching plan until the end of the year, because there were obstacles such as the test days, pupils' absence and spending time on training the Deaf assistant, which meant I had to take the pupils for extra lessons. (T2-Ath6)

Saudi society does not hold education in high esteem and the profession is not well regarded. Teachers are not empowered to innovate.

Four of the teachers (Rugaia, Asmahan, Eklas and Athar) negatively claimed that the difficulty of the national reading curriculum was the source of reluctance to continue the SBE intervention. Mrs. Asmahan raised this issue:

It was very hard to teach the reading curriculum to Deaf pupils because it needed to be adapted to them; there were vocabulary items and sentences which I completely deleted because we as teachers found it difficult to understand them. (D-Asm4)

In contrast to the above, Mrs Abrar optimistically reported that implementing SBE did not affect the achieving of lesson targets.

Because of the intensity of the curriculum, every year I used to be late in the curriculum and I couldn't achieve my targets for all the

pupils; however, this year was different [...] In this [first] year, I completed the reading curriculum on time. I worked together with the Deaf teacher to focus on the important things in the reading lessons, although she sometimes couldn't attend with me, but I didn't make any changes to my plans and lessons. (D-Abr7)

Mrs Lama. (Deaf assistant), however, argued that some teachers failed to teach lessons on time.

Sometimes, the lesson time was finished, but teachers couldn't finish most of the reading texts [...] Mrs [Rugaia] continued reading texts in the following lesson, although she didn't try to pressure the girls to finish it on the same day. She used to teach the information as it's in the schoolbook. Because of the limited time, she would teach half the text each day just because it is obligatory! (D-Lam4)

It seems clear that there was an underlying professionalism issue where teachers viewed their role as deliverers of the curriculum and not as educators in the sense of maximising the potential of individual pupils.

8.3.1 Willingness/resistance to innovate

Before the intervention, three of the teachers (Abrar, Rugaia and Asmahan) stated that they would take the initiative in trying out new ideas, and positively expressed their willingness to develop the literacy-teaching strategy. Mrs. Rugaia said:

We always do what we can to improve the pupils' literacy but God can do anything [...].What is the sign bilingual approach? I wish I could try it. Hopefully, it'll help our pupils in reading because their level is low. (T1-Rug8)

During the intervention, Mrs. Abrar, who worked with the Deaf assistant for 7 classes each week, was positive about the change:

The sign bilingual approach is an amazing approach, I applied it in both semesters last year in reading, writing, dictation, monotheism and jurisprudence classes. This may have helped the programme to succeed with me, and I'll continue applying it during the new

school year and even after we stop the research, because my pupils and I are benefiting from it [...]. Why do we need to reject the strategy? It's an experiment and countries such as America and Britain have preceded us and applied this approach that has proved successful in Deaf education. So, it's not a defect to take this good approach from them. We've got to apply it and see what the results are. (D-Abr8)

Mrs. Eklas also made a positive comment:

I'd like to apply the sign bilingual approach and I'd love to work with the Deaf assistant, because in the first semester she took a huge amount of work pressure off me. Her description for the terms in reading texts was better than mine. She helped me describe complex terms to the pupils, such as the Earth. (D-Ekl7)

The teachers' resistance was also negatively reflected on by the Deaf assistants.

There are teachers who don't care about anything. It isn't relevant for them whether the girls understand or not. (T2-Man6)

The Deaf assistants also commented positively on the teachers' willingness to use new teaching methods, teaching or learning using sign language and inventing tools:

There are teachers who want to learn everything. They've been on courses and gone to conferences and they want to learn signs. For example, Mrs Abrar likes to try new things in teaching and developing. (D-Man7)

However, even at the end of the intervention, three of the teachers found it difficult to imagine how they were going to change their teaching methods and showed no desire for change. They were reluctant to continue implementing the programme, preferring to keep to old routines.

Although during the intervention Mrs. Eklas expressed her desire to involve the Deaf assistant, she was less positive about SBE at the end of the intervention and decided not to continue with the programme after the group discussion.

It's difficult to continue implementing the sign bilingual approach as I'll be teaching a new group of pupils this year and a new reading curriculum which I haven't taught before. The Year 6 curriculum is much more difficult than the Year 2 curriculum. I haven't thought about involving the Deaf assistants with me this year, although I could do that, especially in dictation lessons. (T2-Ekl8)

Other change-resistant issues arose from previous perceived innovation failures.

In teaching, we [teachers] all relied on Arabic, which is very strong and has many synonyms. Why do we need to bring a Deaf assistant to teach with us? [...] We [teachers] have tried different strategies to teach Deaf pupils before but they didn't work; there was no benefit; we only wasted time and effort. (T1-Rug9)

We can see the impact of the school administration in that after the SBE intervention, a new language programme was brought in without clear planning –another reason why the teachers were unwilling to carry on implementing the programme. After the intervention, Mrs. Athar negatively said:

Look! Now the General Administration of Special Education has asked us [teachers] to apply a new programme called 'Kanzon' for the primary stage, to teach the pupils four words that aren't in the reading curriculum. Every week [...] each teacher has to design pictures for each unit of the programme. For example, this week the pupils will study a passage about 'relatives'. (T2-Ath7)

We can see that innovation and change are more complex in the Saudi deaf education context and that the teacher's role needs to be strengthened.

8.3.2 Self-reflection

Two months after the intervention began, two of the teachers (Abrar and Rugaia) began speaking positively about their experience of adopting the SBE.

I've discovered that its implementation has benefits not only for my pupils but also for the Deaf assistant and me personally as a teacher. (D-Abr9)

Three of the teachers (Rugaia, Eklas and Abrar) recognised the positive dynamic relationship between teacher and pupil.

I've discovered that the problem in Deaf education is us [teachers] ourselves and in our wrong approach that we've used for years in our teaching of Deaf pupils. We are responsible for the academic level of our pupils, who are likely to be able to develop if we develop and change our teaching methods. (D-Abr10)

In this positive context, Mrs. Rugaia said: "Our girls can [academically] achieve but they need more effort from us [teachers]". (D-Rug10)

As a result of the intervention, some teachers reported a deeper self-analysis after the programme. This finding is an important one, as it made them think positively about what they would like to do next.

The Deaf pupils really changed my character. I became more calm and patient, I think deeper in my view of life. There are many things in life which became unworthy of my attention. I love my [own hearing] children more and enjoy my moments with them. There are things in life that I didn't know the value of until I saw that they are missing from Deaf people's lives. (T2-Abr11)

As a positive result of the intervention, Mrs. Rugaia said:

We teachers need continuous signing training across the whole year. We also need compulsory courses regarding everything new in the field of special education to develop themselves, such as how to deal with Deaf pupils. We need official theoretical training for two days in the Ministry of Education [i.e., the administration office in the city] and non-official practical training for three days in school. (T2-Rug11)

She added

My conscience started tormenting me and I'm seriously thinking about leaving my job in teaching Deaf pupils, especially when I feel that I'm not doing my duty and that I'm earning money I don't deserve, as when I explain to the pupils and there's no reaction from them. Whatever you do with them you reach the burnout level. Although I feel the pupils' love towards me, that feeling kills me and is painful as I cannot deliver the information to them. (T2-Rug12)

Deaf assistants also thought of having a positive impact on improving professionalism.

Through working with the teachers in one class, I could learn thinking, connecting things together in knowledge, and patience [...] We collaborated to teach the pupils, and [I had] changes in my job in terms of Deaf pupils and adults allowed to be together in one place. In the past, I only saw Deaf pupils in the corridor and the field [...] I wish to learn new things, how to teach – explain, do something new to improve [myself] mentally and intellectually. I want to learn what is set and achieved by the teacher and what is not. I want to attend courses in administration and in education like hearing teachers and obtain certificates. (T2-Lam5)

We can see the significant impact on both teachers and Deaf assistants of practical engagement with SBE and co-teaching. Despite their reluctance in applying the programme (which might also occur with future programmes), this programme increased the teachers' professionalism and allowed them to reflect on themselves.

8.4 Teachers' concepts of reading (the issue of language/Arabic literacy)

Before beginning the intervention, the teachers raised the issue of speech and dialect:

We do have the problem of Arabic. Some words have more than one meaning. I speak in my dialect and the curriculum was written

in a different dialect. How can I teach using these two dialects? We [teachers] and supervisors couldn't solve this problem. We have a problem with variation in vocabulary, with words such as basket, garbage, dirt, rubbish, bin. We try to teach them to the pupils in colloquial language to help them understand [...] Each pupil was given words and their synonyms; for example, "trash can" is in the book, but one pupil didn't know what it is. Although the pupil tried to read it, she didn't understand it, so I needed to give her all the synonyms. (T1-Abr12)

Rather than teaching reading, the teachers had been trying to teach a list of words, and not explaining their meaning or working on grammar. The concern about synonyms seems misplaced, as sign language also has synonyms. However, if pupils had no prior training in sign language or contact with Deaf adults, then their knowledge of sign language would have been limited. What the teacher described was simply an oralist monolingual approach.

We have confirmation of the negative conflation of speech, language and reading in other statements about reading.

Reading means that pupils must be able to pronounce letters and words to read the entire sentence [...]. They must read with correct Arabic grammar. (T1-Rug13)

In reading lessons, I used to teach the pupils new vocabulary but not sentences. I selected the important and new vocabulary from the reading texts, wrote these words one by one on the board, read them aloud, then made the pupils pronounce them and give their signs. (T1-Abr13)

Their view of reading was that it was a limited verbal decoding – not reading with comprehension. Mrs. Eklas surprisingly asked the researcher:

What do you mean about reading? Do you mean reading by pronunciation or reading by producing fingerspelling for the words or description? (T1-Ekl9)

Even after completion of the programme, Mrs. Athar, Mrs. Rugaia and one of the administrators still negatively thought of reading only as speaking aloud from text, rather than as having anything to do with comprehension. However, Mrs. Abrar at least positively showed insight at the end of the programme:

I've realised that reading is not just about shouting and screaming or simply teaching words; it is more about understanding and comprehension. (T2-Abr14)

Consistent with this positive insight, Mrs. Abrar said:

Before the programme, I used to teach the pupils words only, but they couldn't create sentences. However, now they have become more knowledgeable in acquisition of new terms and reading sentences, not just words. Their reading is better than the average for the pupils I usually teach. (D-Abr15)

Mrs. Athar, despite her lack of understanding of the reading process, also positively reported:

On a scale of 1 to 10 my pupils' reading level has developed by 7. Some pupils were able to employ different words, use them in simple sentences and match words with pictures. My pupils could read words and short sentences through sign but not speech, which is something they never did before. (D-Ath8)

At the end of the intervention, two of the teachers believed that SBE had helped to increase the pupils' literacy awareness and they had started raising questions in sign language. Mrs. Asmahan positively observed:

The sign bilingual approach has improved the pupils' reading level. They started checking the words in the texts, asking for an explanation of their meaning and their sign equivalents. They became more inquisitive when I showed them a text. In the past, they didn't care whether they understood the text, its idea and the words or not. (T2-Asm5)

We can see a change in the teachers' concept of reading through the focus on PVR with SBE and alongside a Deaf sign language user. This change of view may have to come through experience rather than be taught as theory.

8.5 Sign language

8.5.1 Communication in the reading classes

Before the start of the intervention, in the reading classes, the teachers used colloquial Arabic (sometimes mixed with MSA) and/or SSA while reading texts or interacting, whereas MSA was used in written texts. The teachers stated that using these methods enabled Deaf pupils to access other subjects in the Deaf school curriculum. For example, some teachers would begin by introducing their lessons in spoken colloquial Arabic, then used Sign-supported Arabic to present and conclude the lessons. However, according to the teachers, 18⁷⁷ of the participating pupils used signing all the time when participating in lessons and communicating with their peers; none of the pupils used spoken language all of the time.

The pupils in the school sat at separate desks, were expected to be quiet and respectful to the teacher and were not allowed to interact unless invited by the teacher. All of the teachers stood in the front of the class, delivered the information in a very direct way to the pupils and rarely asked questions or encouraged the pupils to interact. Most of the teachers' instructions were limited to 'read...', 'write...', 'say...' and 'copy the words or sentences from the board'.

Deaf pupils did not expect to ask questions; they did not expect to interact with each other in lessons. Not all of the Deaf pupils understood what was going in class. If a Deaf pupil did not understand what her teacher had said, she usually asked the classmate sitting next to her, in sign language under the table, to explain to her what the teacher had said. Two teachers repeated the information in a different way to make sure that the pupils understood the lesson. However, three teachers paid no attention to pupils who did not understand.

⁷⁷ Eighteen out of the 22 pupils at the start of the research.

Pupils often did not understand their teachers. This was also clear to their mothers; one stated that her older daughter had complained:

My teacher told me to get out my [x] book but I couldn't understand her and I forgot what she meant when she said [x] book. Why does the teacher shout at me? [...] I don't even know the name of my teacher!

During the reading lessons, there was conflict between written and spoken Arabic. As described in Chapter 2, the teachers mostly used spoken colloquial Arabic, sometimes mixed with MSA, in their communication with Deaf pupils. MSA was used exclusively in the reading curriculum. Teachers read those classical words in the texts which differed from the equivalents in colloquial Arabic, then asked the pupils for the synonyms of these words in daily life. This maybe an issue for hearing pupils' learning, but even more so for Deaf pupils.

8.5.2 Communication in the playground and at break time

Before beginning the intervention, the pupils mostly used SaudiSL with some ArabicSL in the playground during break time.

On one occasion, when the pupils were having breakfast and playing, Laila, Grade 2, suddenly started signing in ArabicSL to her friends: 'I've got to go to my next class; : "I've got to go to my next class; I've got a test". Safia, Grade 5, looked confusedly at Laila and asked in SaudiSL: "What? What?" Safia repeated the sign TEST and asked Laila in SaudiSL: "What teacher? What do you mean?" Laila repeated TEST twice and in ArabicSL said: "I've got a test [...] Don't you know 'TEST'?" During this interchange, Nawal, Grade 5, intervened to explain that the sign TEST had meant 'teacher' in the past.

Those pupils with older Deaf sisters or brothers used SaudiSL in addition to ArabicSL, as did pupils in higher grades. Nawal, for example, has a Deaf sister and a Deaf brother at university, which may have contributed to her use of both ArabicSL and SaudiSL.

8.5.3 Communication in the morning assembly

Before starting the intervention, SaudiSL and Arabic (spoken and written) were used separately in the morning assembly,⁷⁸ where all primary, secondary and high school Deaf pupils were required to observe the activities. An example is of Mrs. Aseel (a nonparticipating hearing teacher), offering some verses from the Quran, which she read from a prepared paper; however, she sometimes moved on to talk about other matters that seemed not to be in the transcript. Next to the teacher, a senior Deaf girl (aged 17) translated into SaudiSL but could only follow the written text. The Deaf pupils did not attend to either the teacher or the senior girl, although both were on stage. Because most of the pupils did not look at the senior girl, Mrs. Karema (non participating teacher) walked between the pupils and asked them to keep silent and concentrate on the senior girl. However, once Mrs. Karema had returned to her place, the pupils returned to signing to each other. Most of the pupils did not seem to understand what was happening in assemblies.

This scenario was repeated daily during the intervention.

8.5.4 Communication in school meetings

Although the Head Teacher highlighted the importance of Deaf staff attending school meetings before the beginning of the research, there were no official interpreters; communication between hearing and Deaf staff was through Arabic (spoken and written) and SSA in the first group discussion. The Deaf staff negatively reported that hearing staff did not sign to them. This was the case in the first two group discussions with the participating staff, where a hearing colleague volunteered to interpret for the Deaf staff.

We look stupid, because sometimes we don't understand what hearing staff are saying, but we sometimes join because attendance is compulsory. We're reluctant to ask our hearing colleagues to interpret for us in sign, because we don't want to bother them. (D-Man8).

⁷⁸Morning assembly is the activity in all Saudi schools that provides a context for pupils to demonstrate their language skills and talents. It is implemented when pupils arrive at school: they stand in the school courtyard, listening to and/or watching the participants on the stage.

8.5.5 Issues of language form and dialect from the teachers' viewpoint

Before starting the intervention, the teachers did not believe that sign language was a full language which should be fully understood in order to apply the SBE approach. There was a conflict between ArabicSL, which is the teachers "own", and natural sign language (i.e. SaudiSL), which Deaf people "own".

The Deaf assistant uses the old signs [SaudiSL], but we [teachers] use the new signs [ArabicSL] with the pupils. Because the assistant lacks the new signs, she teaches the pupils the wrong way. She must be trained to use the new signs. (T1-Ath9)

This negative assessment of the Deaf assistant could still be seen after the intervention

This year, I continued using the sign bilingual approach on my own. I didn't want to work with Mrs. [Lama, Deaf assistant] as she used the old signs and that made it confusing for the pupils. (T2-Rug14)

As a positive result; however, Mrs. Asmahan did adopt SaudiSL:

I'm using the old signs with my girls because it's difficult for me to use the new signs as they don't like it. They find it difficult and they use the old signs [SaudiSL]. (T2-Asm6)

The views also include the belief that there is a difference between the signing speed of hearing and Deaf staff, with the Deaf staff signing faster than hearing staff, and that pupils lack familiarity with the Deaf assistant's signs.

Mrs Eklas argued:

Although the Deaf assistant's sign proficiency is better than mine, some pupils became confused if she explained something to them. They looked at me, showing that they didn't understand what the assistant had said. For example, [Wala, pupil] asked me "What did she [the Deaf assistant] say?" I felt that because the pupils are young, they are used to depending on me, my signs, my way of teaching. (D-Ekl10)

This problem appeared to occur when the teacher asked the Deaf assistant to read from the board and translate in sign to the pupils using the same structure as Arabic, i.e. to use sign-supported Arabic. Not surprisingly, some confusion arose.

Deaf assistants were aware of this problem:

There are pupils who use different signs in the lesson, but outside the lesson they use the same signs as I do with no difference. I use the old signs. We as Deaf administrators communicate with signs. This is why when you enter the classes with the teachers you'll see their signs are different to ours and a few teachers don't know signing. (D-Lam6)

Both Deaf assistants often offered comments on the teachers' sign language.

Mrs. Manal suggested a difference in use of signs:

Most of the new teachers use the new signs [ArabicSL] but the senior teachers use old signs [SaudiSL] because they've been in the school for a long time. (T2-Man7)

We can see the additional layer of complexity for SBE implementation in the context of the use within the school of both the artificial Arabic sign language and natural SaudiSL.

SaudiSL was used as the natural language of Deaf staff and Deaf pupils, while ArabicSL was used by the hearing teachers.

8.5.6 Sign language competence of pupils

In the interview at the end of the intervention, Mrs. Lama (Deaf assistant) was concerned with the low level of the Deaf girls' sign language and the lack of communication between families and their Deaf children.

There were pupils whose signs are very good and they tried to pick up new signs quickly, but there were some pupils whose signs were weak because there was no one in their home who understood signing. These girls are like a blank page. Those Grade 2 pupils use different signs in the classroom from those who use it outside the classroom. Usually the teachers teach signs

from the sign dictionary. The pupils are taught different signs from those that they use at home. (T2-Lam7)

These are not surprising comments as we can find them in many countries (such as the UK (Heineman-Gosschalk and Webster, 2003) and the USA (Andrews and Rusher, 2010); where signing has been partially introduced and where there is limited research or knowledge about the importance of early sign acquisition (Humphries et. al., 2014; Clark et al., 2016).

Generally, we can see that the attitude of both Deaf and hearing participants towards the nature and potential of sign language use was not fully developed.

8.6 Power and roles

The theme of power and roles refers to how much the teachers were prepared to allow the Deaf assistants to share in teaching and the extent to which each of them (teachers and assistants) saw themselves as the person responsible for making decisions. It is apparent from earlier sections that hearing teachers tended to view Deaf assistants as insufficiently trained to take on any responsibility. However, teachers positively said that they shared their goals and some were prepared to respond to suggestions made by the Deaf assistants:

Before the reading lesson, I used to sit with the Deaf assistant and discuss the reading text and the pictures. I explained to her what the aim of the lesson was, then she gave examples and suggested important points to help the pupils to understand. However, later we began to understand each other's ways. (D-Abr16)

At the same time, there was a lack of role sharing between the teachers and the Deaf assistants. This was commented on by Mrs. Athar:

At the beginning of the intervention, I used to explain everything to the Deaf assistant either the day before the lesson or just before the lesson. However, later it was hard to explain everything to her every day, because the explanation process took time and sometimes the Deaf assistant arrived at school late. (T2-Ath10)

The Deaf assistants also had differing experiences of role sharing. Mrs. Manal positively reported:

Mrs Abrar and I used to work together. We sat with each other before the literacy or religion lesson and she explained to me what the lesson would be about and we discussed how we could explain the ideas in the reading the lesson to the pupils. I also gave her examples that we could use in the lesson. (D-Man9)

However, Mrs. Lama commented that there was little role sharing because the teacher retained the leading role in the classroom.

When the teachers explained the reading texts before the lesson, I could understand their explanation. However, in the classroom, I faced some difficulties. For example, I couldn't understand everything the teacher said, because her signs were different from mine! When I couldn't understand her, I didn't tell her that because it was her choice to pick the teaching method. Sometimes the pupils didn't understand the teachers because their signs were different, but I didn't say that to the teacher. (T2-Lam8)

Power remains an overarching theme in research such as this. Teachers have qualifications and are approved by the authorities; Deaf people have communication skills but no real status in the class.

8.7 Social relations and confidence

One unexpected theme emerged from the interviews. Three teachers commented that discussing and co-working with the Deaf assistant allowed the enhancement of a natural relationship between the Deaf assistant and the Deaf pupils, which enabled pupils to ask more questions during the lessons. The teachers believed that although interaction with the Deaf assistant was less formal, it was more fluent.

Mrs. Asmahan positively remarked,

The pupils loved the Deaf teacher and interacted with her as she used to explain stories and give examples from the past which the pupils knew, or of something that happened on television that they

knew about and so on [...] The pupils became more able to discuss facts about the Righteous Caliphs, their names, and their relationship with the Prophet Mohammed, and they engaged in discussing the Caliphs' personalities and characteristics through stories. (D-Asm7)

One of the Deaf assistants also commented on the positive effect that interaction with the Deaf pupils had had on the social relationship between them:

When I was doing administration work, I didn't have a chance to meet the primary pupils. I only saw them in the corridor. However, when I started the programme, I was able to communicate with them. When they had free time, I would enter their class and talk with them. (T2-Lam9)

This finding was unexpected for us because the teachers had believed that the Deaf assistants' sign language was different from the pupils' sign language.

Mrs. Athar (teacher) positively commented on increased "interaction among the Deaf pupils themselves". (D-Ath11). The changed interaction styles in the SBE programme may have been the cause of this.

8.8 Summary of the factors affecting SBE implementation

This chapter has presented an analysis of teachers' and Deaf assistants' views, as expressed in individual interviews and group discussions conducted before, during and after the intervention.

Four main themes were identified relating to the experience of the intervention: attitudes and attitude change; professionalism (and capacity for change); concepts about reading; and sign language itself. Interwoven with these are issues relating to power in terms of role and training. In these interviews, we see the lack of research and knowledge about sign language (for both Deaf and hearing participants) as a major issue for future development. There is a great deal of work to be done within the education system for both Deaf and hearing people, to establish a more accurate view of the nature and potential for sign language use. This will need changes in the status of Deaf people and their

language in Deaf education and parallel revisions to teacher (and assistant) training.

A variety of additional themes were identified during the Deaf assistants' interviews: They stressed the significance of the intervention, which allowed them to become aware of the importance of improving professionalism and to develop their views about the status of sign language, the teachers' competence and their sense of relative status.

These findings will be interpreted in the concluding chapter alongside the analysis of reading performance and process, in determining the effects of the PVR strategy and SBE implementation.

Chapter 9: Discussion and Conclusions

This dissertation set out to examine SBE with Deaf assistants and discover the complexity of developing a measure for reading Arabic. However, at the same time, there mostly positively. The study indicates potential for change in deaf education for the future.

Determining the effect of the preview view review (PVR) strategy implementation in a Saudi Deaf girls school proved to be more problematic than had been envisaged. Factors which are explored below meant that a simple deterministic analysis could not be carried out and although there are positive indications of the benefits, much more will need to be done to prepare and to support innovation in this Saudi educational setting.

9.1 Outcomes of the intervention

The study introduced the concept of Sign Bilingual Education (SBE) using a signed and spoken language, focusing on Deaf pupils' literacy in the 7-to-12-year age group. The results indicate positive benefits and improvement in reading performance. This can be seen in the context of the pupils who were non-readers at the start of the programme, moving into a position of being beginner readers.

In order to reach this point of analysis, a new ARMD pupils had to be devised and applied. In order to implement SBE, a Deaf person had to be introduced to the reading lessons.

9.1.1 A new Arabic Reading Measure for Deaf (ARMD)

The study found that there were no appropriate Arabic reading measurements for assessing reading progress for pupils; teachers had to create ad hoc rating scales to report on their pupils' reading achievement. However, although such ad hoc ratings could not be accurate, teachers still engineered high end-of-year ratings because they wished the girls to progress to the next class.

In the current research, therefore, I designed a new procedure for testing Arabic literacy in two forms: pre- and post- tests for assessing the participating pupils' reading levels before and after the intervention.

Prior to the main intervention, ARMD was piloted with both hearing (n=8) and Deaf (n=6) pupils from male and female primary schools. This was done in order to: a) practise the application of ARMD, b) eliminate problems in the procedure, c) check the suitability of ARMD for what aimed to assess (the reading achievement of the sample), d) ensure that ARMD would be understood by the children, e) check the order and the range of items in terms of the level of difficulty of each question, and (f) determine the amount of time required to complete it.

While the pilot study, ensured the validity of ARMD, I believe the procedure followed is a major development for the monitoring of reading achievement for Deaf pupils in Arabic. There is considerable potential for ARMD to be further developed and to be made available more widely.

9.1.2 Reading improvement

Comparison of pre- and post-intervention results, indicated improved reading performance of Deaf pupils during the period of use of SBE. This finding confirms the claims of Al-Rayes and Al-Awad (2013) and Fayyad (2008) on the use of SBE for reading skills with Deaf pupils. However, their quantitative studies differ from the present project, which adopted the mixed-methods approach of an ethnographic and quasi-experimental study and which also involved Deaf people, for the first time in Saudi Arabia, co-teaching with hearing teachers in reading lessons and serving as signing models for both teachers and Deaf pupils. My results are also consistent with the literature reviewed in Chapter 1 in particular, the empirical studies on signing/spoken bilingual education such as that of DeLana, Gentry and Andrews (2007). Hermans, Ormel and Knoors (2010) report similar improvements for Deaf pupils (who used the sign language of the Netherlands and spoken Dutch) in their expressive vocabulary understanding and morpho-syntactic skills.

Although most of the teachers did not reach the language competence level which allows them to analyse the relationship between sign language and written Arabic/reading comprehension, three teachers began to compare their

pupils' literacy performance in the SBE approach with other strategies and realized how the pupils' behaviour towards reading had changed positively.

9.1.3 Reading strategies

Some differences in individual reading performances were revealed, which supported the need to use sign language with Deaf learners to discuss meanings in reading passages and words. A similar relationship between using sign language as an L1 and reading ability has been found studies of Deaf pupils by Evans (2004) and Novogrodsky et al. (2014).

