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Teaching of Arabic language proficiency (pronunciation) to non-native speakers: Designing interventions using ICT

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Copyright Statement

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Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet the requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Sultan Almelhes
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Table of Contents

List of Tables

List of Figures

List of Appendices

List of Transliterations

Transliteration	Arabic word	Meaning
Shebhul Al Jazeera Alarabiya	شبه الجزيرة العربية	Arabian Peninsula
Tajweed	التجويد	Set of rules that dictate the proper pronunciation and melodic intonation of Qur'an recitation
Naqliyat	نقليات	Traditional transmitted knowledge or the deductive logic of Islam
Aqliyat	عقليات	The rationally derived knowledge of the world
alif	الألف	
tashkil	تشكيل	Diacritical markers
Imams	امام	
Al-Haram	المسجد النبوي	Prophet's Mosque is a mosque established and originally built by the Islamic prophet Mohammed
Diriyah	إمارة الدرعية	Diriyah is a town in Saudi Arabia located on the north-western outskirts of the Saudi capital, Riyadh.
Nejd	نجد	Nejd is the geographical central region of Saudi Arabia
Hijaz	الحجاز	Hijaz is a region in the west of present-day Saudi Arabia
Hadith	احاديث النبي عليه الصلاة والسلام	Hadith is one of various reports describing the words, actions, or habits of the Islamic prophet Muhammad. Hadith is second rank after the Qur'an
Tafseer	التفسير	Interpretation of the Qur'an
salat	الصلاة	Prayer
halagat	حلقة تعليمية	Halaqat is study circle and meeting for the study of the