My study found that a mix of reading strategies (e.g., fingerspelling, sign language, spoken Arabic and eye gaze) were used by some of the pupils during reading but without significant gain in performance.

It is perhaps not surprising that no consistent reading strategies were introduced, as this was not discussed with the teachers and it appears that there is no unified approach in regard to the Arabic curriculum.

Various reading behaviours were observed during ARMD. Such behaviours might affect reading performance. Most of the pupils showed signs of confusion between reading and writing in answering ARMD questions. They were often happier to answer by signing instead of reading then writing their answers.

The format of ARMD was a further challenge for the pupils; indeed, they seemed to see the posters as images with no message; they were shocked by the length of the passages (although they were summarised); they struggled to write their answers and or choose the appropriate words to complete the sentences. Most of the pupils used signing to describe the images or the posters, but then said that they could neither read nor understand the written words. Other pupils attempted to read the passage, or read every word in it based on the images or on the title. This might be related to the fact that in class they often copied from the board, without knowing the meaning.

LaSasso (1999) found that the reading comprehension of Deaf pupils breaks down because of the test format, language, teachers' purpose of reading, code and content. LaSasso suggests that Deaf pupils should be informed in advance

about the test format and its purpose. Teachers' questions should be clear when explaining the performance requirements of the test.

Another strategy I often observed with the Deaf pupils was "spot the familiar word" to build the meaning of the sentence. Carter, James and Lansdown (2002) also identified this as one of the challenges facing Deaf pupils in reading and writing English within the English National Curriculum Key Stages.

Another issue was related to errors in grammar, which is a problem that faces many second language learners. Dualisation and reduplication presented a major issue for Deaf pupils who were unable to differentiate between the use of singular or plural words. This is due to the teachers' transliteration of Arabic to individual signs which increased the pupils' confusion. This result is in line with the results reported by Hendriks (2008; 2009) and Nagawah (2015).

Eye gaze was random for some pupils, who looked at words everywhere on the ARMD sheet instead of following the words in each sentence. A study of eye gaze in Deaf beginning readers of Arabic might be of interest in shedding light on the difficulties faced by the pupils.

It seems clear that Deaf pupils' concepts of text are different from those expected of hearing pupils.

9.2 Major factors affecting the implementation

Nevertheless, the initial research question could not be answered precisely, due to difficulties in precise implementation of the PVR strategy; many factors were found to interfere with the implementation of the SBE approach at the school and thus to hinder the necessary changes.

9.2.1 Availability and involvement of Deaf sign language assistants

In Chapter 6, we saw that problematic factors include the fact that the amount of time that most of the pupils spent with the Deaf assistant was unexpectedly low.

This occurred because the school management deviated from the agreement and used the Deaf assistants in administration tasks. Managers saw Deaf assistants as lower status workers and did not fully accept their involvement in the classroom or their co-working with hearing teachers.

This situation contrasts with that reported by McKee (2003) in New Zealand where Deaf assistants were treated as key stakeholders in the education of Deaf pupils. There seems little doubt that this management issue will need to be addressed in Saudi Arabian schools if SBE is to progress.

9.2.2 Pupils' attendance

The variability of pupils' attendance was another factor that affected the intervention, as also reported by Mansi, Ahmad, and Demiaty (1990). Because of the conservative nature of Saudi society, women do not go out without a male relative, which makes transportation to school for single girls problematic.

At the same time, there remains some ambivalence on the importance of education for girls, which is amplified for those who are Deaf. This means that girls did not attend for what might appear to be trivial reasons. This occurred despite the provision of a payment to families for attendance at school. Al-Balwai (2015) found that group absences usually happen before and after the school holidays. The first of these was probably due to teachers telling the pupils not to attend (due to exam marking and so on) and the latter arose because school management created 'in-service' days to take time for preparation and not for teaching.

There were also issues regarding the accuracy of record-keeping on attendance and on pupil background, often leaving teachers with incomplete information on the pupils.

Poor attendance is a systemic issue in the current Deaf education system and in societal attitudes. Addressing it will require attitude change.

9.2.3 Hearing loss and reading

It is normally reported that extent of hearing loss is a predictor of reading performance. This study found that the pupils with mild to moderate hearing loss read better than those with a severe hearing loss. However, that conclusion for this study may need to be treated with caution, as the audiogram tests for the pupils were done in different hospitals and in different years (2008-2012).

9.2.4 Effect of Deaf sign language assistants in class

In analysing the participants' interviews (Chapter 8), participating teachers and pupils expressed positive attitudes towards the presence of Deaf people in the classroom.

Teachers reported that Deaf assistants were able to deliver information more effectively than the teachers. One teacher referred to the Deaf assistant as the 'Deaf teacher'. Three teachers noted the pupils' literacy progress.

Pupils reported that they engaged with the Deaf assistant in the classroom and there was some improvement in their signing skills. McKee (2005) also reported that the use of Deaf para-professional staff in bilingual schools was a key factor in the success of the approach, because it allowed visually communicating pupils to model good cultural and language practice (Kyle, 2001). However, two teachers maintained that there was confusion for the pupils because of the differences in the signs used by the pupils and the Deaf assistant; they also argued that the Deaf assistants should learn "standard" sign language (despite the fact that Deaf assistants were already Saudi Sign Language (SaudiSL) users).

Interestingly, co-teaching with Deaf assistants prompted the teachers to reflect on their own professional lives and their teaching methodologies. It seems also to have helped them to become aware of the Deaf assistants' bilingual strategies.

9.3 Unexpected Outcomes

9.3.1 Understanding 'research'

Evidence-led practice is not common in Saudi Deaf education. The concept of research and published findings leading to changes in teaching practice is not common in schools. Ideas brought by the researcher from the West were not necessarily immediately embraced. However, among the participants, there was increased awareness of the value of academic research. Two teachers in particular began to think about the new researcher's role in the school.

9.3.2 Pressures of ‘school culture’

It also appears that the teachers were influenced by ‘school culture’ particularly leadership. They were reluctant to engage with the intervention unless it was authorised from above the school level. An additional factor was that school-level administration tended to contradict the principles of the programme, by insisting that teachers use voice.

9.3.3 Enhancing social relationships between Deaf assistants and pupils

Opening up the possibility of sign communication improved social interaction between pupils and Deaf assistants, and teachers began to recognise this enhanced interaction. Smith and Ramsey (2004) also found that having an experienced Deaf teacher who used ASL discourse to teach reading and writing skills to grade five pupils was a factor that allowed the extension of the pupils’ interactions.

Another good example of Deaf art and history is story-telling, which Deaf people used to develop their understanding in life. Two of the teachers found that the Deaf assistants told stories from the past and the Deaf pupils responded well to them.

9.3.4 Roles, power and Deaf assistants

In the observations, Deaf assistants performed well. Indeed, a number of the teachers commented on how effective their contributions were. However, they also offered the view that Deaf people needed further training. This was a way of protecting the teacher’s established role and keeping the power with the teacher.

Deaf people in Saudi Arabia are allowed to work in school administration but are seldom given the chance of an educational role or even access to training. However, as DeLana, Gentry and Andrews (2007) point out, it is development training is needed for both Deaf and hearing staff in order to create a culturally friendly and supportive school environment.

It is clear from the observations that the Deaf assistants were also a cultural and linguistic resource for Deaf pupils.

9.4 A new model of Arabic literacy teaching for Deaf pupils

9.4.1 Early identification and intervention

An SBE programme is applicable from infancy but the lack of a pre-school programme in Saudi Arabia, limits its implementation and almost certainly affects later performance in school.

An effective programme for early intervention might include:

- a)** Sign Language training courses for all family members, teachers and Deaf infants to learn sign language as early as possible.
- b)** Counselling programmes to support parents (individually and in-groups) in introducing Sign language in the context of Islamic instructions and Saudi culture.
- c)** Family interaction to support Deaf children and early childhood education.
- d)** Suitable monitoring programmes for language development in Arabic and sign language.
- e)** Reading preparation.
- f)** Contact and programmes with the Deaf community

From the research, it can be seen that most (if not all) Deaf pupils came to school without speech or literacy. Based on the study explained above, a new model of Arabic literacy teaching for Deaf pupils in Saudi Arabia can now be proposed.

9.4.2 Working towards the new model

Perhaps the simplest conclusion to be drawn from the research work, is that Saudi Deaf education remains in a phase of development and evolution and that this applies to teacher training, curriculum development, school implementation and social views. The conclusions are further affected by the early stages of research on SaudiSL and by complications in the different language choices for speaking and writing. Perhaps the most significant point is that educational practice is not evidence-led, nor is the practice of research widely followed in education.

Gender issues in society further complicate matters for women teachers as well as female pupils and potentially lead to separate versions of male and female sign language.

Given these circumstances (which are, in any case, common in Arabic-speaking countries), we can see that the contribution to knowledge of the dissertation relates as much to description of the social and educational circumstances as to the actual intervention. A simple deterministic conclusion is not feasible, i.e. the question “Does PVR in an SBE approach significantly improve reading achievement in Deaf girls” has produced the answer, “Yes, but several other conditions need to be met”. In terms of implications, the research has shown the need for the following:

- a)** A valid definition of Arabic literacy and the creation of a measurement tool to determine progress and expectation of success;
- b)** A clear model for the purpose and delivery of the SBE approach (for Arabic) presentable to educators along with a model for its support;
- c)** Understanding of the role of sign language for learning and then as a bridge to literacy in Arabic;
- d)** Involvement of bilingual educators (SaudiSL and Modern supported Arabic (MSA) – as well as vernacular Arabic) or in the interim, hearing teachers and Deaf sign language assistants;
- e)** Effective analysis of the stages through which literacy in Arabic progresses and how these can be adapted for Deaf pupils.

Many of the girls involved in the study were not reading, in the sense of extracting meaning from text. The intervention made a difference and brought a number of these to a beginner stage of reading. However, to make a real difference the study would need to be extended over a number of years and to take into account the factors above.

9.5 Recommendations arising from the study

9.5.1 Involvement of proficient Deaf and hearing signers

- a)** The SBE programme should be led by fluent sign bilingual hearing teachers and staff who work with Deaf learners, i.e. skilled in both sign language and MSA.
- b)** For many educators, this may mean that they should take intensive systematic training courses in Sign Language and have contact with the Deaf community.
- c)** This may in turn require the Saudi universities which are responsible for training teachers of Deaf learners to employ Deaf sign language teachers.
- d)** Deaf co-workers as assistants and class teachers would establish the validity of sign language in school by classroom-based research.
- e)** Opportunities for Deaf people to train as teachers would make a significant difference as it would allow Deaf people to begin to analyse the steps needed to improve literacy in pupils.
- f)** The Deaf assistants in the current research did not have enough access to MSA when they were studying at school. Deaf signers who will be involved in SBE programmes should be prepared to be good models for teaching Arabic to Deaf pupils.
- g)** Co-teaching should be set up and delivered through team teaching as a co-teaching strategy, which includes:
 - Power-sharing by Deaf and hearing teachers in classroom, which would include teaching planning, delivering instructional content, assessing the pupils' improvement; the assignment of grades and attending staff workshops and mothers' meetings.
 - Taking advantage of the strengths and experience of each member of the team; these include the hearing teacher's knowledge of Arabic and their hearing abilities, which can be used to deliver the information they hear to the Deaf teacher, and the Deaf teachers' ability to be a model of visual sign language

communication for both the pupils and the hearing teachers in addition to their ability to attract the pupils' attention. It is essential to find a balance between sign and written communication, avoiding repetition and too much talk.

- The professional relationship between the team members should be built on communication, equality, understanding, trust and respecting each other's abilities, in order to provide all pupils with access to their languages, social identities and cultures. For example, the Deaf teacher should notify and involve the hearing teachers, the pupils and their parents about activities in the Deaf community.
- The time needed for planning lessons in an SBE programme is considerable; therefore, the team must be completely focused on the implementation of the SBE programme and not be involved with any other academic or administration work.
- The school administration should aim for the professional development of both Deaf and hearing teachers, which could enhance their co-teaching abilities.

9.5.2 Development of Sign Language materials and resources

- a) New visual and printed Arabic materials need to be designed to suit Deaf learners' educational needs and abilities. These would include video and print stories, and video recordings for sign language training focussed on pupils and their parents. This could be done by supporting Deaf male signers to create sign language materials and enrich the school library with such materials. Considering the Islamic rules and Saudi traditions against photographing women, we suggest that the Deaf female teacher could video-record herself to create such materials and keep them secure after presenting them to the pupils.
- b) Deaf pupils should have to learn sign language before starting school.
- c) Teachers can use the PVR technique in teaching reading to help Deaf pupils gain background knowledge before accessing the details.

9.5.3 Content of PVR development training for team teaching

- a) Deaf people should be involved in PVR development training, alongside the official trainers from established institutions.
- b) Course attendance should be mandatory, although some financial incentives may be offered.
- c) The programme should provide the opportunity to discuss and reflect upon participants' own language teaching practices and beliefs concerning Deaf culture, language use, teaching and learning, L1 and L2 acquisition, Sign Language and Arabic and the relationship between them, PVR, classroom arrangement in PVR lessons, the use of Sign Language and the adaptation of texts within the reading curriculum to make them suitable for Deaf pupils.
- d) The second stage of the training programme would build on the first part.
- e) There should be well-planned use of the PVR strategy in reading lessons by the co-teaching of both team members
- f) The team should connect, not repeat, the concepts in the three stages of the PVR strategy, thus avoiding simultaneous translation.
- g) Activities and tools (e.g., physical objects, written texts and visuals) should be incorporated at every stage of the PVR strategy, as suggested by Freeman and Johnson (2005).

9.5.4 Applying PVR with Deaf pupils in reading classes

The PVR strategy offers an educational framework for transmitting content concepts to students in order to build on their existing linguistic strengths and repertoires by supporting repertoires through supporting their development.

The three stages of the Deaf PVR strategy are as follows:

At the **preview stage**, it is important that a Deaf native user of Sign Language should introduce the key new vocabulary and concepts related to the topic (e.g. gardening). The Deaf assistant should build on the sign language of the Deaf pupils to project meaning on to the topic.

At the **view stage**, once the pupils clearly understand the content and can demonstrate this in Sign Language, a hearing teacher could present images from the reading curriculum to illustrate various aspects of gardening or use the Internet to show various types of gardens. At this stage, the pupils learn vocabulary in Arabic (e.g. flowers, butterflies, trees, palm, picnicking).

At the **review stage**, the Deaf teacher checks the pupils' understanding by discussing what they have learned in sign language, then the hearing teacher asks the pupils to draw a garden, followed by writing on the board in Arabic what the pupils have expressed in their drawings.

These suggested developments arise from the research and especially from the observational data. While focused mainly on practical implementation, they are necessary if we are to be able to monitor progress in future research work.

9.6 Strengths of the study

The study can be shown to have several significant strengths.

9.6.1 Innovative method implemented and measured systematically

For the first time, this study has brought in a new teaching approach and supported it by systematic research. While this may be a common feature of education in Western countries, it has not been applied in Arabic countries. Not surprisingly, the obstacles faced in the implementation provide us with new insights into the interaction of Saudi language and culture and this work in a Deaf school.

9.6.2 Data Triangulation

Triangulation was built into the research method, which focused on teachers' views, Deaf assistants' views and independent observations of the functioning of the SBE programme. This approach has not been applied in Saudi Deaf education before.

9.6.3 Research framework using multiple methods

The mixed-methods approach, involving an ethnographic methodology and a quasi-experimental study, is new for this area of study in Saudi Arabia. It is an approach which can be applied to other areas of education research.

9.6.4 Innovative use of Deaf assistants in class

For the first time in Saudi Arabia, Deaf assistants and hearing teachers collaborated in the educational process in one classroom. This advances the field of Deaf education by establishing a Deaf role in Deaf education and ultimately creating pathway to Deaf ownership of education.

9.7 Limitations of the study

There are some limitations of this study which need to be considered.

9.7.1 The small sample

The current study involved a small number of Deaf assistants. This limitation should not be seen as compromising the success of the research, but as a reflecting on the conditions which had to be faced.

9.7.2 Limitations on generalizability

Generalizability is the ideal for a research study, where results from a specific context and from a particular sample can be applied to larger population groups (Carter and Hurtado, 2007). This research was carried out at a single school for Deaf girls in an urban area in western Saudi Arabia with Deaf girls, female teachers and Deaf assistants. However, there was nothing special about the particular city, the school or the pupils, as cultural factors of the pattern such as the pattern of school attendance are approximately the same in all Deaf schools in Saudi Arabia. The contention is that although the findings may not apply to other Arabic-language countries, they are likely to apply throughout Saudi Arabia. The results will be of value to individual Deaf schools, their pupils and hearing and Deaf staff in other regions of Saudi Arabia.

9.7.3 Insufficient training in SBE for teachers

Face-to-face training in a bilingual/bicultural approach was difficult because of the distance between the researcher and the teachers. The approach was reinforced during three visits and in sessions held at the school, but for much of the duration of the intervention the researcher was in contact with the teachers only by email and text messaging. In future research, work the change agent should be present at the school.

9.7.4 Professionalism and commitment

It emerged from this research that there were important limits to teachers' exercise of their duties as educators and to their perception of their role in the pupils' education. They saw themselves as having to deliver the curriculum, instead of being educators in the sense of maximising the potential of individual pupils. It is likely that more extensive pre training would counteract this weakness in commitment.

9.7.5 Limitations of personal data records

Record-keeping in school was not adequate to meet the requirements of the study and a different form had to be adapted from an English one. The limitations of the records kept means that teachers may not be as informed and prepared as one would hope for.

9.8 Suggestions for further research

The current research has been exploratory in its nature, attempting to contribute to sign bilingualism research as a new idea in the context of Deaf education in Saudi Arabia. Further research is needed to examine the effect of the PVR strategy in reading progress.

9.8.1 A better controlled study

More controls should be added to similar research studies in the future. The control group must be selected to have very similar factors such as sex, age, IQ, the degree of hearing loss, the use of hearing aids or cochlear implants, hearing status of parents, time of diagnosis of deafness and so on, to ensure that controls are similar to members of the experimental group.

9.8.2 More support for co-teaching staff

Research is needed in the important areas of systematic training support programmes in a bilingual/bicultural strategy for hearing and Deaf teachers and in learning SaudiSL for teachers and staff who work with Deaf pupils.

9.8.3 Better materials

The materials used in future work should be in both Arabic and Sign Language and should be varied in content and style. For example, researchers could design sign stories and video-record them to teach Arabic to native Sign Language learners. Signs paired with the equivalent words, sentences or stories could be presented on a monitor and acquisition should be followed up with a series of tests, as in the current study.

9.8.4 Different interviews

The interviews could be done differently. The group discussions with teachers should be performed separately from the group discussions with administrative staff such as headteachers and supervisors, to give teachers the confidence to express their views freely. A Deaf professional researcher should be involved, especially where the lead researcher signs poorly or not at all, to make the research more accessible to Deaf participants and to allow the data to be interpreted from the perspective of Deaf cultural knowledge, as Young, Ackerman and Kyle (2002) suggest.

9.8.5 Measurement of competence in Sign and reading

In future research, fully national standardised tests are needed to measure progress in reading achievement and SaudiSL ability.

9.8.6 Different Saudi regions and schools

The current research was conducted in one school in western Saudi Arabia. Future work can be extended to other schools for Deaf pupils in other regions of Saudi Arabia. Variation in schools' educational policies and their attitudes towards Deaf people could impact experiences. Furthermore, male Deaf pupils and male teachers may have experiences differing from those reported here.

9.8.7 Longer period of study

The current research could be conducted again in the future but for a longer period of time. The researchers could observe, interview and test participants at intervals of a few months to follow the progress of a larger group of Deaf pupils from the ages of six to 12 years.

9.9 Reflections on the study

The intermittent contact with the researcher meant that the enthusiasm of Deaf assistants and hearing teachers for the application of the SBE programme was fragile and the impact of the intervention may have been reduced. There is, as suggested above, a need for an ever-present change agent. However, it is revealing that even when the researcher was on site, there were some reading lessons which were simply cancelled by some of the teachers and the Deaf assistants. This phenomenon is clearly illustrated by the words of two teachers, Mrs. Athar, then Mrs. Asmahan:

Sorry, I can't give the lesson today. As you can see, the computer is broken and it's getting late. (D-Ath10)

Sorry, I don't really feel like teaching today, so I'll just go into the classroom and give the girls something to do –answer exercises or something. (D-Asm8)

Another example is that on one day, the last two lessons for girls in all years were cancelled because of an administration meeting; more surprisingly, there were other days when classes were cancelled because all members of staff were celebrating personal events such as the retirement of a colleague.

It is clear that the expectations of professionalism and commitment to the pupils' learning is somewhat less than is desirable.

9.9.1 Home-school relations

It was apparent that relationships between the parents of Deaf pupils and the school were very superficial and limited to occasional parents' meetings, which were affected by the fact that transport restrictions prevented mothers from attending alone. There was also a lack of home-school programmes, which

meant that parents did not engage with their children's homework. A final factor was the variability in parents' education, with some having very low educational expectations for their daughters.

9.10 General conclusion

Reading Arabic is a challenge for Deaf pupils, because there has been no systematic programme of training in SaudiSL and almost no contact between Deaf schools and the Deaf community. To address this issue, this research project introduced the concept of SBE using signed and spoken language with a particular focus on literacy. The intervention did have an effect in raising the expectations of parents of Deaf pupils and of Deaf assistants, in regard to general performance, improving professionalism by both teachers and Deaf assistants, meeting linguistic needs and changing attitudes. There is also some evidence of real improvements in literacy.

It is expected that the research findings will provide a better understanding of Deaf pupils' academic and linguistic development and have an influence on the future of the Saudi Deaf education policy. Changes need to be made to achieve sign bilingualism in Saudi schools for Deaf pupils. These changes include innovation in sign language materials, improved general literacy materials, better preparation of Deaf assistants, access to sign language/ Deaf culture, teacher commitment, home-school cooperation, changes in social attitudes to (Deaf) girls and extended research on literacy performance centred on teacher engagement. Our findings are similar to those of Gregory (1996), who argues that SBE enables Deaf pupils to acquire linguistic skills satisfactorily and indeed makes it simpler to achieve good literacy skills, facilitates access to a wide curriculum, and helps the effortless integration of Deaf pupils into the hearing community.

The research identified major issues for headteachers in Saudi Arabia: they were concerned about providing transportation and school books for pupils, monitoring the attendance of staff and learners, delivering the curricula, staff and pupils' assessments and interest in extracurricular activities. However, they had not so far thought a great deal about sign language and Deaf culture when

they set up school policies; there was little information available to convince them on the importance of sign language in Deaf education, Arabic or of the importance of the involvement of Deaf staff. It remains a major challenge to begin SBE in Saudi Arabia.

This research study is important for this evolution. It is a first step in generating a Deaf and hearing friendly environment for communication among hearing and Deaf staff and the community. The final target of SBE is to increase the Deaf pupils' potential to take part in both the Deaf and hearing communities and in society at large. There is much in this research study which can inform this process.

References

English language references

- Akamatsu, T. & Stewart, D. A. (1998) Constructing Simultaneous Communication: The Contributions of Natural Sign Language, *Journal of Deaf Studies and Deaf Education*, vol. 3, no. 4, pp. 302-319
- Al-Bukhari, S. (810-870 AD) *Chapter: Should a day be fixed for women in order to teach them religion (apart from men)?* Vol. 1, book 3, hadith 101. Available from: <https://sunnah.com/bukhari/3> [Accessed: January 03, 2017].
- Al-Bukhari, S. (810-870 AD) *Chapter: Revelation.* Vol. 1, book 1, hadith 3. Available from: <https://sunnah.com/bukhari/1> [Accessed: February 13, 2017].
- Al-Hojailan, M. I. (2012) Thematic analysis: A critical review of its process and evaluation. *West East Journal of Social Sciences*, vol. 1, no. 1, pp. 39-47. Available from: <http://www.westeastinstitute.com/journals/wp-content/uploads/2013/02/4-Mohammed-Ibrahim-Alhojailan-Full-Paper-Thematic-Analysis-A-Critical-Review-Of-Its-Process-And-Evaluation.pdf> [Accessed: March 10, 2014].
- Allen, M. P. (1999) *Working group on communicating informed consent to individuals who are Deaf or hard-of-hearing.* National Institute on Deafness and Other Communication Disorders. Available from: <https://www.nidcd.nih.gov/workshops/communicating-informed-consent-individuals-who-are-deaf-hard-of-hearing/1999> [Accessed: March 5, 2014].
- Allen, T. E. (1994) *Who are the Deaf and hard-of-hearing students leaving high school and entering postsecondary education?* Washington, DC: Gallaudet University.
- Alosh, M. & Grandin-Gillette, M. (2012) *Modern Standard Arabic, Reading booklet.* Simon & Schuster Studios, Concord, MA. Available from: http://www.playaway.com/pimsleur/booklets/ArabicMS_Phase1-Bklt.pdf [Accessed: March 9, 2016].
- Al-Otaibi, K. A. (2011) *Investigating questioning strategies and assessment practices in primary school science classes: The response of the assessment reforms in Saudi Arabia.* (PhD Thesis). Faculty of Education, La Trobe University, Australia.
- Al-Qabani (2015) *Designing Reading Curriculum for Deaf Learners in Saudi Arabia* [Phone interview by N. Basonbul] Saudi Arabia 08November 2015.
- Anderson, M. R., Ingram, M.J. R., Buford, B. J., Rosli, R., Bledsoe, M. L. & Onwuegbuzie, A. J. (2012) Doctoral students' perceptions of characteristics of effective college teachers: A mixed analysis. *International Journal of Doctoral Studies*, vol. 7, pp.279-309.
- Andrade, A. D. (2009) Interpretive research aiming at theory building: Adopting and adapting the case study design. *The Qualitative Report*, vol. 14, no. 1,

References

- pp. 42-60. Available from: <http://www.nova.edu/ssss/QR/QR14-1/diaz-andrade.pdf> [Accessed: March 3, 2014].
- Andrews, J. (2010) Digital books and signing Deaf readers, *Journal for Deaf Educational Technology*, vol. 1, no. 1. Available from: <http://www.docstoc.com/docs/110382483/Digital-Books-Deaf-Readers-and-Signing> [Accessed: February 21, 2014].
- Andrews, J. & Nover, S. (2000) *Critical pedagogy in Deaf education: Teachers' reflections on creating a bilingual classroom for Deaf learners*. USDLC Star Schools Project Report no. 3. Gallaudet University. Available from: <https://saidnazulfiqar.files.wordpress.com/2008/04/abilingualisms.pdf> [Accessed: February 20, 2014].
- Andrews, J. I. S., Nover, S. & Everhart, V. S. (2001) *Critical pedagogy in Deaf education: Teachers' reflections on implementing ASL/English bilingual methodology and language assessment for Deaf learners. USDLC Star Schools Project Year 4 Report (2000-2001)*. Available from: <http://files.eric.ed.gov/fulltext/ED466079.pdf> [Accessed: October 04, 2016].
- Andrews, J. F. & Rusher, M. M. A. (2010) Codeswitching techniques: Evidence-based instructional practices for the ASL/English bilingual classroom. *American Annals of the Deaf*, vol. 155, no. 4, pp.407-424.
- Armstrong, D. F. (2014) 'Establishing a college for the Deaf, 1864–1910'. In D. F. Armstrong, *The History of Gallaudet University: 150 Years of a Deaf American Institution*, pp.1-35. Available from: <http://gupress.gallaudet.edu/excerpts/HOGU.pdf> [Accessed: February 15, 2017].
- Bachelor Studies (2017) *Find 12 Top Bachelor Programs in Saudi Arabia 2017*, available from: <https://www.bachelorstudies.com/Bachelor/Saudi-Arabia/> [Accessed: July 14, 2017].
- Baker, C. (2011) *Foundations of Bilingual education and bilingualism*, UK: Multilingual Matters.
- Baker, S. & Baker, K. (1997) *Educating children who are Deaf or hard of hearing: Bilingual-bicultural education*. Available from: <http://www.ericdigests.org/1998-2/children.htm> [Accessed: October 10, 2016].
- Basonbul, N. A. (2012) *A Comparative Study of Self-esteem among Severely Hearing-impaired, Hearing and Mildly Hearing-impaired Secondary Students in Saudi Arabia*, University of Nottingham, unpublished MA dissertation.
- Basonbul, N. A. (2013) 'Progress in Reading Arabic by Applying Sign Bilingual Methods', assignment submitted to Philosophy and Research Design in the Social Sciences Course, Unit Code (EDUCM0005), University of Bristol.
- Basonbul, N. A. (2013a) 'An Investigation into Teachers' Views on the Use of Sign Bilingual Education in Special Schools for the Deaf in Saudi Arabia', assignment submitted to Introduction to Qualitative Research Methods in the Social Sciences Course, Unit Code (EDUCM0004 IQUAL), University of Bristol.

References

- Baynton, D. C. (1995) "Savages and Deaf-mutes": Evolutionary Theory and the Campaign against Sign Language in the Nineteenth Century, *Journal for the Anthropological Study of Human Movement*, vol. 8, no. 4, pp.139-173. Available from: http://jashm.press.illinois.edu/8.4/8-4Savages_Baynton139-173.pdf [Accessed: January 5, 2014].
- Bellugi, U. & Studdert-Kennedy, M. (eds.) (1980) *Signed and Spoken Language: Biological constraints on linguistic form*. Weinheim: Verlag Chemie.
- Berg, B. & Lune, H. (2012) *Qualitative Research Methods for the Social Sciences*, 8thedn. San Francisco: Pearson.
- Bernstein, M. E. & Finnegan, M. S. (1983) Internal Speech and the Deaf Child, *American Annals of the Deaf*, 128, 483-489. Cited in Mayer, C. & Wells, G. (1996) Can the Linguistic Interdependence Theory Support a Bilingual-Bicultural Model of Literacy Education for Deaf Students? *Journal of Deaf Studies and Deaf Education*, vol. 1, no. 2, pp. 93-107.
- Biesta, G. (2010) *Pragmatism and the Philosophical Foundations of Mixed Methods Research*. The Stirling Institute of Education, University of Stirling, UK. Available from: <http://www.ioe.stir.ac.uk/research/projects/documents/PragmatismandthePhilosophicalFoundationsOfMixedMethodsResearch.pdf> [Accessed: March 4, 2014].
- Bloch, N. J. (n.d.) National Association of the Deaf. Cited by Allen, M. P. (1999) *Working Group on Communicating Informed Consent to Individuals who are Deaf or Hard-of-hearing*. National Institute on Deafness and Other Communication Disorders. Available from: <http://www.nidcd.nih.gov/news/releases/99/inform/Pages/printready.aspx> [Accessed: March 5, 2014].
- Bloor, M. & Wood, F. (2006) *Keywords in Qualitative Research: A Vocabulary for Research Concepts*. London: Sage.
- Boyatzis, R. E. (1998) *Transforming Qualitative Information: Thematic Analysis and Code Development*. Thousand Oaks: Sage.
- Bracken, B. A. & McCallum, S. (1998) *Universal Nonverbal Intelligence Test (UNIT2) -Examiner's Manual*. Itasca, IL: Riverside. Cited in E. C., Krivitski, D. E., McIntosh & H. Finch (2004) Profile Analysis of Deaf Children Using the Universal Nonverbal Intelligence Test. *Journal of Psycho educational Assessment*, vol. 22, no. 4, pp.338-350.
- Brassell, D. & Rasinski, T. (2008) *Comprehension that Works: Taking Students beyond Ordinary Understanding to Deep Comprehension*. Shell Education.
- Braun, V. & Clarke, V. (2006) Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, vol.3, no.2, pp. 77-101.
- British Educational Research Association (BERA) (2011) *Ethical Guidelines for Educational Research*. Available from: <https://www.bera.ac.uk/wp-content/uploads/2014/02/BERA-Ethical-Guidelines-2011.pdf> [Accessed: March 10, 2014].

- British Sociological Association (BSA) (2004) *Statement of Ethical Practice for the British Sociological Association*. Available from: www.britsoc.co.uk [Accessed: March 10, 2014].
- Bryman, A. (2012) *Social Research Methods*, 4th ed. Oxford University Press.
- Byiers, B. J.; Reichle, J. & Symons, F. J. (2012) Single-Subject Experimental Design for Evidence-Based Practice, *Author Manuscript Journal Speech Lang Pathol*, vol. 21, no.4, pp: 397–414. doi:10.1044/1058-0360(2012/11-0036).
- Calderón, M., Hertz-Lazarowitz, R. & Slavin, R. (1998) Effects of bilingual Cooperative Integrated Reading and Composition on Students Making the Transition from Spanish to English Reading. *The Elementary School Journal*, vol. 99, no. 2, pp. 153-165.
- Cannon, J. E., & Kirby, S. (2013) Grammar Structures and Deaf and Hard of Hearing Students: A Review of Past Performance and a Report of New Findings, *American Annals of the Deaf*, vol.158, no. 3, pp: 292–310.
- Carnevale, F., Macdonald, M. E., Bluebond-Langner, M. & McKeever, P. (2008) Using Participant Observation in Pediatric Health Care Settings: Ethical Challenges and Solutions. *Journal of Child Health Care*, vol. 12, no.18, pp. 18-32.
- Carter, D. F. & Hurtado, S. (2007) 'Bridging Key Research Dilemmas: Quantitative Research Using a Critical Eye'. In F. K. Stage (ed.), *Using Quantitative Data to Answer Critical Questions* (pp.25-35). San Francisco: Jossey-Bass. Available from: http://deepblue.lib.umich.edu/bitstream/handle/2027.42/56004/202_ft.pdf?sequence=1 [Accessed: March 12, 2014].
- Carter, K., James, M. & Lansdwon, H. (2002) 'Literacy and Communication through ICT and the Internet for Deaf Children'. In C. Abbott (ed.), *Special Educational Needs and the Internet: Issues for the Inclusive Classroom* (pp.73-84). London: RoutledgeFalmer.
- Centre for Deaf Studies (CDS) (2005) *Deaf Studies*. Centre for Deaf Studies, Bristol. Available from: www.bris.ac.uk/Depts/DeafStudiesTeaching/ethics/deafstudies.htm [Accessed: March 7, 2014].
- Chilosi, A. M., Comparini, A., Scusa, M, F., Orazini, L., Forli, F., Cipriani, P. & Berrettini, S. (2013) Longitudinal Study of Lexical and Grammar Development in Deaf Italian Children Provided With Early Cochlear Implantation, *Ear and Hearing*, vol.34, no. 3, p.e28-e37.
- Clark, M. D., Hauser, P. C., Miller, P., Kargin, T., Rathmann, C., Guldenoglu, B., Kubus, O., Spurgeon, E. & Israel, E. (2016) The Importance of Early Sign Language Acquisition for Deaf Readers, *Reading & Writing Quarterly*, vol. 32, no. 2, pp.127-151.
- Cohen, L., Manion, L. & Morrison, K. (2007) *Research Methods in Education*, 6th ed.London: RoutledgeFalmer.
- Conrad, R. (1979) *The Deaf School Child*. London: Harper Row.
- Crawford, J. (2007) Hard Sell: Why is Bilingual Education so Unpopular with the American Public? In Garcia, O. & Baker, C. (2007) (eds) *Bilingual*

- Education: An Introductory Reader*, Clevedon: Multilingual Matters Publisher.
- Creswell, J. (2009) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 3rd edn. California: Sage.
- Creswell, J. (2012) *Qualitative Inquiry and Research Design: Choosing among Five Traditions*, 3rd edn. Thousand Oaks: Sage.
- Creswell, J. W. & Clark, V. P. (2010) *Designing and Conducting Mixed Methods Research*, 2nd ed. Thousand Oaks, California: Sage.
- Crume, P. K. (2013) Teachers' Perceptions of Promoting Sign Language Phonological Awareness in an ASL/English Bilingual Program. *Journal of Deaf Studies and Deaf Education*, vol. 18, no. 4, pp.464-488. doi:10.1093/deafed/ent023.
- Cummins, J. (1984) *Bilingualism and Special Education: Issues in Assessment and Pedagogy*. San Diego, CA: College Hill Press.
- Cummins, J. (2008) Teaching for Transfer: Challenging the Two Solitudes Assumption in Bilingual Education. Cited in M. Martin-Jones, A. Blackledge & A. Creese (eds.) (2012) *The Routledge Handbook of Multilingualism*. The United States: Routledge.
- Curtis, W., Murphy, M. & Shields, S. (2014) *Research and Education: Foundations of Education Studies*. London: Routledge.
- Dammeyer, J. (2014) Literacy Skills among Deaf and Hard-of-Hearing Students and Students with Cochlear Implants in Bilingual/Bicultural Education, *Deafness & Education International*, vol. 16, no. 2, pp.108-119. doi: 10.1179/1557069X13Y.0000000030.
- Deafwebsites (2013) *Literacy in Deaf education*. Available from: <http://www.deafwebsites.com/education/literacy-deaf-education.html> [Accessed: March 3, 2014].
- Deal, T. E. (1985) 'The Symbolism of Effective Schools'. In Westoby, A. (ed.) *Culture and Power in Educational Organisations*. Buckingham: Open University Press.
- DeLana, M., Gentry, M. A. & Andrews, J. (2007) The Efficacy of ASL/English Bilingual Education: Considering Public Schools. *American Annals of the Deaf*, vol.152, no.1, pp. 73-87. doi: <https://doi.org/10.131353/aad.2007.0010>.
- DesJardin, J. L., Ambrose, S. E. & Eisenberg, L. S. (2008) Literacy Skills in Children With Cochlear Implants: The Importance of Early Oral Language and Joint Storybook Reading, *Journal of Deaf Studies and Deaf Education*, vol.14, no. 1, pp.22-43.
- Dunne, M., Pryor, J. & Yates, P. (2005) *Becoming a Researcher: A research Companion for the Social Sciences*. Maidenhead: Open University Press.
- Dyer, A., MacSweeney, M., Szczerbinski, M., Green, L. & Campbell, R. (2003) Predictors of Reading Delay in Deaf Adolescents: The Relative Contributions of RapidAutomatized Naming Speed and Phonological Awareness and Decoding, *Journal of Deaf Studies and Deaf Education*, vol. 8, no. 3, pp. 215-229

- Ensor, A. D. & Koller, J. R. (1997) The Effect of the Method of Repeated Readings on the Reading Rate and Word Recognition Accuracy of Deaf Adolescents, *Journal of Deaf Studies and Deaf Education*, vol. 2, no. 2, pp. 61-70.
- Evans, C. (1998) *Literacy Development in Deaf Students: Case Studies in Bilingual Teaching and Learning*. Unpublished PhD thesis, Department of Educational Foundations, Administration, and Psychology, University of Manitoba, Canada.
- Evans, C. (2004) Literacy development in Deaf students: Case studies in bilingual teaching and learning, *American Annals of the Deaf*, vol.149, no.1, pp. 17-27.
- Fishman, J.A. & Lovas, J. (1970) Bilingual Education in Sociolinguistic Perspective, *TESOL Quarterly*, vol. 4, pp.215-22. Cited in J. Kyle (1994) Understanding Bilingualism: Some Applications to the Development of Deaf Children, available online:
http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&ad=rja&uact=8&ved=0ahUKEwih3ZfNtcPVAhWLi1QKHZ51AzWQFghAMAQ&url=http%3A%2F%2Fwww.bris.ac.uk%2FDepts%2FDeafStudiesTeaching%2Fbil%2Fpapers%2Fgrowing_up.doc&usg=AFQjCNERbLzoGBaPVMZYzWtB1gE0WP8Gpw [Accessed: July 28, 2017].
- Fitzgerald & Associates (2010) *Scoping Support for New Zealand Sign Language Users Accessing the Curricula*. Report on International Literature Review, Part 1. Education Counts (Ministry of Education, New Zealand). Available from:
http://www.educationcounts.govt.nz/__data/assets/pdf_file/0003/87042/ScopingSupportNZSL-UsersPart-I-13122010-nw.pdf [Accessed: December 25, 2013].
- Fitzgerald & Associates (2010a) *Scoping Support for New Zealand Sign Language Users Accessing the Curriculum. Part II: A New Zealand Overview*. Paper prepared for the New Zealand Ministry of Education. Available from:
http://www.educationcounts.govt.nz/__data/assets/pdf_file/0004/87088/ScopingSupportNZSL-UsersPart-II-13122010-nw.pdf [Accessed: February 28, 2014].
- Flick, U. (2009) *An Introduction to Qualitative Research*. Thousand Oaks: Sage.
- Flick, U. (2014) *An Introduction to Qualitative Research*, 5thedn. London: Sage.
- Fombad, C. M. (2005) Protecting children's rights in social science research in Botswana: Some ethical and legal dilemmas. *International Journal of Law Policy and the Family*, vol. 19, no. 1, pp.102-120. Available from:
<http://www.bristol.ac.uk/Depts/DeafStudiesTeaching/ethics/resource/ethics%20in%20botswana.pdf> [Accessed: March 6, 2014].
- Freeman, Y. S. & Freeman, D. E. (1998) *ESL/EFL Teaching: Principles for Success*. Portsmouth, NH: Heinemann.
- Freeman, D. & Freeman, Y. (2001) *Between Worlds: Access to Second Language Acquisition*, 2ndedn. Portsmouth, NH: Heinemann.
- Freeman, D. & Johnson, K. (2005) Toward Linking Teacher Knowledge and Student Learning. In D. Tedick (Ed.), *Second Language Teacher*

References

- Education. International Perspectives* (pp. 73_95). Mahwah, NJ: Lawrence Erlbaum.
- Frey, L. R., Botan, C. H., Freidman, P. G. & Kreps, G. L. (2000) *Investigating Communication: An Introduction to Research Methods*, 3rd edn. Boston, MA: Allyn & Bacon.
- Gárate, M. (2012) *ASL/English Bilingual Education: Models, Methodologies, and Strategies*. Visual Language & Visual Learning. Available from: http://www.academia.edu/25620765/ASL_English_Bilingual_Education_Models_methodologies_and_strategies [Accessed: January 6, 2014].
- García, O. (1997) 'Bilingual Education'. In F. Coulmas (ed.) *The Handbook of Sociolinguistics*. Oxford: Blackwell. pp. 405-420.
- Gentile, A. (1972) *Academic achievement test result of a national testing program for hearing impaired students: 1971*. Washington, D. C.: The American University. Cited in Nelson, K. E. (ed.) (2014) *Children's language*, Volume 5, 2nd edn. New York: Psychology Press. Available from: https://books.google.co.uk/books?id=j_8hAwAAQBAJ&pg=PA193&lpg=PA193&dq=Academic+Achievement+Test+Result+of+a+National+Testing+Program+for+Hearing+Impaired+Students&source=bl&ots=0pvfuU1lqK&sig=dfSloa2JZEWdrB4niuqE25lqCFI&hl=en&sa=X&ved=0ahUKEwj8k_2OkfnMAhUrLcAKHdLzCQQQ6AEILjAF#v=snippet&q=Gentile&f=false [Accessed: May 28, 2016].
- Geers, A. (2002) Factors affecting the development of speech, language, and literacy in children with early cochlear implantation, *Language, Speech, and Hearing Services in the School*, vol. 33, no. 3, pp.172-183.
- Geers, A. (2005) Factors associated with academic achievement by children who received a cochlear implant by 5 years of age. Presentation at *preconference workshop on Development of Children with Cochlear Implants at biennial meetings of the Society for Research in Child Development*. Atlanta, Georgia, April 7-10. Cited in Marschark, M. & Spencer, P. E. (2009) *Evidence of best practice models and outcomes in the education of Deaf and hard-of-hearing children: An international review*, A report commissioned by the National Council for Special Education (NCSE), (Ireland), available online: http://ncse.ie/wp-content/uploads/2014/10/1_NCSE_Deaf.pdf [Accessed: May 13 2016].
- Geers, A. & Moog, J. (1989) Factors predictive of the development of literacy in profoundly hearing-impaired adolescents, *Volla Review*, vol. 91, pp. 69-86.
- Geers, A. Moog, J. & Schick, B. (1984), Acquisition of spoken and signed English by profoundly Deaf children, *Journal of Speech and Hearing disorders*, vol. 49, no. 4, pp. 378-388.
- Gibson, W. & Brown, A. (2009) *Working with qualitative data*. Thousand Oaks: Sage.
- Goldman, S. R. (1985) Utilization of knowledge acquired through the first language in comprehending a second language: Narrative composition by Spanish-English speakers. *Report submitted to the US Department of Education*. Cited in Mayer, C. & Wells, G. (1996) Can the linguistic interdependence theory support a bilingual-bicultural model of literacy

- education for deaf students? *Journal of Deaf Studies and Deaf Education*, vol. 1, no. 2, pp. 93-107.
- Goldin-Meadow, S. & Mayberry, R. I. (2001) How do profoundly Deaf children learn to read? *Learning Disabilities Research and Practice*, vol. 16, no. 4, pp.222-229.
- Goodyear, M. (1996) Divided by a common language: Diversity and deception in the world of global marketing. *Journal of the Market Research Society*, vol. 38, no. 2, pp.105-122. Cited in the Association for Qualitative Research (2013) *Cognitive model of qualitative research*. Available from: <http://www.aqr.org.uk/glossary/?term=cognitive> [Accessed: March 9, 2014].
- Green, H. (2013) *Preview/review strategy*. Available from: <http://prezi.com/pwcmearfnr8b/previewreview-strategy/> [Accessed: February 24, 2014].
- Greenbaum, T. (2000) Conducting focus groups with disabled respondents. *Quirk's Marketing Research Review*, no. 0637. Available from: <http://www.quirks.com/articles/a2000/20001204.aspx?searchID=161664755> [Accessed: March 7, 2014].
- Greene, J. C. (2008) Is mixed methods social inquiry a distinctive methodology? *Journal of Mixed Methods Research*, vol.7, no.2, pp. 7-22.
- Gregory, S. (1996) Bilingualism and the education of Deaf children. A paper originally prepared for presentation at *Bilingualism and the Education of Deaf Children: Advances in practice*, a Conference held at the University of Leeds, June 29th 1996. Available from: <http://www.leeds.ac.uk/educol/documents/000000306.htm> [Accessed: January 25, 2014].
- Guest, G., Namey, E. E. & Mitchell, M. L. (2012) *Collecting qualitative data: A field manual for applied research*. Thousand Oaks, CA: Sage.
- Gutman, V. (ed.) (2002) *Ethics in mental health and deafness*. United States: Gallaudet University.
- Hakuta, K. (1987) Degree of bilingualism and cognitive ability in mainland Puerto Rican children. *Child Development*, vol. 58, no. 5, Special Issue on Schools and Development, pp. 1372-1388.
- Hall, R. (2012) *Mixed methods: In search of a paradigm*. Available from: http://auamii.com/proceedings_phuket_2012/hall.pdf [Accessed: March 3, 2014].
- Hammersley, M. (2013) *What is Qualitative Research?* London: Bloomsbury.
- Hanna, F. (2005) *Implementing Sign Bilingual Education*. Unpublished master's thesis. University of Bristol, UK.
- Harris, M. & Terlektsi, E. (2011) Reading and spelling abilities of deaf adolescents with cochlear implants and hearing aids, *Journal of Deaf Studies and Deaf Education*, vol. 16, no. 1, pp. 24–34. doi:10.1093/deafed/enq031
- Hatch, A. (2002) *Doing Qualitative Research in Education Settings*.USA: State University of New York.

- Heineman-Gosschalk, R. & Webster, A. (2003) Literacy and the role of parents of Deaf children, *Deafness & Education International*, vol.5, no.1, pp.20-38, DOI:10.1179/146431503790560772
- Hendriks, H. B. (2008) *Jordanian sign language: Aspects of grammar from a cross-linguistic perspective*. UvA-DARE, the institutional repository of the University of Amsterdam. Available from: <http://dare.uva.nl/document/2/144187> [Accessed: September 21, 2016].
- Hendriks, H. B. (2009) Jordanian sign language: Aspects of grammar from a cross-linguistic perspective. *Sign Language & Linguistics*, vol. 12, no. 1, pp. 101-110. doi: 10.1075/sll.12.1.06hen.
- Hermans, D., Ormel, E. & Knoors, H. (2010) On the relation between the signing and reading skills of Deaf bilinguals. *International Journal of Bilingual Education and Bilingualism*, vol.13, no.2, pp. 187-199. doi: 10.1080/13670050903474093.
- Hermans, D. H., Ormel, E., Knoors, H. & Verhoeven, L. (2008) The relationship between the reading and signing skills of Deaf children in bilingual education programs. *Journal of Deaf Studies and Deaf Education*, vol.13, no. 4, pp. 518-530. doi:10.1093/deafed/enn009.
- Herrell, A. & Jordan, M. (2008) *50 strategies for teaching English language learners*, 3rd edn. Upper Saddle River, NJ: Pearson Education.
- Hillebrandt, I. S. (1979) Focus group research: Behind the one-way mirror. *Public Relations Journal*, vol. 35, no. 2, pp. 17-33. Cited in A. Hatch, (2002) *Doing qualitative research in education settings*. USA: State University of New York.
- Hitchcock, G. & Hughes, D. (1992) *Research and the teacher: A qualitative introduction to school-based research*. New York: Routledge.
- Ho, P. M., Peterson, P. N. & Masoudi, F.A. (2008) Evaluating the evidence: Is there a rigid hierarchy? *Circulation*, vol. 14, pp. 1676-1684.
- Hoffmeister, R., Philip, M., Costello, P. & Grass, W. (1997) 'Evaluating American Sign Language in Deaf children: ASL influences on reading with a focus on classifiers, plurals, verbs of motion and location'. In J. Mann (ed.) *Proceedings of Deaf Studies V Conference*. Washington, D.C.: Gallaudet University.
- Hoffmeister, R. (2000) 'A piece of the puzzle: ASL and reading comprehension in Deaf children'. In C. Chamberlain, J. Morford & R. Mayberry (eds.) *Language acquisition by eye* (pp. 143-163). Hillsdale, NJ: Lawrence Erlbaum Associates. doi: <https://doi.org/10.1353/lan.2001.0222>.
- Humphries, T., Kushalnagar, P., Mathur, G., Napoli, D. J., Padden, C. & Rathmann, C. (2014) Ensuring language acquisition for Deaf children: What linguists can do. *Language*, vol. 90, no. 2, pp. e31-e52.
- Hutchison, I. (2007) Oralism - a sign of the times? The contest for Deaf communication in late nineteenth century Scotland. *European History Review*, vol.14, no. 4, pp. 481-501. Available from: <https://dspace.stir.ac.uk/bitstream/1893/775/1/Oralism%20-%20a%20sign%20of%20the%20times%20-%20ERoH%20-%20Jun%202007.pdf> [Accessed: January 5, 2014].

References

- Hyde, M. B. & Power, D. J. (1992) The receptive communication abilities of Deaf students under oral, manual and combined methods. *American Annals of the Deaf*, vol. 137, no. 5, pp. 389-399.
- Johnson, R. B. & Onwuegbuze, A. J. (2004) Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, vol. 33, no.7, pp. 14-26.
- Johnson, R. E. & Erting, C. J. (1989) 'Ethnicity and socialization in a classroom for Deaf children'. In C. Lucas (ed.) (2001) *The sociolinguistics of American Sign Language*, pp. 41-84. San Diego: CA, Academic Press.
- Johnson, R. E. (1998) Beliefs and practices in Deaf education: Magical and logical. *El bilingüismo de los Sordos*, vol. 1, no. 3. [To be published in translation in Spanish]. Cited in Allen, M. P. (1999) *Working group on communicating informed consent to individuals who are Deaf or hard-of-hearing*. National Institute on Deafness and Other Communication Disorders. Available from: <http://www.nidcd.nih.gov/news/releases/99/inform/Pages/printready.aspx> [Accessed: March 5, 2014].
- Johnstone, R. (2007) Characteristics of immersion programmes, in Garcia, O. & Baker, C. (2007) (eds) *Bilingual Education: An introductory reader*, Clevedon: Multilingual Matters.
- Johnston, T., Leigh, G. & Foreman, P. (2002) The implementation of the principles of sign bilingualism in a self-described sign bilingual program: Implications for the evaluation of language outcomes. *Australian Journal of Education of the Deaf*, vol.8, pp. 38_46.
- Johnson, R. E., Liddell, S. K. & Erting, C. J. (1989) *Unlocking the curriculum: Principles for achieving access in Deaf education*. Gallaudet Research Institute Working Paper, pp. 89-3.
- Johnson, K. & Swain, M. (eds) (1997) *Immersion education international perspectives*, Cambridge: Cambridge University Press. Cited in Johnstone, 2007) *Characteristics of immersion programmes*, in Garcia, O. & Baker, C. (2007) (eds) *Bilingual Education: An introductory reader*, Clevedon: Multilingual matters publisher.
- Juel, C. (1988) Learning to Read and Write: A Longitudinal Study of 54 Children From First Through Fourth Grades, *Journal of Educational Psychology*, vol. 80. no. 4, pp. 437-447. Available online: <http://www.psy.cmu.edu/~sieglar/710-Juel88.pdf> [Accessed: September 9, 2017].
- Katzner, K. (2002) *The Languages of the World*. London and New York: Routledge.
- Kennedy, M. (2012) *Modern Standard Arabic, reading booklet*. USA: Simon & Schuster, Inc.
- Kim, M. (2012). Intertextuality and narrative practices of young deaf students in classroom contexts: A microethnographic study. *Reading Research Quarterly*, vol. 47, no.4, pp. 404–426. doi:10.1002/RRQ.029

References

- Klein, P. (2005) 'Epistemology'. In E. Craig (ed.) *Routledge Encyclopedia of Philosophy*. London: Routledge. Available from: <http://www.rep.routledge.com/article/P059> [Accessed: February 2, 2014].
- Klima, E. S., & Bellugi, U. (1979) *The signs of language*. Cambridge, MA: Harvard University Press. Cited in Mayer, C. & Wells, G. (1996) Can the linguistic interdependence theory support a bilingual-bicultural model of literacy education for deaf students? *Journal of Deaf Studies and Deaf Education*, vol. 1, no. 2, pp. 93-107.
- Krivitski, E. C., McIntosh, D. E., & Finch, H. (2004) Profile analysis of Deaf children using the universal nonverbal intelligence test. *Journal of Psychoeducational Assessment*, vol. 22, no. 4, pp. 338-350.
- Kuntze, M. (2004) *Literacy acquisition and Deaf children: A study of the interaction between ASL and written English*. Unpublished doctoral dissertation, Stanford University, Stanford, CA.
- Kyle, J. (1994) Understanding Bilingualism: Some applications to the development of deaf children, (a version of this to appear in Kyle, *Growing Up in Sign and Word: Papers from a Conference at the Centre for Deaf Studies* Paperback – June, 1994), available online: http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&ad=rja&uact=8&ved=0ahUKEwih3ZfNtcPVAhWLi1QKHZ51AzwQFghAMAQ&url=http%3A%2F%2Fwww.bris.ac.uk%2FDepts%2FDeafStudiesTeaching%2Fbil%2Fpapers%2Fgrowing_up.doc&usg=AFQjCNERbLzoGBaPVMZYzWtB1gE0WP8Gpw [Accessed: July 28, 2017].
- Kyle, J. (2001) Deaf children learning to sign. Rev. Online da bibl. Prof. Joel Martins, Campinas. *ARTIGO*, vol. 2, no.3, pp. 27-37. Available from: <https://core.ac.uk/download/pdf/42094359.pdf> [Accessed: February 25, 2014].
- Kyle, J. (2012) *A Personal Data Record for Use in Deaf Children and Young People Assessment*, Bristol, Deaf Studies Trust.
- Kyle, J.G. & Woll, B. (eds.) (1983) *Language in sign*. London: Croom Helm.
- Kyle, J., Woll, B. & Ackerman, J. (1989) *From Gesture to Sign and Speech*. Final report to the Economic and Social Research Council. Bristol: Centre for Deaf Studies, 1989.
- Ladd, P. & Gonçalves, J. C. (2012) 'A final frontier? How Deaf cultures and Deaf pedagogies can revolutionize Deaf education'. In L. Leeson and M. Vermeerbergen (eds.) *Working with the Deaf community: Deaf education, mental health & interpreting*. Dublin: Interesource.
- Lange, C. M., Lane-Outlaw, S., Lange, W. E. & Sherwood, D. L. (2013), American Sign Language/English Bilingual Model: A Longitudinal Study of Academic Growth, *Journal of Deaf Studies and Deaf Education*, pp. 532-544. doi:10.1093/deafed/ent027.
- LaSasso, C. (1999) *Critical literacy issues in deaf education in the United States. Actes du colloque international ACFO: Surdit e et acc s   la langue  crite, de la recherche   la pratique*, Novembre, pp. 221–243. Available from: https://www.researchgate.net/publication/228481309_Critical_literacy_issues_in_deaf_education_in_the_United_States [Accessed: April 25, 2016].

References

- Lederberg, A. R., Schick, B. & Spencer, P. E. (2012) *Language and Literacy Development of Deaf and Hard-of-Hearing Children: Successes and Challenges*. Developmental Psychology. Advance online publication. doi: 10.1037/a0029558.
- Leigh, G. (2008) Changing parameters in deafness and deaf education: Greater opportunity but continuing diversity, in Marschark, M, and Hauser, PC (Eds), *Deaf cognition: Foundations and outcomes*, New York: Oxford University Press.
- Lewis, S. (1998) Reading and Writing Within an Oral Approach. In Gregory S, Knight P, McCracken W, Powers S and Watson L (eds), *Issues in Deaf Education*. London: David Fulton, 1998.
- Li, Y. (2005) *The effects of the bilingual strategy—preview-view-review—on the comprehension of science concepts by Deaf ASL/English and hearing Mexican-American Spanish/English bilingual students*. Unpublished doctoral dissertation, Lamar University, Beaumont, TX.
- Lucas, C. & Valli, C. (1992) *Language contact in the American deaf community*. San Diego, CA: Academic Press. Cited in Mayer, C. & Leigh, G. (2010) The changing context for sign bilingual education programs: issues in language and the development of literacy, *International Journal of Bilingual Education and Bilingualism*, vol.13, no, 2, pp. 175-186, DOI: 10.1080/13670050903474085.
- Lynas, W. (1994) Communication Options in the Education of Deaf Children, London: Whurr. In G. Marmor, & L. Petitto, (1979) Simultaneous Communication in the Classroom: How Well is English Grammar Represented? *Sign Language Studies*, vol. 23, summer, pp. 99-136.
- MacMillan, D. L., Gresham, F. M. & Forness, S. R. (1996) Full inclusion: An empirical perspective. *Behavioral Disorders*, vol. 21, no. 2, pp. 145-159.
- Mahshie, S. (1995) *Educating deaf children bilingually* Washington DC Pre College Programs, Gallaudet University, 1995. Cited in Fitzgerald & Associates (2010) *Scoping support for New Zealand Sign Language users accessing the curricula*. Report on International Literature Review, Part 1. Education Counts (Ministry of Education, New Zealand). Available from: http://www.educationcounts.govt.nz/_data/assets/pdf_file/0003/87042/ScopingSupportNZSL-UsersPart-I-13122010-nw.pdf [Accessed: December 25, 2013].
- Mann, W. (2007) Examining German Deaf children's understanding of referential distinction in written German and German Sign Language, *Educational & Child Psychology*, vol. 24, no. 4, pp. 59-76.
- Marschark, M. & Spencer, P. E. (2009) *Evidence of best practice models and outcomes in the education of Deaf and hard-of-hearing children: An international review*. A report commissioned by the National Council for Special Education (NCSE) (Ireland).available from: http://ncse.ie/wp-content/uploads/2014/10/1_NCSE_Deaf.pdf [Accessed: May 13 2016].
- Marshall, C. & Rossman, G.B. (1999, 2010) The how of the study: Building the research design, in C. Marshall, & G.B. Rossman (2010) *Designing qualitative research* (3rd and 5thedns.).Thousand Oaks, CA: Sage, pp. 89-.

References

- Martin-Jones, M., Blackledge, A. & Creese, A. (eds.) (2012) *The Routledge handbook of multilingualism*. United States: Routledge.
- Mayberry, R. I. (1989) Deaf Children's reading comprehension in relation to sign language structure and input. Paper presented at the *Society for Research in Child Development* (Kansas City, KS, April 1989: p.13).
- Mayer, C. (2007) What really matters in the early literacy development of deaf children. *Journal of Deaf Studies and Deaf Education*, vol.12, no. 4, pp. 411_31.
- Mayer, C. & Akamatsu, C. T. (1999) Bilingual-Bicultural Models of Literacy Education for Deaf Students: Considering the Claims, the Australian *Journal of Education of the Deaf*, vol. 2, pp. 5-9.
- Mayer, C. & Akamatsu, C.T. (2003) Bilingualism and literacy. In *Oxford handbook of Deaf studies, language and education*: vol. 1, ed. M. Marschark, & P. Spencer, pp. 136_47. New York: Oxford University Press.
- Mayer, C. & Leigh, G. (2010) The changing context for sign bilingual education programs: issues in language and the development of literacy, *International Journal of Bilingual Education and Bilingualism*, vol.13, no, 2, pp. 175-186, DOI: 10.1080/13670050903474085.
- Mayer, C., Watson, L., Archbold, S., Yen Ng, Z. & Mulla, I. (2016) Reading and Writing Skills of Deaf Pupils with Cochlear Implants, *Deafness & Education International*, vol.18, no. 2, pp.71-86.
- Mayer, C. & Wells, G. (1996) Can the linguistic interdependence theory support a bilingual-bicultural model of literacy education for deaf students? *Journal of Deaf Studies and Deaf Education*, vol. 1, no. 2, pp. 93-107.
- McCarty, T. L. (2004) Dangerous difference: A critical-historical analysis of language education policies in the United States. In J.W. Tollefson & A.B.M. Tsui (eds), *Medium of instruction policies: Which agenda? Whose agenda?* (pp. 71–93). Mahwah, NJ: Lawrence Erlbaum. Available online: https://www.researchgate.net/publication/292589187_Dangerous_difference_A_critical-historical_analysis_of_language_education_policies_in_the_United_States [Accessed: August18, 2017].
- McKee, R. (2003) *Report on a survey of Deaf Paraprofessionals' Perspectives on Mainstream Learning Contexts for Deaf students in New Zealand*, *Deaf Studies Research Unit*, Research Report no. 5 , School of Linguistics and Applied Language Studies. Available online from: Victoria University of Wellington, website: http://www.victoria.ac.nz/lals/research/projects/publications/Report_5_Deaf_Paraprofessionals.pdf [Accessed: April 27, 2016].
- McKee, R. (2005) "As one Deaf person to another": Deaf paraprofessionals in mainstream schools. *Deaf Worlds*. Available from: http://www.victoria.ac.nz/lals/research/projects/publications/Report_5_Deaf_Paraprofessionals.pdf [Accessed: February 24, 2014].
- Mehra, B. (2002) Bias in qualitative research: Voices from an online classroom. *The Qualitative Report*, vol. 7, no. 1. Available from:

- <http://nsuworks.nova.edu/cgi/viewcontent.cgi?article=1986&context=tqr>
[Accessed: March 3, 2014].
- Mercuri, S. (2015) Teachers' Understanding of Practice: Planning and Implementing Preview/View/Review in the Dual Language Classroom, in Freeman, Y., S. & Freeman, D.E. (ed.) *Research on Preparing Inservice Teachers to Work Effectively with Emergent Bilinguals (Advances in Research on Teaching*, vol. 24) Emerald Group Publishing Limited, pp.81-106.
- Merrills, J. D., Underwood, G. & Wood, D. J. (1994) The word recognition skills of profoundly, prelingually Deaf children. *British Journal of Psychology*, vol. 12, pp. 365-384.
- Mingers, J. (2001) Combining IS research methods: Towards a pluralist methodology. *Information Systems Research*, vol. 12, no. 3, pp. 240-259.
- Mohamad, A. (1999) What do we test when we test reading comprehension? *The Internet TESL Journal*, vol. V, no. 12. Available from: <http://iteslj.org/Techniques/Mohamad-TestingReading.html> [Accessed: April 28, 2015].
- Moreno-Recio, P. (n.d.) *supporting language instruction in the bilingual classroom*. Ector County Independent School District. Available from: <http://www.ector-county.k12.tx.us/cms/lib/tx01000975/centricity/Domain/14/ImplementingPVR.pdf>[Accessed: February 24, 2014].
- Morford, J. P., Wilkinson, E., Villwock, A., Pin~ ar, P. & Kroll, J. F. (2011) When Deaf signers read English: do written words activate their sign translations? *Cognition*, vol. 118, pp. 286–92. doi: 10.1016/j.cognition.2010.11.006.
- Morgan, D. L. (1988) *Planning focus groups*. Thousand Oaks: Sage.
- Morgan, D. L. (2007) Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, vol. 1 no. 1, pp. 48-76.
- Moore, D. F. & Sweet, C. (1990) Factors predictive of school achievement. In D. F. Moore & K. P. Meadow-Orlans (Eds.), *Educational Developmental Aspects of Deafness* (pp. 154–201). Washington, DC: Gallaudet University Press.
- Morrison, K. R. B. (1993) *Planning and accomplishing school-centred evaluation*. Norfolk: Peter Francis. Cited in L. Cohen, L. Manion & K. Morrison (2011) *Research methods in education*, 7th edn. London: RoutledgeFalmer.
- Mouty, J. L., Pucci, C. T & Harmon, K. C. (2013) How Deaf American Sign Language/English bilingual children become proficient readers: An Emic perspective. *Journal of Deaf Studies and Deaf Education*, vol. 19, no. 3, pp. 333-346.
- Natividad, R. M. V. (2006) *Persistence in bilingual/ESL education and achievement in reading*. PhD thesis, Faculty of the Graduate School of the University of Texas, USA.
- Nover, S., Andrews, J., Baker, S., Everhart, V. & Bradford, M. (2002) *Staff development in ASL/English bilingual instruction for Deaf students*:

- Evaluation and impact study (USDLC Star Schools Project Report 5)*. Santa Fe, NM: New Mexico School for the Deaf. Cited in Andrews, J. F. & Rusher, M. M. A. (2010) Codeswitching techniques: Evidence-based instructional practices for the ASL/English bilingual classroom. *American Annals of the Deaf*, vol. 155, no. 4, pp. 407-424. <https://muse.jhu.edu/article/409188>.
- Novogrodsky, R., Caldwell-Harris, C., Fish, S. & Hoffmeister, R. J. (2014) The development of antonym knowledge in American Sign Language (ASL) and its relationship to reading comprehension in English. *Language Learning*, vol. 64, no. 4, pp. 749-770. doi: 10.1111/lang.12078.
- Ochsenwald, W. (2016) Ottoman Arabia and the Holy Hijaz, 1516-1918. *Journal of Global Initiatives: Policy, Pedagogy, Perspective*, vol. 10, no. 1, article 3. Available from: <https://chronicle.fanack.com/saudi-arabia/history-past-to-present/from-antiquity-to-the-ottoman-period/> [Accessed: January 2, 2017].
- Onwuegbuzie, A. & Teddlie, C. (2003) 'A framework for analysing data in mixed methods research'. In A. Tashakkori & C. Teddlie (eds.) *Handbook of mixed methods in social and behaviour research*. Thousand Oaks: Sage.
- Ottawa Board of Education (1996) Comparative outcomes and impacts of early, middle and late entry French immersion options: Review of recent research and annotated bibliography. OBE, 330 Gilmour Street, Ottawa, Canada K2P 0P9. Cited in Johnstone, 2007) *Characteristics of immersion programmes*, in Garcia, O. & Baker, C. (2007) (eds) *Bilingual Education: An introductory reader*, Clevedon: Multilingual matters publisher.
- Padden, C. & Ramsey, C. (2000) 'American Sign Language and reading ability in Deaf children'. In R. I. Mayberry (ed.) *Language acquisition by eye* (pp. 165-189). Mah-wah, NJ: Lawrence Erlbaum Associates. Available from: <https://quote.ucsd.edu/padden/files/2013/01/ASLandreading.pdf> [Accessed: January 5, 2017].
- Patton, M. Q. (2002) *Qualitative research & evaluation methods*, 3rd edn. Thousand Oaks, CA: Sage.
- Peal, E. & Lambert, W.E. (1962) The relation of bilingualism to intelligence. *Psychological Monographs: General and Applied*, vol. 76, no. 27, pp.1-23.
- Pickersgill, M. & Gregory, S. (1998) *Sign bilingualism: A model*. Wembley, UK: Adept Press.
- Pribanikj, L. & Milkoivkj, M. (2009) The benefit of early exposure to sign language. *Journal of Special Education & Rehabilitation*, vol. 10, nos. 3-4.
- Quigley, S. P., Wilbur, R. B. & Montanelli, D. S. (1976) Complement structures in the language of deaf students, *Journal of Speech, Language, and Hearing Research*, vol.19, no.3, pp:448-57.
- Reiss, J. (2008) *102 content strategies for English language learners: Teaching for academic success in grades 3-12*. Upper Saddle River, NJ: Pearson Education.
- Saiegh-Haddad, E. (in press) Learning to read in Arabic. To appear in L. Verhoeven & C. Perfetti (Eds.) *Reading acquisition across languages and writing systems: An international handbook*. Cambridge University Press.

References

- Saiegh-Haddad, E. & Henkin-Roitfarb, R. (2014) 'The structure of Arabic language and orthography'. In E. Saiegh-Haddad & M. Joshi (eds.) *Handbook of Arabic literacy: Insights and perspectives*, vol. 9 (pp.3-28) New York: Springer.
- Schirmer, B. (1994) *Language and literacy development in children who are Deaf*. New York, NY: Macmillan.
- Schlesinger, H. S. & Meadow-Orlans, K. P. (1972) *Sound and sign: Childhood deafness and mental health*. University of California Press.
- Schorr, E., Roth, F. & Fox, N. (2008) A comparison of the speech and language skills of children with cochlear implants and children with normal hearing. *Communication Disorders Quarterly*, vol.29, no. 4, pp. 195-210.
- Shadish, W. R., Cook, T. D. & Campbell, D. T. (2002) *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.
- Silverman, D. (2010) *Doing qualitative research*, 3rd edn. London: Sage.
- Simms, L. & Thumann, H. (2007) In search of a new, linguistically and culturally sensitive paradigm in Deaf education. *American Annals of the Deaf*, vol.15, no. 3, pp. 302-311. <https://doi.org/10.1353/aad.2007.0031>.
- Smith, D. H. & Ramsey, C. L. (2004) Classroom discourse practices of a Deaf teacher using American Sign Language. *Sign Language Studies*, vol. 5, no.1, pp. 39-62. doi.org/10.1353/sls.2004.0026.
- Sparrow, W., Butvilofsky, S., Escamilla, K., Hopewell, S. & Tolento, T. (2014) Examining the longitudinal biliterate trajectory of emerging bilingual learners in a paired literacy instructional model. *Bilingual Research Journal*, vol. 37, no. 1, pp. 24-42.
- Spencer, P. E., & Marschark, M. (2010) *Evidence-based practice in educating Deaf and hard-of-hearing students*. New York, NY: Oxford University Press.
- Spooncer, F. (1999) *Group literacy assessment*, 2nd edn. London: Hodder and Stoughton.
- Stake, R.E. (2010) *Qualitative research: Studying how things work*. Spring Street, NY: Guilford Press.
- Stanford Working Group (1993) *Federal education programs for limited-English-proficient students: A blueprint for the second generation*, Stanford, CA:School of education, Stanford University. Cited in K. Hakuta & E. F. Mostafapour (1998) Perspective from the History and politics of bilingual education in the United States. In I. Parasnis (1998) (ed) *Cultural and Language Diversity and the Deaf Experience*, Cambridge University Press.
- Strong, M. & Prinz, P. M. (2000) 'Is American sign language related to English literacy?' In C. Chamberlain, J. Morford & R. Mayberry (eds.) *Language acquisition by eye* (pp.131-141). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Svartholm, K. (1993) Bilingual education for the Deaf in Sweden. *Sign Language Studies*, vol. 81, pp. 291-332. [doi: 10.1080/13670050903474077](https://doi.org/10.1080/13670050903474077).

- Svartholm, K. (2014) 35 years of bilingual deaf education – and then? *Educar em Revista, edição especial*, no. 2/2014, pp. 33-50. doi: 10.1590/0104-4060.37228. Available from: http://www.scielo.br/pdf/er/nspe-2/en_04.pdf [Accessed: February 17, 2017].
- Swanwick, R. (1996) Deaf children's strategies for learning English: How do they do it? A paper prepared for presentation at *Bilingualism and the Education of Deaf Children: Advances in Practice*, a Conference held at the University of Leeds June 29, 1996. Available from: <http://www.leeds.ac.uk/educol/documents/000000304.htm> [Accessed: April 18, 2016].
- Swanwick, R. (2016) Deaf children's bimodal bilingualism and education, *Language Teaching*, vol. 49, no.1, pp. 1-34. doi:10.1017/S0261444815000348.
- Swanwick, R. & Gregory, S. (2007) *Sign bilingual education: Policy and practice*. Gloucester, UK: Forest Books.
- Swanwick, R. & Tsverik, I. (2007) The role of sign language for Deaf children with cochlear implants: Good practice in sign bilingual settings. *Deafness and Education International*, vol.9, no.4, pp. 214-231. doi: 10.1179/146431507790559905.
- Swanwick, R. & Watson, L. (2005) Literacy in the homes of young Deaf children: Common and distinct features of spoken language and sign bilingual environments. *Journal of Early Childhood Literacy*, vol. 5, no. 1, pp. 53-78.
- Takahashi, N., Isaka, Y., Yamamoto, T. & Nakamura, T. (2017) Vocabulary and Grammar Differences Between Deaf and Hearing Students, *Journal of Deaf Studies and Deaf Education*, vol. 22, no. 1, pp.88-104
- Tashakkori, A. & Teddlie, C. B. (2003) *Handbook of mixed methods in social and behavioural research*. London /Thousand Oaks, CA: Sage.
- Teddlie, C. & Tashakkori, A. (2009) *Foundations of mixed methods research*. Thousand Oaks, CA: Sage.
- The United Nations Educational Scientific and Cultural Organization (UNESCO) (2015) *Saudi Arabia: General information*. Available from: <http://www.uis.unesco.org/Education/Documents/literacy-statistics-trends-1985-2015.pdf> [Accessed: October 6, 2016].
- Tibi, S. & McLeod, L. (2014) 'The development of young children's Arabic language and literacy in the United Arab Emirates'. In E. Saiegh-Haddad & M. Joshi (eds.) *Handbook of Arabic literacy: Insights and perspectives*, Vol.9. New York: Springer.
- Travers, C. J. (2001) Stress in teaching: Past, present and future. In J. E. Dunham (ed.) *Stress in the workplace: Past, present and future*. Whurr Publishers, pp.164-190.
- Traxler, C. (2000) The Stanford achievement test, 9th edition: National norming and performance standards for Deaf and hard-of-hearing students. *Journal of Deaf Studies and Deaf Education*, vol. 5, no. 4, pp. 337-348.
- Ulanoff, S. & Pucci, S. (1993) Is concurrent-translation or preview-review more effective in promoting second language vocabulary acquisition? A paper

References

- presented at the *Annual Meeting of the American Educational Research Association* (Atlanta, GA, April 12-16, 1993).
- Van Staden, A. (2013) An evaluation of an intervention using sign language and multi-sensory coding to support word learning and reading comprehension of Deaf signing children. *Child Language Teaching and Therapy*, vol. 29, no. 3, pp. 305-318. doi: 10.1177/0265659013479961.
- Vaughn, S., Schumm, J. S. & Sinagub, J. M. (1996) *Focus group interviews in education and psychology*. London /Thousand Oaks, CA: Sage.
- Vermeiden, A. M., Bon, W. V., Schreuder, R. Knoors, H. & Snik, A.D. (2007) Reading Comprehension of Deaf Children With Cochlear Implants, *Journal of Deaf Studies and Deaf Education*, vol. 12, no. 3, pp. 283-302.
- Vincent, D. & Crumpler, M. (2007) *Hodder group reading tests 2A/B*, 2nd edn. London: Hodder and Stoughton.
- Vygotsky, L. S. (1987) Thought and word, (trans. N. Minnick). In R. W. Rieber & A. S. Carlton (Eds.), *The collected works of L. S. Vygotsky: Volume 1*. New York: Plenum.
- Walker, L. M., & Rickards, F. W. (1993) Reading comprehension levels of profoundly, prelingually Deaf students in Victoria, *the Australian Teacher of the Deaf*, vol. 32, pp. 32-47.
- Wang, Y., Trezek, B. J., Luckner, J. & Paul, P. V. (2008) The role of phonology and phonologically related skills in reading instruction for students who are Deaf and hard-of-hearing. *American Annals of the Deaf*, vol.153, no. 4, pp. 396-407.
- Watson, L. (2002) The literacy development of children with cochlear implants at age seven, *Deafness & Education International*, vol. 4, no.2, pp. 84-98.
- Wauters, L. N., van Bon, W. H. J. & Tellings, A. E. J. M. (2006) Reading comprehension of Dutch Deaf children. *Reading and Writing*, vol.19, pp. 49-76.
- Weaver, K. A. & Starner, T. (2010) *We need to communicate! Helping hearing parents of Deaf children learn American Sign Language*. Available from: <http://files.eric.ed.gov/fulltext/ED530818.pdf> [Accessed: October 10, 2016].
- Webster, A. (1986a) *Deafness, Development and Literacy*, Methuen. Cited in Watson, L. (1998) Teaching and learning in S. Gorgory, P. Kinght, W. McCracken, S. Powers and L. Waston, eds (1998) *Issues in Deaf Education*, New Yourk: David Fulton, pp. 99-154.
- Webster, A. (1986b) *Deafness, development and literacy*. London: Metheun. Cited in Mayer, C. & Wells, G. (1996) Can the linguistic interdependence theory support a bilingual-bicultural model of literacy education for deaf students? *Journal of Deaf Studies and Deaf Education*, vol. 1, no. 2, pp. 93-107.
- Wiles, R. (2013) *What are qualitative research ethics?* UK: Bloomsbury.
- Wilkins, M. & Ertmer, D. (2002) Introducing young children who are Deaf or hard of hearing to spoken language: Child's Voice, an oral school. *Language, Speech, and Hearing Services in Schools*, vol. 33, no. 3, pp.196-204.
- Wolfinger, N. (2002) *On writing field notes: Collection strategies and background expectancies*. London: Sage. Available from: <https://www.uni->

- D8%B7%20%D8%AA%D8%B5%D9%85%D9%8A%D9%85%20%D8%A7%D9%84%D9%85%D9%82%D9%8A%D8%A7%D8%B3&source=web&cd=1&cad=rja&ved=0CC8QFjAA&url=http%3A%2F%2Ffaculty.ksu.edu.sa%2F73780%2FDocLib%2F%25D9%2583%25D9%258A%25D9%2581%25D9%258A%25D8%25A9%2520%25D8%25AA%25D8%25B5%25D9%2585%25D9%258A%25D9%2585%2520%25D8%25A7%25D9%2584%25D9%2585%25D9%2582%25D8%25A7%25D9%258A%25D9%258A%25D8%25B3.doc&ei=_Z9LUb6DK4OXO_DjgOgK&usg=AFQjCNG7_7AIXWSGbuHSKxKeBZHE4_71IQ&bvm=bv.44158598,d.ZWU [Accessed: March 1, 2014].
- Akhdar, F. (2005) تجربة المملكة العربية السعودية في إلحاق الصم بالتعليم العالي: ورقة عمل مقدمة لندوة [The Saudi experiment in enrolling the Deaf in higher education: A paper Submitted to the Special Education Conference at King Saud University 29-30 November 2005]. Available from: http://ipac.kacst.edu.sa/edoc/1427/159139_1.pdf [Accessed: February 6, 2013].
- Akhdar, F. M. (2014) تطبيق تجربة إلحاق الطالبات الصم بالتعليم العالي بالمملكة العربية السعودية (2014) [Applying the experiment of enrolling Deaf students in higher education in the Kingdom of Saudi Arabia], *Almanal Magazine*. Available from: <http://www.almanalmagazine.com/%D8%AA%D8%B7%D8%A8%D9%8A%D9%82-%D8%AA%D8%AC%D8%B1%D8%A8%D8%A9-%D8%A5%D9%84%D8%AD%D8%A7%D9%82-%D8%A7%D9%84%D8%B7%D8%A7%D9%84%D8%A8%D8%A7%D8%AA-%D8%A7%D9%84%D8%B5%D9%85/> [March 12, 2016].
- Al-Abodi, A. (2010) مقررات متكاملة تعتمد «الوسطية» وتلبي حاجات سوق العمل: المشروع الشامل لتطوير المناهج [Integrated decisions depend on «moderation» and meet the needs of the labour market: The comprehensive project for the development of the curricula]. *Almarefh*, 12-10-2010. Available from: http://www.almarefh.net/show_content_sub.php?CUV=375&SubModel=132&ID=745 [Accessed: July 3, 2016].
- Al-Abideen, K. S. F. (2010) مشكلات مناهج القراءة والكتابة للصفوف الثلاثة الأولى في معاهد الأمل في مدينة جدة [The problems of reading and writing curricula for the first three grades in Al Amal Institutes for Deaf student in the city of Jeddah]. (Unpublished MA Dissertation), Saudi Arabia: King Saud University.
- Al-Ageel, A. A. (2005) سياسة التعليم ونظامه في المملكة العربية السعودية [Education policy and its system in the Kingdom of Saudi Arabia], Riyadh: Al-Rushd.
- Al-Aktar, M. A. (2011) دراسة مقارنة بين مؤشرات مخرجات تعليم البنين ومؤشرات مخرجات تعليم البنات [A comparative study between the indicators of boys' education outputs and the indicators of girls' education outcomes]. A study conducted on 22 February 2011 for the Planning and Development Department of the General Administration of Education at Madina El Monawara Region. Available from: https://docs.google.com/document/d/1vVL5koxbQcBADf7e7Lzi_00ZUuDcrQ9UNjhRZWjjZAY/preview?pref=2&pli=1 [Accessed: March 28, 2016].

- Al-Alwan, A., Bomoza, A., Al.Marhon, H., Al.Hazani, S., Shaban, M., Al.Ali, M. & Al.Farag, M. (2011) غذائي مهم لصحة أسناني [My diet is important for the health of my teeth] [Poster], King Saud University.
- Al-Amri, Q. S. A. (2009) مشكلات تطبيق مناهج التعليم العام في معاهد وبرامج الامل الابتدائية بمدينة جدة [The problems of applying the general education curricula in Al Amal schools and programs in the city of Jeddah from the point of view of the teachers and the administrators]. (Unpublished MA Dissertation), Saudi Arabia: King Saud University.
- Alarabiya (2004) "الإلزامي" السعودية.. إقرار التعليم [Saudi Arabia: Adoption of education "compulsory"], Available from: Alarabiya Wednesday 16 June 2014. Website: <https://www.alarabiya.net/articles/2004/06/16/4388.html> [Accessed: March 25, 2017].
- Al-Balwai, L. (2015) حال البنات في المدارس [Status of girls in schools]. Alarabiya. Available from: <http://www.alarabiya.net/ar/saudi-today/2015/02/11/%D8%AD%D8%A7%D9%84-%D8%A7%D9%84%D8%A8%D9%86%D8%A7%D8%AA-%D9%81%D9%8A-%D8%A7%D9%84%D9%85%D8%AF%D8%A7%D8%B1%D8%B3-.html> [Accessed: April 18, 2016].
- Al-Bekar, F. (2013) الزامية التعليم في المملكة بين وزارة التربية والتعليم والشيخ السناني... أهلاً بالأمية مرة [Compulsory education in the Kingdom between the Ministry of Education and Al-Sheikh Al-Sinani: Illiteracy.. Welcome back!]. Al Jazirah Newspaper, issue 15029. Available from: <http://www.al-jazirah.com/2013/20131121/ar2.htm> [Accessed: March 19, 2016].
- Al-Dabas, N. S. (2008) بداية تعليم الصم في المملكة [The beginning of deaf education in the Kingdom], Al Jazirah Newspaper, Friday 30/05/2008, Issue 13028. Available from: <http://www.al-jazirah.com/2008/20080530/rj11.htm> [Accessed: February 19, 2014].
- Al-Dahar, N. A. (2002) بدايات الحياة العلمية والأدبية للمرأة في المدينة المنورة [The beginnings of scientific and literary life for women in Al-MedinaEl Monawara]. Journal of Centre of Medina Research and Studies.
- Al-Dakhil, A. (2015) استهدفت الطالب والمعلم والمدرسة عزام الدخيل. فترة وجيزة وإنجازات كبيرة [Targeted the student, the teacher and the school Azzam Al-Dakhil .. Brief period and great achievements and promising decisions], in H. Al-Zamil, (2015). Almarefh, 30 June 2015. Available from: http://www.almarefh.net/show_content_sub.php?CUV=438&SubModel=239&ID=2504 [Accessed: June 20, 2016].
- Al-Dimashgi, E. O. (2002) تفسير ابن كثير: (سورة الإسراء: 106) [Tafsir Ibn Kathir] (Al-Isra verse 106), website: http://library.islamweb.net/newlibrary/display_book.php?flag=1&bk_no=49&ID=2 [Accessed: February 13, 2017].
- Al-Esa, M. S. A. (2010) تطور نظام التعليم في المملكة العربية السعودية (1918-1995م) [The development of the education system in the Kingdom of Saudi Arabia: 1918-1995]. Riyadh: Al-Esa.
- Al-Fadhli, A. (2011) مختصر الصرف [Summary of Sarf], Lebanon: Dar Al Kalam <http://download-learning-pdf-ebooks.com/9779-free-book> [Accessed: July16, 2017].

- Al-Gamdi, M. (2015) «المكفوفون» و«الصم» .. حطموا قيود الإعاقة بإرادتهم وتخرجوا من الثانوية بامتياز [Smashed disability restrictions willingly and graduated from high school with distinction... «blind» and «Deaf and dumb» .. No place for them in Saudi universities!], *Al-Riyadh*, no.17236, September 2 2015. Available from: <http://www.alriyadh.com/1078645> [Accessed: March 14, 2016].
- Al-Habib, H. (2016) في جامعة الملك سعود برنامج التعليم العالي للصم (*Higher education programme for Deaf students in King Saud University*) [Twitter interview by N. Basonbul] Saudi 26 June 2016.
- Al-Hagbani, N. (2013) السعودية تنجح في خفض نسبة الأمية إلى 4% خلال 40 عاما [Saudi Arabia succeeds in reducing the illiteracy rate to 4% in 40 years]. *Alarabiya*, 25 November 2013. Available from: <http://www.alarabiya.net/ar/saudi-today/2013/11/25/%D8%A7%D9%84%D8%B3%D8%B9%D9%88%D8%AF%D9%8A%D8%A9-%D8%AA%D9%86%D8%AC%D8%AD-%D9%81%D9%8A-%D8%AE%D9%81%D8%B6-%D9%86%D8%B3%D8%A8%D8%A9-%D8%A7%D9%84%D8%A3%D9%85%D9%8A%D8%A9-%D8%A5%D9%84%D9%89-4-%D8%AE%D9%84%D8%A7%D9%84-40-%D8%B9%D8%A7%D9%85%D8%A7%D9%8B.html> [Accessed: June 12, 2016].
- Al-Hameed, M., Zedah, M., Al-Otaibi, B. & Motwaly, N. (2007) التعليم في المملكة العربية السعودية: رؤية الحاضر واستشراف المستقبل [Education in the Kingdom of Saudi Arabia: Vision of the present and foreseeing the future]. Riyadh: Al-Rashed.
- Al-Harbi, M. H. (2007) الطلاب والطالبات دعوا الى تنفيذ القرارات الخاصة بهم: كليات جدة تتجاهل الصم [The students were invited for the implementation of their own decisions: Jeddah's colleges ignore the Deaf], *Okaz*, no. 2205, Sunday, July 1 2007. Available from: <http://www.okaz.com.sa/okaz/osf/20070701/Con20070701122073.htm> [Accessed: April 2, 2016].
- Al-Hugail, S. A. (1993) التعليم الابتدائي في المملكة العربية السعودية (*Primary education in the Kingdom of Saudi Arabia*). Saudi Arabia: Al-Shareef.
- Al-Humoud, A. A. (2015) واقع تنظيمات مناهج اللغة العربية بالمملكة العربية السعودية [The reality of the organizations of the Arabic language curricula in the Kingdom of Saudi Arabia]. *Al-Jazirah*, Wednesday, 17 June 2015. Available from: <http://www.al-jazirah.com/2015/20150617/rj5.htm> [Accessed: September 23, 2015].
- Al-islam (2017) *The Literal and Figurative Definition of Jurisprudence*, available online from Al-islam organisation, website: <https://www.al-islam.org/the-basics-of-islamic-jurisprudence-hassan-al-ridai/literal-and-figurative-definition-jurisprudence> [Accessed: March 20, 2017].
- Al-islam (2017a) *Unity of Allah (Tawhid)*, available online from Al-islam organisation, website: <https://www.al-islam.org/allah-the-concept-of-god-in-islam-a-selection-yasin-al-jibouri/unity-allah-tawhid> [Accessed: March 20, 2017].
- Al-Karif, B. (2004) التعليم في السعودية: من الكتاتيب إلى المدارس النظامية عبر عقود من الكفاح والمعاناة [Education in Saudi Arabia: from the manuscripts to the systematic schools through decades of struggle and suffering] من 65 ألف طالب قبل نصف قرن إلى 5 ملايين طالب وطالبة حاليا

- Arabia: From the 'Katateeb' to regular schools through decades of struggle, suffering and fear, from 65 thousand students half a century ago to 5 million students currently], *Alsharg Alawsat*, no. 9431, 23 September 2004. Available from: <http://archive.aawsat.com/details.asp?issueno=9165&article=256735#.V317yP36umR> [Accessed: July 6, 2016].
- Al-Kuzama, A. (2008) *الصم وتحديات - حلول ومقترحات من واقع رؤية تطبيقية لتجربة التحاق الطالبات (Difficulties, challenges, solutions and suggestions from the reality of a practical vision for the enrolment of female Deaf students' experiences in Makkah College)*. A paper presented at *the Eighth Forum Disabled Parents Association: Gulf Disability Society*, 18-20 March 2008. Available from: http://www.gulfkids.com/pdf/Gulf_Eight_13.pdf [Accessed: February 16, 2014].
- Almaany (2016) *معنى كلمة غُلام [The meaning of the word 'boy']*. Available from: <http://www.almaany.com/ar/dict/arar/%D8%BA%D9%84%D8%A7%D9%85/> [Accessed: July 14, 2016].
- Al-Mahdi, J. (2006) *خادم الحرمين يرسم سياسة التعليم على أساس تعزيز «الأمن الفكري» بين الطلاب (Servent of Harameen draws the education policy based on the promotion of «intellectual security» between male and female students)*. Riyadh, no 13907, 22 July 2006. Available from: <http://www.alriyadh.com/173329> [Accessed: March 20, 2016].
- Al-Mansour, A. H. (2005) *بريدة داخل الأسوار وخارجها [Buraidah Inside and Outside the Walls]*. Riyadh: Al-Guraisy.
- Al-Matroudi, K. E. (1995) *مشكلات منهج معاهد الأمل الابتدائية للصم في المملكة العربية السعودية وجهة نظر المعلمين والمعلمات [The Problems of the Curriculum of Al Amal Primary Institutes for the Deaf in the Kingdom of Saudi Arabia from the Point of View of the Teachers]*. (Unpublished MA Dissertation), Saudi Arabia: King Saud University.
- Al-Moosa, N. (2005) *تجربة المملكة العربية السعودية دمج الأطفال ذوي الاحتياجات الخاصة في المدارس العادية, [Saudi Arabia's experiment of integrating children with special needs in regular schools]*. King Saud University. Available from: <http://faculty.ksu.edu.sa/altamimi/3851/%D8%A7%D9%84%D9%85%D9%88%D8%B3%D9%89%20-%D9%85%D8%B3%D9%8A%D8%B1%D8%A9%20%D8%A7%D9%84%D8%AA%D8%B1%D8%A8%D9%8A%D8%A9%20%D8%A7%D9%84%D8%AE%D8%A7%D8%B5%D8%A9.pdf> [Accessed: March 24, 2016].
- Al-Moosa, N. (2008) *مسيرة التربية الخاصة في المملكة العربية السعودية من العزل إلى الدمج [The march of Special Education in the Kingdom of Saudi Arabia from isolation to integration]*. Dubai: Dar Al-Kalm.
- Al-Moosa, N. (2014) *تجربة المملكة العربية السعودية في مجال دمج التلميذ ذوي الاحتياجات التربوية (Saudi Arabia's experiment of integrating children with special needs in regular schools)*. A paper submitted to *the International Exhibition and Forum for Education 2014 under the title: (Special Education sustainable development in a changing world) held in 10-04 / 4/2014*. Available from: http://www.slideshare.net/IEFE_SA/17-31294131 [Accessed: March 28, 2016].

- Al-Mulhim, E. S. (2013, 2014) رحلة إلى البحر [A trip to the sea]. Available online: <http://www.youtube.com/watch?v=X52Tbg7yalk> [Accessed: March 18 2014]. The story from Al- Mulhim, E. S. (2013, 2014) نموذج مقترح لقصة للأطفال الصم بطريقة ثنائية اللغة/ ثنائية الثقافة [A Proposed Model for a Story for Deaf Children in a Bilingual / Bicultural Strategy] (Unpublished MA Dissertation) Saudi Arabia: King Saud University.
- Al-Munjad (2016) متى كانت بداية الإسلام؟ [When was the beginning of Islam?]. Islamqa. Available from: <https://islamqa.info/ar/1985> [Accessed: July 2, 2016].
- Al-Mutairi, M. (2009) السعودية: عودة إلى فصل مقررات تعليم البنات عن البنين [Saudi Arabia: Back to the separation of the curricula of girls' education from the curricula of boys' education]. Available from: <http://arabic.arabianbusiness.com/business/education/2009/aug/22/26505/> [Accessed: March 28, 2016].
- Al-Nagy, S. A. M. & Al-Rayes, T. S. (2013) طرق تدريس القراءة الشائعة لدى معلمي الصم في المرحلة الابتدائية بمدينة الرياض [The popular methods of teaching reading by teachers (male) of Deaf students in the primary stage in the city of Riyadh], *Journal of Educational Science*, vol. 25, no. 1, pp.111-150. Available from: http://jes.ksu.edu.sa/sites/jes.ksu.edu.sa/files/attach/mjl_llwm_ltrbwy_25-1.pdf [Accessed: May 10, 2016].
- Al-Obeidi, G. S. (1986) أضواء على مسيرة التعليم والثقافة في عهد الملك عبد العزيز [Insights on the cultural and educational progress in the Era of King Abdul Aziz], Riyadh: National Guard, King Khalid Military College, p.15. Cited in M., Al-Hameed, M., Zeadah, B. Al-Otaibi, & N. Motwaly, (2007) التعليم في المملكة العربية السعودية: رؤية الحاضر واستشراف المستقبل [Education in the Kingdom of Saudi Arabia: Vision of the present and foreseeing the future]. Riyadh: Al-Rashed.
- Al-Ofi, E. H. (2013) مشكلة التقويم المستمر في المرحلة الابتدائية وعلاجه من منظور التربية الإسلامية [The problem of continuous assessment in the primary stage and its treatment from the perspective of Islamic education]. Personal blog. Available from: <https://ahmadalofi.wordpress.com/-مشكلة-التقويم-المستمر-في-المرحلة-الاب> [Accessed: March 17, 2016].
- Al-Otaibi, A. A. B. (2011a) واقع تطبيق مناهج التعليم العام على التلاميذ الصم في المرحلة الابتدائية من وجهة نظر المعلمين وأولياء الأمور [The reality of applying the general education curricula with Deaf students in the primary stage from the point of view of the teachers and parents]. (Unpublished MA Dissertation), Saudi Arabia: King Saud University.
- Al-Othman, M. (2014) العثمان لـ«الرياض»: أعداد الصم في المملكة تتراوح بين 350 و450 ألف شخص [Al-Othman TO «AlRiyadh»: The number of Deaf people in the Kingdom ranges between 350 and 450 thousand]. *Alriyadh*, Thursday 18 December 2014, issue 16978. Available from: <http://www.alriyadh.com/1004669> [Accessed: April 16, 2016].
- Al-Qahtani, S. (2014) تاريخ تعليم الصم في السعودية [The history of deaf education in Saudi Arabia] [Whats App interview by N. Basonbul] Saudi Arabia, 16 February 2014.
- Al-Qahtani, W. M. (2012). منهج لغتي الجميلة لصفوف المرحلة الابتدائية العليا للفصل الدراسي الأول لعام 1433/1434هـ. دراسة نقدية

- higher primary stage for the first academic term for the year 2012/2013: A critical study]. Paper presented in *the conference of the Arabic language and its manners in public education curricula between the reality and what is hoped*, held at the Faculty of Arabic Language and Social Studies between 26-27/12/ 2012.
- Al-Qufaily, A. M. (2014) مشكلات تدريس منهج لغتي الجميلة من وجهة نظر معلمي اللغة العربية في (2014) [The problems of teaching the *My Beautiful Language* curriculum from the point of view of the Arabic language teachers from the educational region of Al-Qaseem and the suggestions to solving those problems], *Journal of Psychology and Education*, Faculty of Education, Menofia University, Egypt.
- Al-Rabah, K. S. & Alsagar, F. A. (2009) مساواة الجنسين في الفرص التعليمية بين الجنسين [Gender equality in educational opportunities between the two sexes]. A paper presented at *the Educational Conference held in Tunisia under the auspices of the United Nations Educational, Scientific and Cultural Organisation UNESCO*, 10 January 2009. Saudi Press Agency. Available from: <http://www.spa.gov.sa/viewstory.php?lang=ar&newsid=623665> [Accessed: March 19, 2016].
- Al-Rayes, S. & Al-Monai, O. (2014) الفهم القرائي والتعبير الكتابي لدى الطلاب الصم الملتحقين "دراسة ميدانية" [Reading comprehension and writing composition for Deaf students matriculated at technical colleges at the Technical and Vocational Training Corporation in Saudi Arabia: "Field Study"], *Journal of Special Education and Rehabilitation - Special Education and Rehabilitation Foundation - Egypt*.
- Al-Rayes, T. (2016) [The higher education program for Deaf and hard-of-hearing students]. Available from: <http://deaf.ksu.edu.sa/ar/node/93> [Accessed: April 3, 2016].
- Al-Rayes, T. S. (2006) الفلسفة والاستراتيجيات (Bilingual/Bicultural): ثنائي اللغة/ثنائي الثقافة [Bilingual / Bicultural] as the latest global trends in the deaf education: Its philosophy, strategies and obstacles of its implementation in Al-Amal Schools and Inclusion Programmes], A theoretical research presented in the Seventh Conference of the Arab Federation in Cairo: The Egyptian Arabic Republic.
- Al-Rayes, T. S. & Al-Awad, H. (2013) فعالية تطبيق إستراتيجية (نظرة عامة تمهيدية – عرض – في تحسين مهارات الفهم القرائي الحرفي المباشر للطالبات (Preview-View-Review) مراجعة [Effectiveness of applying preview-view-review strategy in improving literal comprehension skills for reading for Deaf students at hope institute in the west of Riyadh], *Journal of Educational and Psychological Sciences*, vol. 6, no 2. Available from: <http://publications.qu.edu.sa/ojs/index.php/edu/article/view/780/740> [Accessed: March 25 2016].
- Al-Sadhan, A. N. (2006) بداية تعليم البنات في عهد الملك سعود [The beginning of the education of girls in the reign of King Saud], *Scientific Symposium of the history of King Saud bin Abdul Aziz Al Saud* held by the King Abdul Aziz Foundation in 5-7 November 2006 Research, vol. 1.

- Al-Saloom, H. E. (1991) *التعليم العام في المملكة العربية السعودية* [*Public education in the Kingdom of Saudi Arabia*], Washington: International Graphic Press.
- Al-Sayed, S. (1995) *استراتيجيات وطرق البحث الاجتماعي* [*Strategies and methods of social research*], Riyadh: Al-Shagree.
- Al-Sergani, R. (2006) *القراءة منهج حياة* [*Reading is a way of life*], Cairo: Read Foundation. Available from: <http://www.saaid.net/Doat/hasn/30.htm> [Accessed: February 21, 2014].
- Al-Shamekh, M. A. (1985) *التعليم في مكة والمدينة آخر العهد العثماني* [*Education in Mecca and Medina at the end of the Ottoman era*]. 3rd ed, Riyadh: Dar Al Uloom.
- Al-Sheim, T. (2012) *واقع التقويم المستمر لتلاميذ الصفوف العليا بالمرحلة الابتدائية في مقررات العلوم الشرعية* [*The reality of the continuous assessment of higher grades students in primary school in forensic science curricula*]. (Unpublished MA Dissertation). College of Education, King Saud University, Riyadh.
- Al-Suikan, A. N. (2010) *معوقات تطبيق التقويم المستمر لمهارات اللغة العربية في الصفوف العليا من المرحلة الابتدائية في منطقة القصيم من وجهة نظر المشرفين التربويين والمعلمين* [*Obstacles to the application of continuous assessment of Arabic language skills in the higher grades of the primary stage in Al-Qaseem area from the viewpoint of the educational supervisors and the teachers*]. College of Social Science, Imam Muhammad ibn Saud Islamic University, Riyadh. <http://libback.uqu.edu.sa/hipres/ABS/ind11038.pdf> [Accessed: January 05, 2015].
- Al-Sunbul, A., Al-Kateeb, M., Mutwali, M. & Abduljawad, N. (1996) *نظام التعليم في المملكة العربية السعودية* [*The education system in Saudi Arabia*], Ryadih: Dar Al-Karji, p.102.
- Al-Thubaity, M. (2013) *"التربية" تتجه إلى تطبيق لائحة "التعليم الإلزامي"* [*"The Education" tends to apply decision of "compulsory education"*], available from: *Alwatan*, 07th March 2013, website: http://www.alwatan.com.sa/Local/News_Detail.aspx?ArticleID=136408&CategoryID=5 [Accessed: March 25, 2017].
- Al-Turky, Y. (2005) *تربية وتعليم التلاميذ الصم وضعاف السمع* [*Educating Deaf and hard-of-hearing students*]. Riyadh: Al-Turky.
- Al-Turky, Y. (2006) *التعليم الثنائي للتلاميذ الصم: (ثنائي اللغة وثنائي الثقافة)* [*Bilingual education for Deaf students: (Bilingual / bicultural)*]. Riyadh: Al-Obeikan.
- Al-Turky, Y. (2007) *'الخدمة المدنية تعتمد وظائف مترجمي لغة الإشارة للصم'* [*The civil service jobs based sign language interpreters for the Deaf*]. *Alriyadh* 8 April, no. 14167. Available from: <http://www.alriyadh.com/2007/04/08/article240013.html> [Accessed: February 6, 2014].
- Al-Turky, Y. (2008) *ثقافة مجتمع الصم* [*The culture of the deaf community*]. Riyadh: Al-Turky.
- Al-Twajeri, F. A. (2010) *توظيف المعوقين المؤهلين في القطاع العام والخاص: العوائق والحلول دراسة* [*A study of employing qualified people with disabilities in the public and private sectors: Barriers and solutions*]. A series of Research and Studies, no. 73. Saudi Arabia: Ministry of Social Affairs, National Centre for Social and Development Studies.

References

- Al-Wahib, A. S. (2009) خدمات التدخل المبكر للأطفال الصم وضعاف السمع: أهميتها ومدى توفرها من وجهة نظر الاختصاصيين بمدينة الرياض [Early intervention services for Deaf children and hearing impaired: Their importance and the extent of their availability from the point of view of specialists in the city of Riyadh] (MA Dissertation). Riyadh: King Saud University. Available online: <http://dr-banderlotaibi.com/new/admin/uploads/2/1092010.pdf> [Accessed: February 16, 2014].
- Al-Walaa Islamic (2003) أجمعت عائلتي على مائدة الطعام [My family met at the dinner table] [Poster]. *Al-Walaa Islamic Magazine*. Available from: <http://www.aafaq.org/alwala/news.php?readmore=768> [Accessed: December 14, 2012].
- Al-Zahrani, A. (2012) قبول الصم في تخصصات جديدة بجامعة الملك سعود [Accept Deaf in New Programmes at King Saud University]. Available from: Al-Riyadh 16007. www.alriyadh.com/2012/04/21/article729058.html [Accessed: February 16, 2014].
- Al-Zahrani, A. & Al-Onizi, M. (2012) واقع استخدام المعلمين لطرق التواصل في معاهد وبرامج الصم [The reality of the teachers use of the communication methods in Primary Institutes and Programmes of the Deaf and hard-of-hearing and its relationship with some variables in the city of Riyadh], *Psychological Counselling*, no.30, January 2012.
- Al-Zubairy, S. A. (2015) الفروق في الفهم القرائي لدى التلميذات الصم زارعات القوقعة في المرحلة الابتدائية بمدينة الرياض [Differences in reading comprehension of Deaf students with cochlear implants in primary school in Riyadh], *Special Education and Rehabilitation*, vol. 3, no. 9, pp. 319-358.
- Anon (2013) مناهج الصم في مدارس الصم الخاصة في المملكة العربية السعودية [Deaf Curricula in Special Schools for the Deaf in the Kingdom of Saudi Arabia] [informal interview by N. Basonbul] Saudi Arabia, 27 October 2013.
- Anon (2014a) إحصائية الأشخاص الصم وتوظيفهم في المملكة العربية السعودية [The Statistics of Deaf people and their employment in the Kingdom of Saudi Arabia] [Phone interview by N. Basonbul] Saudi 8 February 2014.
- Anon (2014b) الدراسة في قسم الإعاقة السمعية في جامعة الملك سعود: منذ خمسة عشر عاما [Studying in the Hearing Impairment Department in King Saud University: Fifteen Years Ago] [formal email interview by N. Basonbul] Saudi 14 February 2014.
- Aswaqcity (2012) دورات الرسم والأشغال الفنية للأطفال [Drawing and art works courses for children]. Available from: <http://www.aswaqcity.com/thread939407.html> [Accessed: December 13, 2012].
- Baheth (2016) غلم (لسان العرب) [Boys (Arabs tongue)]. Available from: <http://www.baheth.info/all.jsp?term=غلام> [Accessed: July 2, 2016].
- Bin-dohaish, A. A. (1986) الكتاتيب في الحرمين الشريفين وما حولهما [Katateeb in and the two holy mosques and around them], Mecca: Alnahda alhaditha. Available from: <http://download-history-pdf-ebooks.com/freedownload7859> [Accessed: July 12, 2016].
- Broonzyah (2012) الآن.. حفل طيور الجنة في جدة 28 مارس [Now.. Touer Aljanah ceremony in Jeddah, March 28]. Available from:

- <http://www.broonzyah.net/vb/t248145.html> [Accessed: December 13, 2012].
- Centre of Statistical Information and Documentation Educational (1986) فصول في (1986) [Chapters in the history of education in the Kingdom (special education) documentary statistician], Kingdom of Saudi Arabia, the Ministry of Education, Riyadh.
- El-Zraigat, I. A. F. (2011) تقييم مهارات القراءة لدى الطلبة المعاقين سمعياً في الأردن وعلاقتها ببعض (2011) [Assessing reading skills among hearing-impaired students In Jordan and its relation to some variables], Faculty of Education Sciences, University of Jordan, *Studies: Educational Sciences*, vol. 38, no 4, pp. 1276-1292. Available from: <https://journals.ju.edu.jo/DirasatEdu/article/viewFile/2673/2397> [Accessed: October 5, 2016].
- Fayyad, H. M. (2008) تنمية مهارات الفهم في القراءة عند المعوقين سمعياً للمرحلة- الثانوية الندوة العلمية (2008) [The development of comprehension skills in reading with the acoustically disabled for secondary stage] Eighth International Scientific Symposium of the Arab Federation for bodies operating in the care of the Deaf - Riyadh April 28-30] pp. 259-317. Available from: http://www.gulfkids.com/pdf/Deaf_BC5.pdf [Accessed: April 28, 2016].
- Habash, N. Y. (2010) معالجة طبيعة اللغة العربية (2010) [Arabic natural language processing], Morgan & Claypool.
- Hakim, A. A (2016) الجذور التاريخية لنظام التعليم السعودي (2016) [The historical roots of the Saudi education system]. Umm Al-Qura University. Available from: <http://uqu.edu.sa/page/ar/5208> [Accessed: March 17, 2016].
- Hssen (2012) مشروع تحسين الأداء التعليمي لطلاب وطالبات المرحلة الابتدائية (2012) [The project of improving the educational performance of boys and girls in primary school]. Hssen, The Saudi Ministry of Education. Available from: <http://www.hssen.com/articles.php?action=show&id=4> [Accessed: March 17, 2015].
- Imam Ibn Al-Jawzi, (1984) سيرة ومناقب عمر بن عبدالعزيز: الخليفة الزاهد (1984) [Biography and virtues of Omar bin Abdul Aziz: Al khalifa al zahid], Explain the book and commented upon Zarzoor, N. (1984), Lebanon: Dar Alkutoob al elmiah. Available from: <https://archive.org/details/WAQ1444> [Accessed: October 03, 2016].
- Islam (Trans.) (2009) العلق: القرآن الكريم (2009) [The Holy Quran: Al-'Alaq] (verse 1), website: <http://quran.al-islam.com/Page.aspx?pageid=221&BookID=15&Page=459> [Accessed: February 3, 2014].
- Islam (Trans.) (2009) الزمر: القرآن الكريم (2009) [The Holy Quran: Az-Zumar] (verse 9), website: <http://quran.al-islam.com/Page.aspx?pageid=221&BookID=15&Page=459> [Accessed: February 3, 2014].
- Islam (Trans.) (2009) الحجرات: القرآن الكريم (2009) [The Holy Quran: Al-Hujurat] (verse 13), website: <http://quran.al-islam.com/Page.aspx?pageid=221&BookID=15&Page=459> [Accessed: July 2, 2016].

- Islamic library (2016) *Education places for Muslims*. Available from: http://library.islamweb.net/newlibrary/display_umma.php?lang=&BabId=5&ChapterId=5&BookId=298&CatId=201&startno=0 [Accessed: July 2, 2016].
- Jalal, B. (2010) *Looking after the disabled among heavenly religions*, Publications of Assiut University Women's Assembly for Development, Presented at Rally Forum for the Disabled' Rights. Website: Gulf children with special needs. Site for Studies and Research of persons with disabilities. Available from: <http://www.gulfkids.com/pdf/BK-reaeah.pdf> [Accessed: May 28, 2013].
- Management of Auditory Handicap (2014) *The development of Deaf and hard-of-hearing education in the Kingdom*. Saudi Ministry of Education, Department for the Management of Auditory Handicap. Available from: <http://www.se.gov.sa/hi/2.htm> [Accessed: February 6, 2014].
- Management of Auditory Handicap (2015) *Mobile audiometric testing unit*. Saudi Ministry of Education, Department for the Management of Auditory Handicap. Available from: <https://www.moe.gov.sa/ar/Ministry/BoysEducationAgency/SpecialEducation/Pages/unitmeasure.aspx> [Accessed: July 15, 2016].
- Management of Auditory Handicap (2017) *Management of Auditory Handicap*. Saudi Ministry of Education, Department for the Management of Auditory Handicap. Available from: <http://departments.moe.gov.sa/EducationAgency/RelatedDepartments/boysSpecialEducation/The%20departments/Auditory%20disability%20management/Pages/default.aspx> [Accessed: February 6, 2017].
- Mansi, M. A., Ahmad, M. & Demiaty, F. E. (1990) *The reasons for the absence of male and female students from schools in the light of the views of secondary students: Psychological and educational study*, *Journal of Educational Sciences*, King Abdul-Aziz University, vol. 3. pp.301-372.
- Maymsh, M. F. (1998) *The Ministry of Education under its first minister, Prince Fahd bin Abdul-Aziz*. Umm Al-Qura University.
- Muner, A. A. (2015) *'Katateeb' Mecca in the Ottoman era*, *Alhayat*, Saturday 11 April 2015. Available from: <http://www.alhayat.com/Articles/8490714/%D9%83%D8%AA%D8%A7%D8%AA%D9%8A%D8%A8-%D9%85%D9%83%D8%A9-%D9%81%D9%8A-%D8%A7%D9%84%D8%B9%D8%B5%D8%B1-%D8%A7%D9%84%D8%B9%D8%AB%D9%85%D8%A7%D9%86%D9%8A> [Accessed: July 3, 2016].
- Mursi, M. M. (1988) *Education in the Arab Gulf States*, Cairo: Book world.
- Nagawah, A. (2015) *'اللغة العربية واللهجة المحكية' [Arabic language and spoken dialect]* In Shahadah, H. D. (eds.), *اللغة العربية والصم،، مشكلة لها حلول [Arabic language and Deaf: problem has solutions]*. *Almanal*, May2015. Available from:

- <http://www.almanalmagazine.com/%D8%A7%D9%84%D9%84%D8%BA%D8%A9-%D8%A7%D9%84%D8%B9%D8%B1%D8%A8%D9%8A%D8%A9-%D9%88%D8%A7%D9%84%D8%B5%D9%85%D8%8C%D8%8C%D8%8C-%D9%85%D8%B4%D9%83%D9%84%D8%A9-%D9%84%D9%87%D8%A7-%D8%AD%D9%84%D9%88%D9%84> [Accessed: April 27, 2016].
- Sabri, A. (Ed.) (2008) مختصر صحيح الجامع الصغير [The Small Collection of Sahih alJaami as Sagheer], the authenticated version of that collection is by Shaykhs Al-Suyuti, J. & Albanian, M. Hadith no. 2784-3914, p. 216, Egypt: Alfa Company. Available from: http://www.tchalabi.com/doc/mukhtasr_sahih_jama_sagher.pdf [Accessed: July 10, 2016].
- Saqa, M. A. (2010) التفسير والإعجاز العلمي في القرآن الكريم ضوابط وتطبيقات [Tafseer and Scientific Miracles in the Holy Quran: Controls and applications], Syria: Dar Mohammed Al amin, available online: <http://mlffat.tafsir.net/files/3512.pdf> [Accessed: March 20, 2017].
- Saudi Arabia. The Saudi Ministry of Education (1979) تقرير إحصائي عن تعليم البنات (دور [A statistical report on girls' education (nurseries and pre-schools)], Riyadh: The General Presidency for Girls' Education, p.29.
- Saudi Arabia. The Saudi Ministry of Education, (1986) فصول في تاريخ التعليم بالمملكة: [Chapters in the history of education in the Kingdom: special education: A statistical view and documentary], the Educational Development, the Ministry of Education. Saudi Arabia, Riyadh.
- Saudi Arabia. The Saudi Ministry of Education (1996) تطوير التعليم في المملكة العربية السعودية [The development of education in the Kingdom of Saudi Arabia].A National Report on statistical information]. Available from: Statistical Information Centre and Educational Documentation, Riyadh. International Education Conference no 45. Held at Geneva.
- Saudi Arabia. The Saudi Ministry of Education, (2012, 2013b) A Saudi School Book. لغتي الجميلة للصف الثالث الابتدائي: الفصل الدراسي الثاني (كتاب الطالب), معاهد وفصول [My beautiful language for grade three: second academic term (student book), hope institutes and classes for the Deaf].
- Saudi Arabia. The Saudi Ministry of Education (2012, 2013a) A Saudi School Book. لغتي الجميلة للصف الرابع الابتدائي: الفصل الدراسي الأول (كتاب الطالب), معاهد وفصول [My beautiful language for grade four: First academic term (student book), Al-Amal Institutes and Classes of the Deaf]. Saudi Arabia: Al-Humaidi Textbook Publisher.
- Saudi Arabia. The Saudi Ministry of Education (2013, 2014) A Saudi School Book. لغتي الجميلة للصف الرابع الابتدائي: الفصل الدراسي الأول (كتاب الطالب), معاهد وفصول [My beautiful language for grade four: First academic term (student book)]. Saudi Arabia, Riyadh: National Office Printing Press Textbook Publisher.
- Saudi Arabia. The Saudi Ministry of Education (2016) نشأة الوزارة [The emergence of the Ministry], website:<http://www.moe.gov.sa/ar/about/Pages/MinistryDevelopment.aspx> [Accessed: July 10, 2016].

- Saudi Arabia. The Saudi Ministry of Education (2016) قرار وزاري رقم 159/27 في تاريخ 1424/03/19 [Ministerial decision no 27/159 in 20.5.2003 on applying the public curricula in Deaf schools]. Email correspondence to Basonbul, N. [09 April 2016].
- Saudi Arabia. The General Administration of Special Education (GASE) (2001) القواعد التنظيمية لمعاهد وبرامج التربية الخاصة بوزارة التربية والتعليم [The regulations of special education institutes and programs belonging to the Ministry of Education]. [online]. Available from: <http://edueast.gov.sa/portal/media/34/ZBU5N274VDDBNR4.pdf> [Accessed: February 7, 2014].
- Saudi Arabia. The General Administration of Special Education (GASE) (2014a) احصائيات التربية الخاصة: بنين للعام الدراسي 1433/1434هـ [Statistics of special education: Boys for the academic year 2012/2013]. Email correspondence to Basonbul, N. [02 January 2014].
- Saudi Arabia. The General Administration of Special Education (GASE) (2014b) احصائيات التربية الخاصة: بنات للعام الدراسي 1433/1434هـ [Statistics of special education: Girls for the academic year 2012/2013]. Email correspondence to Basonbul, N. [01 January 2014].
- Saudi Arabia. The General Administration of Special Education (GASE) (2016) تطور التربية الخاصة في المملكة العربية السعودية [The development of special education in the Kingdom of Saudi Arabia]. General Administration of Education in the region of Riyadh. Available from: <http://www.moe.gov.sa/AR/MINISTRY/BOYSEDUCATIONAGENCY/SPECIALIAEDUCATION/Pages/default.aspx> [Accessed: March 22, 2016].
- Saudi Arabia. The General Administration of Special Education (GASE) (2016a) احصائيات التربية الخاصة: بنين للعام الدراسي 1435/1436هـ [Statistics of special education: Boys for the academic year 2012/2013]. Email correspondence to Basonbul, N. [04 November 2016].
- Saudi Arabia. The General Administration of Special Education (GASE) (2016b) احصائيات التربية الخاصة: بنين وبنات للعام الدراسي 1435/1436هـ [Statistics of special education: Boys and girls for the academic year 2012/2013]. Available from: <http://www.moe.gov.sa/ar/Pages/StatisticalInformation.aspx> [04 October 2016].
- School document (2013) *The total numbers of Deaf primary, secondary and high school pupils in the Urban School for Deaf Girls 2 (USDG2) campus.*
- School document (2012) *A record of skills: Arabic skills, Grade 3, second term.*
- Shada (2015) التعليم تنشر إحصائية توضح انخفاض نسبة الأمية في المملكة [Education publishes statistics showing low rate of illiteracy in the Kingdom]. *Shada Electronic Journal*, 9 September 2015. Available from: <http://www.shada.sa/c-9294> [Accessed: May 16, 2016].
- Sunan Abu Dawood, (817AD) سنن أبو داود [Sunan Abi Dawood], vol. 16, book 26, hadith no. 3887, p: 35. Available from: http://ia801405.us.archive.org/14/items/waq105201/06_105206.pdf [Accessed: July 10, 2016].
- The Arab Dictionary of Gestures for the Deaf (ADGD) (2001) القاموس الإشاري العربي [The Arab dictionary of gestures for the Deaf], Bahrain.

References

- The General Administration for Education in Baha Region (2017) البدء بتسجيل أطفال الروضات [Start registering children in kindergartens]. Available from: <http://www.bahaedu.gov.sa/portal/?action=depnews&mid=747&id=58> [Accessed: February 6, 2017].
- The General Authority for Statistics (GAS) (2016) الدارسون في مراكز تعليم الكبار ومحو الامية [Learners in adult education centres and literacy]. General Secretariat of the Cooperation Council for the Arab States of the Gulf. Available from: <http://www.cdsi.gov.sa/ar/4001> [Accessed: May 18, 2016].
- The General Authority for Statistics (GAS) (2016a) المسح الديموغرافي [A demographic survey]. Available from: <http://www.stats.gov.sa/ar/4522> [Accessed: October 28, 2016].
- The Ministry of Education (1998) موسوعة تاريخ التعليم في المملكة العربية السعودية في مائة عام [Encyclopaedia of the history of education in the Kingdom of Saudi Arabia in a hundred years], vol. 3, p. 58. Riyadh.
- The Ministry of Health (2015) الإدارة العامة للتأهيل الطبي [The public administration of medical rehabilitation]. Available from: <http://www.moh.gov.sa/depts/Rehabilitation/Pages/mission.aspx> [Accessed: April 19, 2016].
- The Ministry of Labour and Social Development (2000) نظام رعاية المعوقين [The system of caring for the disabled]. Available from: <http://www.mosa.gov.sa/sites/default/files/14210923%20%D9%86%D9%90%D8%B8%D8%A7%D9%85%20%D8%B1%D8%B9%D8%A7%D9%8A%D8%A9%20%D8%A7%D9%84%D9%85%D9%8F%D8%B9%D9%88%D9%82%D9%8A%D9%86.pdf> [Accessed: April 19, 2016].
- The Ministry of Municipal and Rural Affairs (2012) نشأة المملكة العربية السعودية [The emergence of the Kingdom of Saudi Arabia]. Available from: <https://www.momra.gov.sa/About/KSA.PDF> [Accessed: October 5, 2016].
- Twitmail (2012) مسابقة الرسم [Drawing competition] [Poster]. Available from: <http://www.twitmail.com/email/222350389/11/%D9%85%D8%B3%D8%A7%D8%A8%D9%82%D8%A9-%D9%86%D8%A7%D8%AF%D9%8A-%D8%BA%D8%B1%D9%81%D8%A9-%D8%A7%D9%84%D8%B4%D8%B1%D9%82%D9%8A%D8%A9-%D8%AA%D9%88%D8%B3%D8%AA%D9%85%D8%A7%D8%B3%D8%AA%D8%B1%D8%B2-2012> [Accessed: December 12, 2012].

Appendixes

Appendix 1: Educational options for Deaf and hard-of-hearing pupils

In Saudi Arabia, there are reception, primary, secondary and high schools. Deaf and hard-of-hearing pupils have different educational options (Table A.1.1).

Table A.1.1: Educational options for Deaf and hard-of-hearing pupils

Classes and Programmes for Deaf pupils within Special Schools	Description of the Programme		Pupils
1	Special Schools also known as Alamal Institutes for the Deaf	<p>The schools are in separate buildings. In the past, they had residential facilities. They are usually in a compound which includes pre-schools, primary, secondary and high schools.</p> <p>Special schools exist only in some major cities such as Riyadh.</p> <p>The pupils are taught special curricula for Deaf pupils.</p>	<p>Deaf pupils with a hearing loss greater than 70+dBHL. IQ =Not less than 73-75 on a standardised IQ test.</p> <p>In reception, the pupils' ages are as follows: a). 3-4 years old in reception 1. b) 4-5 years old in reception 2, c) 5-6 years old in reception 3.</p> <p>Primary school pupils are no less than 6 years old and no more than 15 years old.⁷⁹</p>

⁷⁹ These age regulations apply to pupils who register in classes and programmes in both special and mainstream schools.

Appendix1

Classes and Programmes for Deaf pupils within Special Schools	Description of the Programme		Pupils
2	Multi-disability programme (Deaf pupils) within special schools	In this programme, Deaf curricula are taught in special schools for pupils with mental health issues.	Deaf pupils with complex disabilities such as Deaf pupils who have learning disabilities, visual impairments or autism, who are classified as not able to benefit from public education. Deaf pupils with a hearing loss greater than 70 dBHL. IQ =Not less than 73-75 on a standardised IQ test.
3	Alamal evening classes: Programmes attached to Alamal Institutes	These programmes are only for boys, because girls are not allowed to go out at night.	Deaf pupils with a hearing level of 70+ dBHL. IQ =Not less than 73-75 on the individual standardized tests. Pupils who are over the legal age to enter the school.
1	Special Programmes within mainstream schools also known as Alamal Programmes for the Deaf.	<p>The programmes are attached to mainstream schools but Deaf pupils study in separate classes and can meet with hearing students in social and sport activities and at breakfast time.</p> <p>These schools exist only in major Saudi cities and countryside areas.</p> <p>The recent plan of the Saudi Ministry of Education is to increase the number of such schools to help Deaf pupils integrate with the hearing community.</p> <p>The pupils are taught special curricula for Deaf pupils.</p> <p>There are no more than nine pupils in each special class and preferably no more than five in the primary grades.</p>	Deaf pupils with a hearing loss of 70+ dBHL. IQ =Not less than 73-75 on a standardized IQ test.

Appendix1

Classes and Programmes for Deaf pupils within Special Schools	Description of the Programme		Pupils
2	Alamal evening classes: Programmes attached to public schools	These programmes are only for boys, because girls are not allowed to go out at night.	Deaf pupils with a hearing level of 70+ dBHL. IQ =Not less than 73-75 on one the IQ individual standardized tests. Deaf pupils who are over the legal age to enter the school.
1	Inclusive schools	<p>Inclusive schools are usually for hard-of-hearing pupils. There are two types:</p> <p>a) Partial inclusion means that hard-of-hearing pupils study in special classes which are attached to mainstream schools.</p> <p>They study special curricula which are used in special schools for Deaf pupils. This inclusion allows them to integrate with hearing peers in extra-curricular activities and in some classrooms (sewing, sports, cooking, painting).</p> <p>b) Full inclusion means that all hard-of-hearing pupils are fully included in classes of hearing pupils in mainstream school, because they are able to hear with hearing aids and their academic results have proven that they are able to study with hearing peers.</p>	Hard-of-hearing pupils with a hearing level of 35-69 dBHL. IQ =Not less than 73-75 on one the IQ individual standardized tests.
2	Resource room programmes	These programmes are provided for hard-of-hearing pupils who study in the same classes as	Hard-of-hearing pupils with a hearing level of 26-40 dBHL

Appendix1

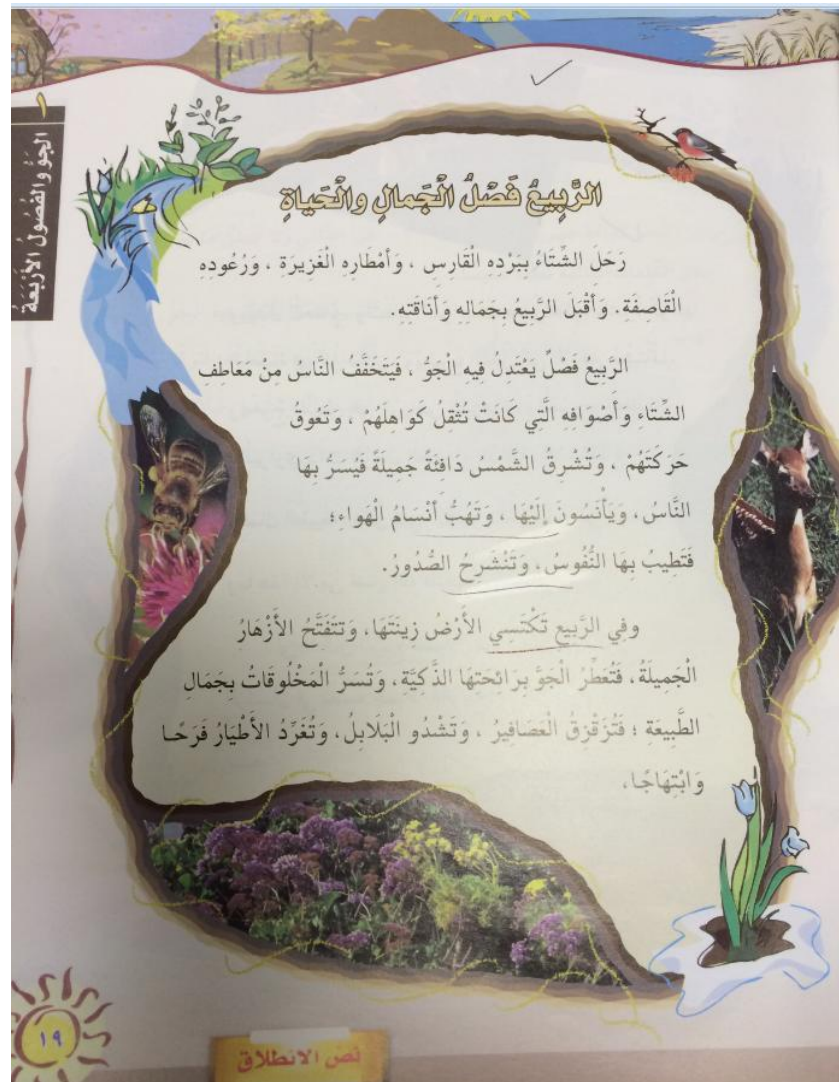
Classes and Programmes for Deaf pupils within Special Schools	Description of the Programme		Pupils
		hearing pupils and attend individual lessons within resource rooms for part of the day, where the teachers are specialists in hearing impairment (Deaf education). The teachers apply an individual educational plan for each pupil.	Hard-of-hearing pupils who have learning disabilities in any school subjects.

* Sources: GASE, 2001, 2016; Management of Auditory Handicap, 2015, 2016, 2017; the General Administration for Education in Baha Region, 2017.

Appendix 2: Example of a reading text from grade-four curriculum for Deaf pupils

Since the beginning of Deaf education in Saudi Arabia in 1964, Deaf pupils have followed several literacy curricula. In 2013, the Saudi Ministry of Education adapted the standard curriculum to form a curriculum for Deaf learners. Figure A.2.1 is from a reading text in the curriculum.

Figure A.2.1: Example of a reading text from the Grade 4 curriculum for Deaf pupils*



*Source: Saudi Ministry of Education, 2012, 2013a:19.

Appendix 4: Translated example of reading classroom observation transcript

Table A.4.1: Translated example of reading classroom observation transcript

<p>Observation day and date: Tuesday November 26, 2013.</p> <p>Time of the Observation: 9:30-11.</p> <p>Unit: "Young Muslim".</p> <p>Title of the lesson in the book: "Cooperation"</p> <p>Purpose of the lesson: To read the text on the board, learn the meaning of cooperation and give examples of cooperation from their own lives.</p> <p>Who was present: Teacher -Mrs Abrar; Number of pupils: 3. No absence.</p> <p>Researcher. Layout: The pupils in a line. The teacher used the whiteboard and image cards.</p>

	Teacher	Pupils	Deaf assistant
1	<p>Mrs. Abrar wrote the sentence on the board:</p> <p><i>In the street, there is cooperation between a man and a policeman.</i></p> <p>في الشارع، هناك تعاون بين الرجل والمرور.</p>		
2			The Deaf assistant switched off the light to obtain the pupils' attention and moved to the front of the pupils.
3		<p>One of the pupils makes a mistake, reading the written sentence in sign with unclear voice:</p> <p>POLICEMAN STREET BOY</p> <p>There is a policeman and a boy in the street.</p> <p>شرطة شارع ولد.</p>	
4	<p>She didn't fully observe the discussion as she was busy bringing in the worksheets, and she did not respond.</p>		<p>She signed:</p> <p>STREET COOPERATION MAN AND WOMAN TOGETHER</p> <p>In the street, there is cooperation between a man and a woman</p> <p>شارع تعاون في رجل و امرأة معاً.</p>

	Teacher	Pupils	Deaf assistant
			(Should be:) In the street, there is cooperation between a man and a policeman
5		All the pupils repeated what the Deaf assistant signed.	
6	<p>She seemed surprised at what the Deaf assistant signed and pointed to the word to show the Deaf assistant the word <i>policeman</i>.</p> <p>The teacher stood behind the pupils, pointed to the Deaf assistant and signed POLICEMAN, then she stood next to the board and put her finger under the word <i>policeman</i>.</p>		
7			She laughed and apologised to the pupils, clapped her head and repeated, reading the sentence correctly
8		All the pupils repeated what the Deaf assistant signed.	
9	<p>She said in sign supported Arabic (SSA):</p> <p>There is also <u>COOPERATION BETWEEN</u> man and woman in the <u>STREET</u>...but in this sentence, the <u>COOPERATION</u> is <u>BETWEEN</u> a man and a policeman.</p> <p>هناك أيضاً تعاون بين الرجل والمرأة في الشارع, لكن في هذه الجملة تعاون الرجل مع رجل المرور</p>		

Appendix 6: Semi-structured interview schedule

Participant record number: _____

Date of Interview: _____ Grade: _____

Hearing teachers:

Telephone interviews⁸²

- How do you feel the school year has gone?
- What have you been doing this year, particularly in regard to Deaf pupils' reading?
- Thinking about the year since last September, would you say you achieved what you had hoped to do? Can you explain?
- Can you tell me if there were any complications, absences or other matters which you felt upset your plans and your teaching?
- Now that you have had a year of working with PVR, what do you think of the PVR strategy? Can you give some feedback?
- In comparison to the PVR strategy, were there any new reading approaches which you tried out or were asked to try out? If so, what were they and how did it work out?
- If you compare the group of pupils you have taught this year using PVR with groups in previous years who did not have PVR, would you say their reading was better than average, about average, or worse than average compared to the pupils you usually teach?
- Thinking about the PVR strategy and my presentation last October, how do you feel about it as an strategy to be used in reading education for Deaf pupils?

⁸²These interviews were conducted in May 2014. Only two teachers were interviewed by phone as they were the only ones to answer us; the rest were asked these questions in the face-to face interviews.

Appendix 6 (cont.)

- Can you give some examples of how you think PVR might be better than what you did in previous years?
 - Is there anything that did not work? Were there any problems? Please explain.
 - Were you able to keep to the plan that we agreed together in October 2013 about using PVR, or did you have to make some changes?
 - I know it is difficult to remember, but it would be helpful to get estimates of how often you felt you used the PVR strategy ... month by month... So, could you fill the following tables?
- a)** How many reading lessons did you teach in each month with the PVR strategy?

Year	Month	Number of Lessons
2013	October	
	November	
	December	
2014	January	
	15-25/ 01/2014	Midterm term holiday ,first term
	February	
	March	
	22-29/3/2014	Midterm holiday, second term
	April	
	May	
	23May -31August	Summer holiday
Total lessons		

- b)** In the timetable, we planned that you would have a Deaf assistant twice a week. Did that happen? How many times did you have the Deaf assistant in your class?

Year	Month	Number of Lessons
2013	October	
	November	
	December	
2014	January	
	15-25/01/2014	Midterm term holiday, first term
	February	
	March	
	22-29/3/2014	Midterm holiday, second term
	April	
	May	
	23May-31August	Summer holiday
Total lessons		

You had a Deaf assistant during that time; how did that work?

- How did you find the experience of working with a Deaf assistant in the class?
- Do you think that the Deaf assistants supported you?
- How did the Deaf assistant work with Deaf pupils?
- What do you think the pupils like about having a Deaf assistant?
- What did you find useful when you used PVR? Could you give an example?
- What did you find could be a problem when you used PVR? Could you give an example?
- When did the Deaf assistant help you during reading lessons?
- What questions did you consider during the application of the PVR?
- Were you able to use the PVR strategy with the required reading book? Were you able to finish it?
- In your experience, what impact does the PVR strategy have on Deaf pupils' reading performance?

Appendix 6 (cont.)

- In your experience, how could PVR be improved?
- Would you like to continue using the PVR strategy next year? Why?
- What support or materials would help you to continue to use this method?

Face-to-face interviews⁸³

The two main themes were:

1. What strategies did you apply last year? and what did you learn from it about reading, signing, and the role of Deaf assistants?
2. What do you plan for the coming year and how you will use your experience of last year's project?
 - What have you learned through teaching Deaf pupils in the last academic year?
 - During the past year, you taught Deaf pupils who were in Grade 2/ 3/4; do you feel that they improved academically in aspects of education, such as maths, science, reading and writing?
 - Do you feel that this achievement is in line with what Deaf pupils are expected to achieve? Please explain.
 - Did recent events related to public health (the MERS virus) have an effect on the school and pupils' attendance?
 - What are your educational plans for the new school year?
 - What are the benefits will Deaf pupils obtain this year?
 - Are you going to teach the same group of pupils you taught last year or a different group?
 - Can tell me about the curriculum for this year?

⁸³These interviews were conducted in August and December 2014.

Appendix 6 (cont.)

- What are your expectations for your Deaf pupils this year?
- Do you expect that the Deaf assistant will take part in reading lessons with you this year? Please explain.
- Would you like to continue using the PVR strategy this year? Why?
- What are the things that you need from me as a researcher or from the school in order to help you to continue to use this method?

Deaf assistants:

Face-time interviews^{84, 85}

- How did you find the experience of working with a hearing teacher in the class?
- How did the Deaf pupils work with you in the class?
- Did you provide support to all the pupils or did you just support some of them?
- Which form of signing did you use with the teacher/ the pupils in the reading classes when using PVR?
- Did you have any challenges with the pupils during use of PVR in reading classes? Could you give an example, please?
- How do Deaf pupils respond to you as a Deaf person when using PVR in reading classes? Do you think your role makes a difference to Deaf pupils? Please explain.
- How do you feel the school year has gone?
-

⁸⁴These interviews were conducted in May 2014. Only one Deaf assistant was interviewed via FaceTime. Other assistants were asked these questions in face-to-face interviews.

⁸⁵There was substantial overlap between the questions for the teachers and Deaf assistants but that they are presented separately for clarity.

Appendix 6 (cont.)

- What have you been doing this year, particularly in regard to Deaf pupils' reading?
- Thinking about the year since last September, would you say you achieved what you had hoped to do? Can you explain?
- Can you tell me if there were any complications, absences or other matters which you felt upset your plans and your teaching?
- Now that you have had a year of working with PVR, what do you think of the PVR strategy? Can you give some feedback?
- In comparison to the PVR strategy, were there any new reading strategies which you tried out or were asked to try out? If so, what were they and how did it work out?
- Thinking about the PVR strategy, and my presentation last October, how do you feel about it as a strategy to be used in reading education for Deaf pupils?
- Is there anything that did not work? Were there any problems? Please explain.
- Were you able to keep to the plan that we agreed together in October 2013 about using PVR, or did you have to make some changes?
- What support or materials would help you to continue to use this method?

I know it is difficult to remember but it would be helpful to get estimates of how often you felt you used the PVR strategy ... month by month... So, could you fill the following tables:

c) How many reading lessons did you teach in (Month) with the PVR strategy:

Year	Month	Number of Lessons
2013	October	
	November	

Year	Month	Number of Lessons
2014	December	
	January	
	15-25/01/2014	Midterm term holiday, first term
	February	
	March	
	22-29/3/2014	Midterm holiday, second term
	April	
	May	
	23May-31August	Summer holiday
Total lessons		

- d) In the timetable we planned that you would have a Deaf assistant twice a week. Did that happen? How many times did you have the Deaf assistant in class?

Year	Month	Number of Lessons
2013	October	
	November	
	December	
2014	January	
	15-25/01/2014	Midterm term holiday, first term
	February	
	March	
	22-29/3/2014	Midterm holiday, second term
	April	
	May	
	23May-31August	Summer holiday
Total lessons		

Face-to-face interviews

- a) Tell me about your experience in the classroom with: Deaf pupils, the teacher, teaching materials.
- b) How did you work with the hearing teacher in the class?
 - How did you find the teacher's sign language level?

Appendix 6 (cont.)

-
- How did you find the pupils' sign language level?
- Now that you have had a year of working with PVR, what do you think the PVR strategy is? Can you give some feedback?
- Can you give some examples of how PVR could be improved?
- Would you like to continue attending the reading lessons with the teacher this year? Please explain.

Headteacher and first teacher:

Telephone interviews

- Have you noticed any differences resulting from the PVR experiment up to now?
- Has anything happened in the school during the period since last October?
- What do you think of the experience of applying the PVR strategy in literacy lessons?
- Is the PVR strategy one that you would like the teachers and the Deaf assistants to continue using next year?

Face-to-face interviews

- Did you have the chance to attend any lessons where the teachers were using the PVR strategy?
- How did you find the PVR strategy as a strategy to teach reading to Deaf pupils?
- How did you find the experience of a Deaf person working with a hearing teacher in the same class?
- How did you see children's reading performance?
- What problems do you think the teachers and Deaf assistants might face when using PVR?

Appendix 6 (cont.)

- What do you think the advantages of using PVR in reading lessons are?
- How can we improve PVR?

Mothers⁸⁶

Telephone interviews

- Do you think that there have been any changes in the school? Please explain.
- Do you think that there have been any changes in the pupils? Please explain.
- Have you seen any changes in your children's reading performance? Please explain.
- Do you think that your daughter was able to communicate more easily or found it easier or more difficult to communicate with you? Why?
- What did your daughter say about her reading lessons?
- What did your daughter do at home in order to improve her reading skills?
- Are there any other matters that concern you about your daughter?

Final group discussion

Topics:

Home life

- Discuss interaction with the Deaf daughter and other family members
- Is communication with their Deaf daughters easier or harder? Discuss why.
- Were there any changes in literacy performance since the last meeting?

⁸⁶The data collected from mothers was not analysed due to the lack of time.

Appendix 6 (cont.)

- Do they think that their Deaf daughters are more interested in reading?
Why?
- Were there any changes in school life?
- Were there any changes in their children's behaviour?
- What did their daughters do at home in order to improve their reading skills?
- What worries did they have about their daughters?
- Where do their daughters spend their free time?
- What are the reasons for their daughters' absence from school?
- What is education for Deaf girls? Is it important?

Appendix 7: Translated example of a teacher's interview transcript

Interviewer: The researcher.

Interviewee: Mrs. Abrar.

Interview setting: Teacher's office in the classroom when her pupils were attending a school event.

Interview time: 10:15 AM on Tuesday morning.

Researcher: How do you feel the school year has gone?

Mrs. Abrar: Despite the circumstances the school is going through, to some extent, yes, I'm satisfied about what it achieved from last year to this year, because the pupils' performance is average which means that it is better than before, but in general I can say that I enjoyed the intervention and I can tell you that I'm satisfied with myself.

Researcher: How did you find the experience of working with the Deaf assistant in the same class?

Mrs. Abrar: To be honest with you, at the beginning I was worried about this experience because it's new and I wasn't sure how we were going to work together in the classroom. However, from the first lesson, I was really surprised by the positive results that I could see immediately. I can really say that I enjoyed working with Mrs. Manal [Deaf assistant].

Researcher: Do you think that the Deaf assistant supported you?

Mrs. Abrar: Very much... in a way that I can't believe.

Researcher: How? Can you explain that please?

Mrs. Abrar: She helped me and helped the pupils too. For example, she was not just able to deliver new ideas and lessons but she was able to deliver the information elaborately and better than me! Mrs. Manal can do everything; she can be a leader, a teacher and an assistant. Her role is very important, as she can put complex ideas across [...] She was eager to learn the information [in the lessons]. She taught me how to explain the information to the pupils. She prepared the lesson timetable and helped the teachers to organise the exams.

Researcher: How did the Deaf assistant work with Deaf pupils?

Mrs. Abrar: Before the reading lesson, I used to sit with the Deaf assistant and discuss the reading text and the pictures. I explained the aim of the lesson to her, she discussed the pictures, gave examples and suggested some points that she thought might be important to help the pupils to understand. [Later in the intervention] she began to understand my way and I began to understand her way. She teaches in sign and they could understand her immediately!

Researcher: How did the Deaf assistant teach Deaf pupils?

Appendix 7 (cont.)

Mrs. Abrar: Mrs. Manal taught the pupils to use signs most of the time you know because she is Deaf... She speaks sometimes but she uses signs with the pupils more. mmm... I realized that she didn't give them too much information - maybe that helped

the pupils to understand. Also, if she sensed that there was a pupil who didn't understand me, she helped her by repeating the information in their language- I mean sign. Mrs. Manal also gave examples to the pupils to simplify the concepts.

Researcher: What do you think the pupils like about having a Deaf assistant?

Mrs. Abrar: mmm ... I think she helped them to understand the concepts weren't that they found difficult, which boosted their self-confidence in their ability to learn. She teaches them seriously, she plays with them...she did competitions... she was sympathetic with them. The girls [pupils] [...] interacted incredibly well with the Deaf teacher [assistant] and interacted together. For example, the pupils became more able to discuss facts about the Righteous Caliphs, their names, their relationship with the Prophet Mohammed [...] then they engaged in discussing the Caliphs' personalities and characteristics through the stories.

Researcher: Why do you think the pupils like working with the Deaf assistant?

Mrs. Abrar: I believe that because they are all [pupils and the Deaf assistant] Deaf, communication and interaction was easy between them. That was the important thing the pupils might like when they work with Mrs. Manal.

Appendix 8: English version of the information sheet for teachers and the Deaf staff ^{87,88}



The Centre for Deaf Studies

8-10 Berkeley Square, Bristol BS8 1HH, UK

Title of the Research: 'Deaf Pupils Reading Arabic in the Sign Bilingual Approach'

The researcher

My name is Najwa Basonbul. I am studying at the University of Bristol Centre for Deaf Studies in the UK. The aim of my current research is to improve the literacy skills of Deaf children.

Invitation

I am seeking teachers of Deaf pupils in primary schools to participate in the research. Thus, as a teacher of Deaf pupils, you have been selected to be invited to take part in my research study.

The research aims

Sign Bilingual Education is the policy of teaching Deaf pupils using two languages (Saudi Sign Language and Arabic) and two cultures (Deaf and hearing). This research seeks to apply it to Deaf schools in Saudi Arabia and examine its efficacy in improving Deaf children's reading.

Benefits of the research

The outcomes of this doctoral research will have an impact on the future of Saudi policies for Deaf education and provide a better understanding of Deaf pupils' progress, linguistically and academically.

What is expected from you

- Provide basic information about yourself and your experience related to teaching Deaf pupils
- Allow the researcher to conduct some classroom observations
- Apply the sign bilingual approach in your class (reading lessons)
- Take part in individual interview (for hearing and Deaf staff) and personal data record (reading teachers only) related to your experience of teaching Deaf pupils
- Take part in group discussions to discuss topics related to your experience of teaching Deaf pupils

⁸⁷Note: Separate information sheets with comparable information were provided to participants such as the administration team and the mothers/caregivers.

⁸⁸These documents were subsequently submitted to UCL.

Appendix 8 (cont)

Time commitment

- The research is expected to take 18 months, from April 2013 to September 2014.
- Classroom observations typically take 35-45 minutes (per session) before and during the implementation of the SBE strategy.
- Each individual interview will take roughly 30-45 minutes and you will need approximately 20 minutes to complete each personal data record.
- Each group discussion will take around one to one and a half hours.

Participating teachers' rights

- I will use a pseudonym for you when presenting your data.
- Your participation is voluntary; so, if you do elect to take part and then change your mind, you have the choice of withdrawing before the research begins or after the data collection has commenced, without being requested to offer any justification, and it will not affect your career evaluation.
- You have the right to access the information collected from your participation in observations and interview.
- If you consequently face any problem or feel distressed, you should contact one of the people whose names appear at the end of this sheet.

Data Protection

I will make sure that no evidence as to your identity will emerge from the research. The data will be kept confidentially by me in a locked document on a university computer. The Saudi Ministry of Education and the administrators of your school have checked the research. There are no anticipated risks of any form to the participants.

I would appreciate it if you would agree to participate. Having decided to participate in the research, you will be asked to sign the approval sheet. Please take your time to read through both sheets carefully. I will be glad to respond to any queries you might have. You will be given a copy of both sheets to keep and refer to at any time.

For further information

If you need further information or have any enquiries or complaints or face any problem, you should contact:

The researcher: Najwa Basonbul, Mobile phone. +44 7915837875, email nb12489@bristol.ac.uk

The supervisor (1): Prof. Jim Kyle, Tel: +44 (0)117 954 6916, jim.kyle@bristol.ac.uk

The supervisor (2): Dr. Rachel Spence, Tel. +44 (0) 117 331 4350, rachel.spence@bristol.ac.uk

Appendix 8 (cont)

Participants Consent Form		
<p>Research Title: 'Deaf Children Reading Arabic in the Sign Bilingual Approach'.</p> <p>Date of Operation of the Research: From: April 2013 To: September 2014</p> <p>Sponsor: Saudi Ministry of Higher Education</p>		
Please tick ✓Yes or No to every statement:		
I.....consent to participate in the research study entitled Deaf Pupils Reading Arabic using the Sign Bilingual Approach.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
The aim and the nature of the research have been clarified for me:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
a) in Arabic	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b) in the Saudi Sign Language	<input type="checkbox"/> Yes	<input type="checkbox"/> No
c) in the writing (on paper)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
d) I assert that I understand and consent to the study's purpose and methods used.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
e) I understand that I am a voluntary participant in this research; therefore, I can withdraw at any moment, after which the study will not use my responses.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
I understand that;		
- I will participate in individual interviews	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- I will participate in group discussions	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- I will participate in classroom observations	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- I will fill in children's personal data records	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- I will participate in conducting the sign bilingual education strategy in reading lessons	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- I give permission for my interview with Najwa Basonbul to be recorded	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- My data will be kept as confidential as legally possible and anonymity will be guaranteed in the report by hiding my identity.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
I give permission for my responses to be utilized:		
- as part of a general report and data collection– where I cannot be identified	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- in the form of publication, descriptions or quotations, where I cannot be identified	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- for analysis by the researcher only	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- in workshops or conference presentations or published articles, but only with my consent for that specific part of the text	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- in workshops, conferences or published articles without any condition	<input type="checkbox"/> Yes	<input type="checkbox"/> No
- I understand that the data gathered will be stored securely and that only the researcher will have the right to use them.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<p>Signed Date.....Contact details Researcher 1: Najwa Abood Basonbul, University of Bristol, nbasonbul@hotmail.com Supervisor 1: Prof. Jim Kyle, University of Bristol, jim.kyle@bristol.ac.uk Supervisor 2:Dr. Rachel Spence, University of Bristol, rachel.spence@bristol.ac.uk School of Education Research Ethics Coordinator: Wan Ching Yee, gscoe-ethics@bristol.ac.uk</p>		

Appendix 9: English version of complete personal data record for the Deaf child*

1.	Child record number: _____				
2.	Date of records completion: _____				
3.	Who helped to answer the questions? <input type="checkbox"/> Parent <input type="checkbox"/> Teacher <input type="checkbox"/> The researcher				
4.	Childs Full Name: _____				
5.	Gender of the child: <input type="checkbox"/> Male <input type="checkbox"/> Female				
6.	Date of birth: Day: _____ Month: _____ Year: _____				
7.	Age of the child: _____				
8.	When did the child become deaf? <input type="checkbox"/> Since birth <input type="checkbox"/> 0-3 years old <input type="checkbox"/> 3 – 6 years <input type="checkbox"/> 6 years or older				
9.	When did the child diagnosis with the deafness? <input type="checkbox"/> Since birth <input type="checkbox"/> 0-3 years old <input type="checkbox"/> 3 – 6 years <input type="checkbox"/> 6 years or older				
10.	Does the child wear a Hearing Aid? <input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never				
11.	Did the child have undergone cochlear implants? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Preparing to have undergone cochlear implants				
12.	Audiogram – date of audiogram (place <input checked="" type="checkbox"/> next to the right answer):				
		25 decibel or less	26-40 decibel	41-60 decibel	61-80 decibel
	Left				
	Right				
13.	Date of last audiogram: _____				
14.	Degree of IQ test: _____				
15.	Date of last IQ test: _____				
17.	Date of last diagnosis of Language and Communication: _____				
	Teacher Comment Section:				
18.	How old was the child when you started working at this school? _____ years				
19.	Do you sign to the child? <input type="checkbox"/> All the time <input type="checkbox"/> Sometimes <input type="checkbox"/> Use sign language interpreter <input type="checkbox"/> Outside the classroom <input type="checkbox"/> Only rarely <input type="checkbox"/> Never				
20.	Does the child sign language to other children? <input type="checkbox"/> All the time <input type="checkbox"/> Sometimes <input type="checkbox"/> Use sign language interpreter <input type="checkbox"/> Outside the classroom <input type="checkbox"/> Only rarely <input type="checkbox"/> Never				
21.	Do you speak to the child? <input type="checkbox"/> All the time <input type="checkbox"/> Sometimes <input type="checkbox"/> Use sign language interpreter <input type="checkbox"/> Outside the classroom <input type="checkbox"/> Only rarely <input type="checkbox"/> Never				
22.	Does the child speak to other children? <input type="checkbox"/> All the time <input type="checkbox"/> Sometimes <input type="checkbox"/> Use sign language interpreter <input type="checkbox"/> Outside the classroom <input type="checkbox"/> Only rarely <input type="checkbox"/> Never				
23.	There are four areas of interest in sign bilingual programme, please rate the child from 1 to 10 on: Reading level: <input type="checkbox"/> 1= no reading at all; <input type="checkbox"/> 5= about average for a deaf child of this age; <input type="checkbox"/> 10= at the level of a hearing child of this age				
24.	Writing skill: <input type="checkbox"/> 1= no writing; <input type="checkbox"/> 3= can write/copy single words; <input type="checkbox"/> 6= can write short sentences; <input type="checkbox"/> 10 can write stories like a hearing child				
25.	Signing competence: <input type="checkbox"/> 1= no signing at all; <input type="checkbox"/> 5 = able to sign with some children; <input type="checkbox"/> 10 = confident to sign to their children and to adults				
26.	Speaking ability: <input type="checkbox"/> 1= no speech; <input type="checkbox"/> 5 = single words but understandable; <input type="checkbox"/> 10 = fluent speech in sentences				

*Source: Adapted from Kyle (2012).

Appendix 9 (cont)

27.	<p>Speech-reading/comprehension of your speaking to her:</p> <p><input type="checkbox"/> 1= does not understand speech at all; <input type="checkbox"/> 5= able to understand simple sentences when close in relaxed situation;</p> <p><input type="checkbox"/> 10 = able to understand sentences spoken in class</p> <p>Are there any other areas you wish to comment on in regard to this child, which relate to reading and writing?</p>																									
28.	The child's results in reading last year: _____																									
29.	Did the child fail in any of the years? <input type="checkbox"/> Yes <input type="checkbox"/> No																									
30.	If yes, which subjects did the child fail in? _____																									
31.	<p>Information about the child's family (write a ✓ next to the correct hearing status):</p> <table border="1"> <thead> <tr> <th>Family members</th> <th>Number</th> <th>Hearing status</th> <th>The nationality</th> <th>The main language</th> </tr> </thead> <tbody> <tr> <td>The mother</td> <td></td> <td> <input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing </td> <td></td> <td></td> </tr> <tr> <td>The father</td> <td></td> <td> <input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing </td> <td></td> <td></td> </tr> <tr> <td>Brother (brothers)</td> <td></td> <td> <input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing </td> <td></td> <td></td> </tr> <tr> <td>Sister (sisters)</td> <td></td> <td> <input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing </td> <td></td> <td></td> </tr> </tbody> </table>	Family members	Number	Hearing status	The nationality	The main language	The mother		<input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing			The father		<input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing			Brother (brothers)		<input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing			Sister (sisters)		<input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing		
Family members	Number	Hearing status	The nationality	The main language																						
The mother		<input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing																								
The father		<input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing																								
Brother (brothers)		<input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing																								
Sister (sisters)		<input type="checkbox"/> Deaf <input type="checkbox"/> Hard-of-hearing <input type="checkbox"/> Hearing																								
32.	<p>Father's qualification:</p> <p><input type="checkbox"/> Cannot read or write <input type="checkbox"/> Read and write but never go to school <input type="checkbox"/> Primary <input type="checkbox"/> Secondary</p> <p><input type="checkbox"/> High school <input type="checkbox"/> Bachelor degree <input type="checkbox"/> Master degree <input type="checkbox"/> PhD degree or more</p>																									
33.	<p>Mother's qualification:</p> <p><input type="checkbox"/> Cannot read or write <input type="checkbox"/> Read and write but never go to school <input type="checkbox"/> Primary <input type="checkbox"/> Secondary</p> <p><input type="checkbox"/> High school <input type="checkbox"/> Bachelor degree <input type="checkbox"/> Master degree <input type="checkbox"/> PhD degree or more</p>																									
34.	<p>How old was the child when she saw sign language?</p> <p><input type="checkbox"/> Under 5 years old <input type="checkbox"/> Between 5-10 years old</p> <p><input type="checkbox"/> Over 10 years old but before the child left school <input type="checkbox"/> After the child left school</p>																									
35.	<p>At what age do you think the child <u>learned</u> signing?</p> <p><input type="checkbox"/> Under 5 years old <input type="checkbox"/> Between 5-10 years old</p> <p><input type="checkbox"/> Over 10 years old but before the child left school <input type="checkbox"/> After the child left school</p>																									
36.	<p>Where did the child learn sign language?</p> <p><input type="checkbox"/> At school <input type="checkbox"/> From her parents/family <input type="checkbox"/> On a course</p> <p><input type="checkbox"/> From other Deaf people outside of school <input type="checkbox"/> From Deaf people inside school</p> <p><input type="checkbox"/> Other _____</p>																									
37.	<p>Are there other Deaf people where the Deaf child lives?</p> <p><input type="checkbox"/> No <input type="checkbox"/> Yes in the same house /building</p> <p><input type="checkbox"/> Yes next door <input type="checkbox"/> Within 5 minutes walk from home</p>																									
38.	<p>What is the child's favourite method of communication? (Please tick one only!)</p> <p><input type="checkbox"/> Sign Language <input type="checkbox"/> Spoken Language <input type="checkbox"/> Signing and Speaking</p> <p><input type="checkbox"/> Gestures <input type="checkbox"/> Writing <input type="checkbox"/> Other: _____</p>																									

Appendix 9 (cont)

39.	When the child communicates with this person (...) what communication method does the child usually use? (place ✓ next to the right answer):							
		<i>Sign language</i>	<i>Spoken language</i>	<i>Sign language and speech</i>	<i>Gestures</i>	<i>Writing</i>	<i>Other</i>	<i>Do not know</i>
	<i>Mother</i>							
	<i>Father</i>							
	<i>Brother</i>							
	<i>Sister</i>							
	<i>Other relatives</i>							
	<i>Friends at the house</i>							
	<i>Friends at school</i>							
	<i>Teacher at school</i>							
<i>Deaf person at school</i>								
40.	When this person (.....) communicates with the child what method do they (.....) usually use? (place ✓ next to the right answer):							
		<i>Sign language</i>	<i>Spoken language</i>	<i>Sign language and speech</i>	<i>Gestures</i>	<i>Writing</i>	<i>Other</i>	<i>Do not know</i>
	<i>Mother</i>							
	<i>Father</i>							
	<i>Brother</i>							
	<i>Sister</i>							
	<i>Other relatives</i>							
	<i>Friends at the house</i>							
	<i>Friends at school</i>							
	<i>Teacher at school</i>							
<i>Deaf person at school</i>								

Appendix 9 (cont)

41.	Does the child deal with the following deaf organizations? (place ✓ next to the right answer):					
		<i>Active Member</i>	<i>Occasional member</i>	<i>Not a member</i>	<i>No</i>	
	<i>Local Deaf Club – Girls club</i>					
	<i>Other Deaf</i>					
42.	How often does the child meet with other Deaf children at: (place ✓ next to the right answer):					
		<i>Once a week or more</i>	<i>Several times a month</i>	<i>Once a month</i>	<i>A few times a year</i>	<i>Rarely or never</i>
	<i>Deaf Club</i>					
	<i>School trips or events</i>					
	<i>Parents/Family events</i>					
	<i>Other (e.g. fun fair)</i>					
43.	Does the child read: (place ✓ next to the right answer):					
		<i>Every day</i>	<i>At least once a week</i>	<i>Once a month</i>	<i>Rarely</i>	<i>Never</i>
	<i>School books</i>					
	<i>Newspapers</i>					
	<i>Magazines</i>					
	<i>Other Books</i>					
44.	Does the child watch TV? (place ✓ next to the right answer):					
		<i>Every day</i>	<i>At least once a week</i>	<i>At least once a month</i>	<i>Rarely</i>	<i>Never</i>
	<i>Subtitled TV Programmes</i>					
	<i>Unsubtitled TV Programmes</i>					
	<i>Teletext News/Sports/Weather</i>					
	<i>Programs that help to understand the text and hear</i>					
	<i>Programs are discussed and the views of the Deaf</i>					
<i>Other _____</i>						

Appendix 9 (cont)

45.	How often does the child use this equipment? (place ✓ next to the right answer):					
		<i>Every day</i>	<i>At least once week</i>	<i>At least once a month</i>	<i>Rarely</i>	<i>Never</i>
	<i>Video Recorder</i>					
	<i>Computer</i>					
	<i>Hearing Aid</i>					
46.	Does the child have a computer? <input type="checkbox"/> Yes <input type="checkbox"/> No					
47.	How often does the child use a computer? <input type="checkbox"/> Every day <input type="checkbox"/> At least once a week <input type="checkbox"/> At least once a month <input type="checkbox"/> Rarely <input type="checkbox"/> Never					
48.	How often does the child browse the Internet? <input type="checkbox"/> Every day <input type="checkbox"/> At least once a week <input type="checkbox"/> At least once a month <input type="checkbox"/> Rarely <input type="checkbox"/> Never					
49.	Was the child born: <input type="checkbox"/> A normal <input type="checkbox"/> A caesarean					
50.	Were there any health problems after birth? <input type="checkbox"/> Yes <input type="checkbox"/> No					
51.	If yes explain this: _____					
52.	Has the child suffered a bereavement or loss within your immediate family in recent years? <input type="checkbox"/> Yes <input type="checkbox"/> No					
53.	During the past 2 or 3 years, has the child's personal situation changed as a result of parents: <input type="checkbox"/> Divorce <input type="checkbox"/> Separation <input type="checkbox"/> No <input type="checkbox"/> Other					
54.	Has the child been in trouble in school in the past? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Sometimes <input type="checkbox"/> Do not know					
55.	Does the child always understand other Deaf people who are signing to her? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Sometimes <input type="checkbox"/> Do not know					
56.	Does the child always understand other Deaf people who are signing to each other? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Sometimes <input type="checkbox"/> Do not know					
57.	Does the child always understand the interpreter? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Sometimes <input type="checkbox"/> Do not know					
Other comments or issues						
Interviewer: _____						
Signature: _____ Date: _____						

Appendix 10 (cont)

- 34  أهاتف واليكي غنر الهاتف.
- 35  حازم في جماعة تخفيظ القرآن الكريم.
- 36  المستعملون يستعملون في فناء الحزم المكي.
- 37  ألتن أحنأ القارورة المشورة في حاوية المهامة.
- 38  الحنأ سنينة الصغراء.

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- 44  أحنأ ينمل طبيباً يذاري المرضى.
- 45  اجتمع الأولاد الصغار حول الملقى التهنين وتكلمون.
- 46  في فصل الجريف تتساعط أزاي المتجر.
- 47  الرياضة الننتية تلال على الصحة الجيدة.
- 48  مهند زار المنطقة التاريخية القبيةة.

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- 39  بند ينلم أن يكون طياراً يخلق بطايرته.
- 40  تجمع الأمراء عشاء وشاهد الكفاز.
- 41  منع استخدام الهاتف المحمول.
- 42  للحاسوب فوائد كثيرة." data-bbox="605 295 785 335"/>
- 43  لزوء الشبكة من أعظم ماضي البحر.

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- 49  تحرك الأمواج السفن فلهذا هزلوا خفياً.
- 50  الضامة نوع من الطيور لها سافان طويلتان.
- 51  يظهر الطاهي الطعام في مطبخ المطعم.

السؤال الثالث: اختيار الكلمة المناسبة لتكوين جملة مفيدة.

مثال في مخرمتي ساحة..... **واهنة** / **واسعة** / **واقعة** / **واقية**

- 52 الفزاة تبرز | الحقون / العفون / العفون / العفون
- 53 الزياض خديلة | عذيلة / جميلة / فضيلة / عذيلة فيها أزراع عالية
- 54 غنأ | الدين / الدين / الدين | الدين | حنرورن فأن الأكل ونخذ.
- 55 عذ مهند لغة | جريدة / جديلة / جديدة / جديد
- 56 ناكل الطعام باليد | يسري / يمان / اليمن / اليمنى

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Appendix 11: Arabic version of the final copy of the pre-test

مقياس القراءة (1) للمرحلة الابتدائية

الرمز: الحروف: شهر:

المدسة: الصف:









تاريخ الميلاد: تاريخ الإختبار:

عصر القراء:











تقرأ/ اظن







نتيجة الإختبار:

السؤال الأول: اختيار الكلمة المناسبة لكل صورة.

<p>مثال</p> <p>بيت</p>  <p>بيت</p> <p>تبيت</p> <p>تبن</p>	<p>فلم</p> <p>فلم</p> <p>علم</p> <p>فلم</p>	<p>أسر</p>  <p>أسر</p> <p>أسد</p> <p>أسى</p>
<p>بانت</p>  <p>بانت</p> <p>باب</p> <p>باص</p> <p>باع</p>	<p>سريد</p>  <p>سريد</p> <p>سفير</p> <p>سعيد</p>	<p>كعب</p>  <p>كعب</p> <p>كنايب</p> <p>كنايب</p>
<p>قطع</p>  <p>قطعة</p> <p>قطعة</p> <p>قطار</p>	<p>استوقف</p>  <p>استوقف</p> <p>استنق</p> <p>استنق</p> <p>استنق</p>	<p>جذري</p>  <p>جذري</p> <p>جذري</p> <p>جذري</p>

السؤال الثاني: اختيار الصورة المناسبة لكل عبارة.

<p>مثال</p> <p>مشغل يرتب الكتب.</p> 	<p>مفؤد</p>  <p>مفؤد</p> <p>مفؤد</p> <p>مفؤد</p>	<p>عناكب</p>  <p>عناكب</p> <p>عناكب</p> <p>عناكب</p>
<p>خامد زحل الكرة.</p> 	<p>ياكل طلائ نقاحة.</p> 	<p>تظف مهنأ أسنانه.</p> 
<p>تغلب خنوان مارك.</p> 	<p>بصافير تظير فرحة.</p> 	<p>حدث والذي غير الهاتف.</p> 
<p>رم في جماعة تخليط القران ريم.</p> 		

<p>مفؤد</p>  <p>مفؤد</p> <p>مفؤد</p> <p>مفؤد</p>	<p>عناكب</p>  <p>عناكب</p> <p>عناكب</p> <p>عناكب</p>	<p>مفؤد</p>  <p>مفؤد</p> <p>مفؤد</p> <p>مفؤد</p>
<p>خامد زحل الكرة.</p> 	<p>ياكل طلائ نقاحة.</p> 	<p>تظف مهنأ أسنانه.</p> 
<p>تغلب خنوان مارك.</p> 	<p>بصافير تظير فرحة.</p> 	<p>حدث والذي غير الهاتف.</p> 
<p>رم في جماعة تخليط القران ريم.</p> 		

Appendix 11 (cont)

يُقطعُ الخَطَابُ جُدوعَ [الأشواك / الأشجان / الأخشاب / الأشجار] ليجمع الخَشَبَ.

62 — المزلُّو و [مرجانه / المرجان / المَرَجَان / الفَنجان] تُعد من الثروات البحرية.

63 — في فصلِ [الربيع / الربيع / الربيع / الربيع] يعتدل الجو، ويَبْدَأُ [العشاء]

64 — [الجشُر / العشب / العُشْب] .

65 — أجبُ اللونَ [الخفراء / الخفراء / الخفراء / الخفراء] لأنه لَوْنُ عَلمِ بلادي.

66 — بعدَ صِيامِ رمضانَ يَلْبُغُ المسلمونَ بعيدَ [الغُطور / السُحُور / الأضحية / الفطر].

67 — استعْمالُ [الجَوال / الجوانح / الجَوالِ / الجوارب] أثناءَ المُبادِلةِ [إطار / أخطاء]

68 — [أخطأ / أخطاء] عَثيراً .

السؤال الخامس: قراءة المصفاة الإعلانية التالية ثم الإجابة كتابياً على الأسئلة التي تليها.

الملصق الأول

قوانين الصف

رفع الإصبع قبل الإجابة على أي سؤال.

رسم القاتورات الورقية في سلة المهملات.

احضر الأدوات المدرسية.

طرق الباب قبل دخول الصف.

مثال السؤال الأول: ماهو موضوع الملصق؟ الموضوع هو قوانين الصف.

69 — السؤال الثاني: كم عدد القوانين الموجودة في الملصق؟

السؤال الثالث: امل الفراغات التالية بالكلمات المناسبة من الملصق.

70 — أ- يجب قبل دخول الصف.

71 — ب- قبل الإجابة على أي سؤال يجب

المملكة العربية السعودية
وزارة التربية والتعليم

مسابقة الرسم

هل لديك موهبة الرسم؟

شروط المسابقة

1- أن تكون جميع المشاركات من طالبات طابقت مدارس وزارة التربية والتعليم.

2- يسمح المشاركة بفرقة واحدة.

3- أن يكون موضوع الفرقة من اختيار الطالبة.

4- أن يراعى الطالبات اللطائفات مبادئ الدين الإسلامي والمسلم.

5- أن يكون مقياس الفرقة 40 × 70 .

6- يكتب اسم الطالبة الطالبة (الرياضي/الصف).

7- آخر موعد لتسليم الفرقة 1438/1437 هـ

جائزة المسابقة:

المرجع الأول ٦٠٠ ريال.

المرجع الثاني ٤٠٠ ريال.

المرجع الثالث ٢٠٠ ريال.

السؤال الأول: اذكر اثنين من شروط المسابقة؟

1- _____

2- _____

السؤال الثاني: آخر موعد لتسليم مشاركات المسابقة هو: _____

السؤال الثالث: من الجهة المنظمة للمسابقة؟ _____

السؤال الرابع: ماهي الجوائز المقدمة للفائزين؟ _____

المصنف الثالث

سحوبات على جوائز قيمة

مهرجان طيور الجنة في أكبر كرنفال إتشادي بمجمع العرب بجدة

الأربعاء ٥ / ١٤٣٣ هـ

المواقع ٢٠١٢٠٣٢٨م

الحضور قبل الساعة ٧ مساءً

نواع التذاكر من مجمع العرب / العزيز مول

المهرجان تحت إشراف صاحب السمو الأمير عبدالرحمن آل سعود

فقرات كوميدية وبهلوانية

ليزر شو

هدايا

معرض ومنتجات متنوعة

للتواصل والاستفسار:

053505116

0516989766

0530822299

054221412

السؤال الأول: ما اسم الكرنفال (المهرجان) المُعْتَنَ عنه في الملصق؟

79 — _____

السؤال الثاني: متى سيعقد مهرجان طيور الجنة؟

80 — _____

السؤال الثالث: أين سيعقد مهرجان طيور الجنة؟

81 — _____

السؤال الرابع: ماهي الفقرات التي ستقدم في المهرجان؟

82 — _____

83 — _____

84 — _____













انتهى

Appendix 12: Arabic version of the final copy of the post-test













مقياس القراءة (2) للمرحلة الابتدائية

المرور: تكرارتي
 العمر: سنوات و شهر
 المدرسة: الصف:
 تاريخ الميلاد: تاريخ الاختبار:
 عمر القراءة:

السؤال الأول: اختيار الكلمة المناسبة لكل صورة.





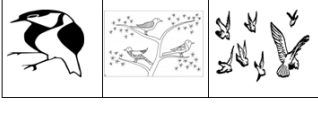
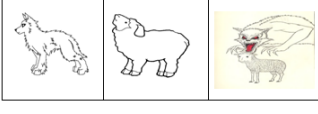

<p>— 1</p> <p>خَلَّال خُلِّين جَلَّال حِظَر</p> 	<p>عَمَل عَلَم لَمَح مُطَم</p> 	<p>مَثَال بَطَّة شَطَّة حُطَّة</p> 
<p>— 2</p> <p>قَطَر فَطَر عِطَر مِطَر</p> 	<p>عَمِير عِطِير عَمِيد عِيد</p> 	<p>كَنْب كَلْب غُف كَنْب</p> 
<p>— 3</p> <p>خُرُون خُرُوف خُرُون خُرُوف</p> 	<p>قِيمَة عَيْمَة خَيْمَة خِيَة</p> 	<p>عُرُون عُرُون عُرَال عُرَارَة</p> 
<p>— 4</p> <p>قَطَارَة قَطَار عَطَار قَاطِر</p> 	<p>فُرُوش فُرَاثَة فُرَيْش فُرُشَة</p> 	<p>شَطَّة شَنْطَة شُرُطَة شُرُفَة</p> 

1





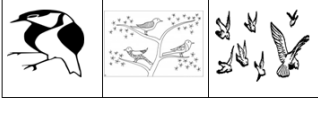
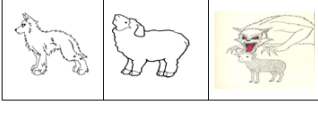

<p>— 12</p> <p>— 13</p> <p>— 14</p>	<p>نَافِذ نَافِذَة نَافِذَة نَافِذ</p> 	<p>سَافِر سَافِر سَافِرَات سَافِرَة</p> 	<p>مُعَلِّم عَلِم عَمَل لَمَع</p> 
<p>— 15</p> <p>— 16</p> <p>— 17</p>	<p>عَدُو عَدَاوَات عَاذَى عَالِيَة</p> 	<p>مَجَل مَجَل مَجَلَة مَجَلَات</p> 	<p>طَائِرَة طَائِرَات طَائِر طَائِر</p> 
<p>— 18</p> <p>— 19</p> <p>— 20</p>	<p>بَحَار بَحْرَة بَحْرَة بَحْر</p> 	<p>طَبِخ طَبَخَات طَبِخَة طَبَاخ</p> 	<p>سُفِينَة سُفُون سُفُون سُفُون</p> 
<p>— 21</p> <p>— 22</p> <p>— 23</p>	<p>سُحُبَة سُحَاب سُحُبَات سُحُوبَة</p> 	<p>نَبِيَة نَبِيَان نَبَاب نَبِيَات</p> 	<p>إِزْدَهَر إِزْدَهَر أَزْهَر أَزْهَر</p> 

2

السؤال الثاني: اختيار الصورة المناسبة لكل عبارة.









<p>— 24</p>	<p>مَثَال</p> <p>الكَتَابُ عَلَى الرَّفِّ.</p> 
<p>— 25</p>	<p>أَحْلَامُ نَعْمَلُ نَعْمًا.</p> 
<p>— 26</p>	<p>وَلِيدٌ يَجْلِسُ عَلَى تَهَابِيهِ الْبَحْرِ.</p> 
<p>— 27</p>	<p>عَسْرٌ يَلْعَبُ بِالْمِطَارَةِ الْوَرَقِيَّةِ.</p> 
<p>— 28</p>	<p>الْمَسْتَأْذِنُ يَنْتَظِرُ أَقْسَمُ تَوْقِ الشَّجَرَةِ.</p> 
<p>— 29</p>	<p>مَجَمٌّ يَلْبَسُ عَلَى الْخُرُوفِ.</p> 
<p>— 30</p>	<p>بِطَاقَةٌ تَبَيَّنُ.</p> 

3

<p>— 24</p>	<p>مَثَال</p> <p>الكَتَابُ عَلَى الرَّفِّ.</p> 
<p>— 25</p>	<p>أَحْلَامُ نَعْمَلُ نَعْمًا.</p> 
<p>— 26</p>	<p>وَلِيدٌ يَجْلِسُ عَلَى تَهَابِيهِ الْبَحْرِ.</p> 
<p>— 27</p>	<p>عَسْرٌ يَلْعَبُ بِالْمِطَارَةِ الْوَرَقِيَّةِ.</p> 
<p>— 28</p>	<p>الْمَسْتَأْذِنُ يَنْتَظِرُ أَقْسَمُ تَوْقِ الشَّجَرَةِ.</p> 
<p>— 29</p>	<p>مَجَمٌّ يَلْبَسُ عَلَى الْخُرُوفِ.</p> 
<p>— 30</p>	<p>بِطَاقَةٌ تَبَيَّنُ.</p> 

4

Appendix 12 (cont)

<p>— 31</p> 	<p>الكعبة المشرفة في مكة المكرمة.</p>	<p>— 35</p> 	<p>يقرأ عادلُ الفجلة.</p>
<p>— 32</p> 	<p>يرفَعُ حمُودُ علمَ المملكة العربية السعودية.</p>	<p>— 36</p> 	<p>تَقَعُ المُنوِّذَةُ الرابِعةُ في الرياضِ.</p>
<p>— 33</p> 	<p>رَجُلٌ الإطفاءِ يُحمِدُ الحرائقِ.</p>	<p>— 37</p> 	<p>يُزَيِّمُ خَالِدُ الفُجَيْتِ في الصَّامَةِ.</p>
<p>— 34</p> 	<p>هذان الكتابان مُفيدان.</p>	<p>— 38</p> 	<p>يُحَرِّثُ الفلاحُ الأرضَ.</p>

<p>السؤال الرابع: اِختِيارِ الكَلِمَةِ المُناسِبَةِ لِتكوِينِ جُمْلَةٍ مَفيِدَةٍ.</p> <p>مثال <input type="checkbox"/> اَخبَبُ / <input type="checkbox"/> اَهِبُ / <input checked="" type="checkbox"/> اصْبِبْ / <input type="checkbox"/> اَخبِ / <input type="checkbox"/> اُمِّي وَأَبِي.</p> <p>— 48 أَصنَعُوا بِرَ <input type="checkbox"/> خَوَدِي / <input type="checkbox"/> نَفَوَدِي / <input type="checkbox"/> جَنَوَدِي / <input type="checkbox"/> نَفَوَدِي .</p> <p>— 49 <input type="checkbox"/> يَدخَسُ / <input type="checkbox"/> يَدخَلُ / <input type="checkbox"/> يَدخُلُ / <input type="checkbox"/> يَدخِرُ مَحمَدُ السُّنْتَنِي.</p> <p>— 50 يُطِيفُ سُهَيْدُ <input type="checkbox"/> اسنَاقَه / <input type="checkbox"/> اسنَاقَه / <input type="checkbox"/> اسنَاقَه / <input type="checkbox"/> اسنَاقَه .</p> <p>— 51 طَعمُ <input type="checkbox"/> الخَلِيبيِّ / <input type="checkbox"/> الجَلِيبِ / <input type="checkbox"/> الخَلِيبِ / <input type="checkbox"/> الجَلِيبِ أَذِيذٌ.</p> <p>— 52 تَقَارَنَ غُزْرٌ وَجَنَةٌ <input type="checkbox"/> العُيُودِ / <input type="checkbox"/> البُحُورِ / <input type="checkbox"/> البُحُورِ / <input type="checkbox"/> السُحُورِ مَعَ أُسْرِيو.</p> <p>— 53 الجَدُّ يَحمِي <input type="checkbox"/> هَوَايَتِ / <input type="checkbox"/> جَكاياتِ / <input type="checkbox"/> كِتاباتِ / <input type="checkbox"/> نَفاياتِ مُفيداً.</p> <p>— 54 فَصَلَجِبِ المَعلِمةَ المَلايِكةَ إِلى <input type="checkbox"/> المَكرَمَةِ / <input type="checkbox"/> المَكرَمِ / <input type="checkbox"/> المَكرِمَةِ / <input type="checkbox"/> المَكرِمَةِ .</p> <p>— 55 أَدعُو اللهُ أَنْ يَحمِي <input type="checkbox"/> الوَطَنِيَّةَ / <input type="checkbox"/> وَطَنَ / <input type="checkbox"/> وَطَنِي / <input type="checkbox"/> وَاطنِ .</p> <p>— 56 الإِسلامُ <input type="checkbox"/> عَينِ / <input type="checkbox"/> دَينِ / <input type="checkbox"/> اَينِ / <input type="checkbox"/> عَينِ الطَّافَةِ.</p> <p>— 57 زيارَةُ <input type="checkbox"/> العَريضِ / <input type="checkbox"/> القَريضِ / <input type="checkbox"/> العَريضِ / <input type="checkbox"/> القَريضِ واجِبَةٌ.</p> <p>— 58 قالَ الأبيُّ لَبيبُ عادِلِي: <input type="checkbox"/> الطَافِرةُ / <input type="checkbox"/> الطَافِيفُ / <input type="checkbox"/> الطَافِيفُ / <input type="checkbox"/> الطَافِيفُ وَسِيلةُ السُّرِّ.</p> <p>— 59 يَجِبُ أَنْ تَكتَيبَ <input type="checkbox"/> المُنشَاهداتِ / <input type="checkbox"/> المُنشَآتِ / <input type="checkbox"/> المُنشَآتِ / <input type="checkbox"/> المُنشَآتِ مَعَ الأَخرينَ، لِتُسدَ المَحلَّةَ بَينَ الجَميعِ.</p> <p>— 60 اسنَافِطُ <input type="checkbox"/> صَبَاحا / <input type="checkbox"/> صَبَاحا / <input type="checkbox"/> صَبَاحا / <input type="checkbox"/> صَبَاحا لِلذَّهابِ لِلمَدرَسَةِ، وَأَخذَ إِلى الدَّرسِ مَساءً.</p> <p>— 61 في عَيدِ الخَلِيفَةِ أَمِي نَكرَ المَكتَيبِ - رَضِيَ اللهُ عَنهُ - أَصابَ الأَلمُنَ <input type="checkbox"/> عَفاثُ / <input type="checkbox"/> عَفاثُ / <input type="checkbox"/> عَفاثُ / <input type="checkbox"/> عَفاثُ .</p>	<p>— 62 يَصنَعُ <input type="checkbox"/> الخِياطَةُ / <input type="checkbox"/> الخِياطِ / <input type="checkbox"/> الخِياطِ / <input type="checkbox"/> الخِياطِ إِذا نَظِمَها.</p> <p>— 63 كَمَ لِلعَلمِ وَفِهِ الفَجيلا كانَ <input type="checkbox"/> المَعلِّمُ / <input type="checkbox"/> العَلمُ / <input type="checkbox"/> العَلمُ / <input type="checkbox"/> العَلمُ أَنْ يَكونَ رَسولاً.</p> <p>— 64 اسكنَ مَعَ <input type="checkbox"/> ضابِغِي / <input type="checkbox"/> خالِيبِي / <input type="checkbox"/> عالِيبِي / <input type="checkbox"/> عالِيبِي الجالِيَّةَ في الرِياضِ.</p> <p>— 65 فَصَلْ <input type="checkbox"/> النِشاءَ / <input type="checkbox"/> النِشاءَ / <input type="checkbox"/> النِشاءَ / <input type="checkbox"/> النِشاءَ تَردُّ جَداً وَتَفتَقِطُ فِيهِ الأَملُ.</p> <p>— 66 أَيُّها السَّائِلُ: "أ" <input type="checkbox"/> تَسرِعُ / <input type="checkbox"/> تَسرِفُ / <input type="checkbox"/> تَسرِقُ / <input type="checkbox"/> تَسرِبُ : فَالمرُوثُ أَسرَعُ.</p> <p>— 67 إِجْمالُ الخَوالِ أَثناءَ الفِراةِ لَهُ <input type="checkbox"/> أَطَافُ / <input type="checkbox"/> أَطَافُ / <input type="checkbox"/> أَطَافُ / <input type="checkbox"/> أَطَافُ كَثيرَةٌ.</p> <p>— 68 <input type="checkbox"/> الفَغوِيَّينَ / <input type="checkbox"/> الجانِوسِ / <input type="checkbox"/> النَافِوسِ / <input type="checkbox"/> الطَافِوسِ مَن أَكثَرَ الطَافِوسِ المَنازِلَةَ، وَهُ رَيفِينَ جَمولَ.</p>
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Appendix 12 (cont)

السؤال الخامس: (أ) التعبير بالكتابة عن المصنفات التالية في جمل مفيدة.

المصنق الأول



مثال * أداب الطيرس على طولة الطعام

69 _____ *

70 _____ *

71 _____ *

72 _____ *

73 _____ *

11

المصنق الثاني



غذائي مهم لصحة أسناني

74 _____ *

75 _____ *

76 _____ *

77 _____ *

78 _____ *

12

السؤال الخامس: (ب) قراءة المصنق الإعلاني التالي ثم الإجابة كتابياً على الأسئلة التي تليه.

إعلان

قريباً

نورة الرسم للأطفال

تبدأ خلال شهر شعبان و لمدة 3 أسابيع

الفتيات من عمر 9-12 سنة رسم و تلوين باستخدام أدوات متعددة

من الساعة: 4 إلى 6 مساءً. من السبت للثلاثاء

سعر الدورة 200 ريال شاملة للالوان و الخامات فقط

لا يشمل الكراسيات و أفلام الرصاص

للتسجيل الإتصال على

0583986894

79 _____ السؤال الأول: ماهو موضوع الإعلان المُعلن عنها في المصنق؟

80 _____ السؤال الثاني: كم مدة الدورة؟

81 _____ السؤال الثالث: ضع (✓) أو (x) أمام العبارات التالية.

أ- سكبدا الدورة في شهر رمضان. ()

82 _____ ب- سعر الدورة لا يشمل الكراسيات وأفلام الرصاص. ()

83 _____ ج- مدة الدورة 3 أيام. ()

84 _____ د- الدورة تشمل البنات والأولاد من عمر 5 إلى 12 سنة. ()

13

Appendix 13: Authorization letter for access to the school for Deaf girls

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

المملكة العربية السعودية
وزارة التربية والتعليم
(٢٨٠)
الإدارة العامة للتربية والتعليم بمحافظة
إدارة التخطيط والتطوير

الرقم : ١٨٤ / ١ / ٣
التاريخ : ٢٢ / ٣ / ١٤٣٤ هـ
المرفقات : لا يوجد

إلى : المكرمة مديرة معهد الأمل
من : مديرة إدارة التخطيط والتطوير
بشأن : تسهيل مهمة المبتعثة الباحثة / نجوى عبود صالح باسنبل
السلام عليكم ورحمة الله وبركاته ، وبعد :

بالإشارة إلى إحالة سعادة المدير العام للتربية والتعليم بمحافظة جدة ذي الرقم بدون وتاريخ بدون المبنية على خطاب المبتعثة الباحثة / نجوى عبود صالح باسنبل وإضافة جامعة بريستول ببريطانيا بتاريخ ٢٠١٢/١٢/١٤م؛ بشأن طلب تسهيل مهمتها في تطبيق بحثها بعنوان "دراسة فعالية استراتيجية ثنائي اللغة في تطوير مهارة القراءة لدى الطالبات ذوات الإعاقة السمعية" كمتطلب تكاملي للحصول على درجة الدكتوراه في تخصص التربية الخاصة / دراسات العم. وترغب الباحثة في تطبيق أدوات بحثها "برنامج تعليمي قائم على استراتيجية ثنائي اللغة بأدوات التقييم الخاصة به". حيث تم الاطلاع على خطة الباحثة وتبين استيفائها ضوابط الوزارة بهذا الخصوص. نأمل منكم التكرم بالتعاون مع الباحثة في مهمتها لديكم وتقديم التسهيلات والمعلومات التي تحتاج إليها الى تاريخ الانتهاء من البحث شاكرين ومقدرين اهتمامكم بالبحث العلمي .

والسلام عليكم ورحمة الله وبركاته

عبدالله بن محمد
١٤٣٤ هـ

د. نورة
١٤٣٤ هـ

وزارة التربية والتعليم
إدارة التخطيط والتطوير
الإدارة العامة للتربية والتعليم بمحافظة

Appendix 14: Authorization letter for access to the school for Deaf boys

الملك عبدالعزيز آل سعود
وزارة التربية والتعليم
(٢٨٠)
الإدارة العامة للتربية والتعليم بمحافظة [REDACTED]

الرقم :
التاريخ :
المرفقات :

التخطيط والتطوير التربوي
البحوث والدراسات التربوية

إلى : مديري ومديرات معاهد الأمل ومدارس الدمج لضعاف السمع (بنين وبنات) .
من : مدير إدارة التخطيط والتطوير
بشأن : تسهيل مهمة الباحثة نجوى عبود صالح بأسنبل
السلام عليكم ورحمة الله وبركاته . وبعد :

إشارة إلى إحالة سعادة المدير العام للتربية والتعليم بمحافظة [REDACTED] ذي الرقم بدون وتاريخ بدون ، المبنية على خطاب الملحق الثقافي السعودي بنسبة برقم كد/٨٩٢ وتاريخ ١٤٣٤/٢/٤هـ بشأن تسهيل مهمة الباحثة / نجوى عبود صالح بأسنبل في بحثها بعنوان "دراسة فعالية استراتيجيات ثنائي اللغة في تطوير مهارة القراءة لدى الطلاب والطالبات ذوات الإعاقة السمعية" كمتطلب تكفي للحمول على درجة الدكتوراه في تخصص التربية الخاصة / دراسات الصم ، وترغب الباحثة في تطبيق أداة بحثها (برنامج تطبيقي وفق مقاييس القراءة للمرحلة الابتدائية) على عينة من طلاب وطالبات معاهد الأمل وطلاب وطالبات الدمج لضعاف السمع في المدارس المطبقة للبرنامج بنين وبنات في تعليم جدة ، حيث تم فحص أداة البحث وتبين استيفائها ضوابط الوزارة بهذا الخصوص .

نأمل منكم تسهيل مهمة الباحثة ، ومندوبها المقروض منها الأستاذ [REDACTED] بتكفيهما من تطبيق أداة بحثه على طلاب وطالبات المعاهد والطلاب والطالبات المنتسبين لبرامج الدمج لضعاف السمع بمدارسكم ، شاكرين ومقدرين تعاونكم واهتمامكم بالبحث العلمي .

والسلام عليكم ورحمة الله وبركاته

عم محمد كافي
١٤/٢/٢٠٢٤

إدارة التخطيط والتطوير
الإدارة العامة للتربية والتعليم بمحافظة [REDACTED]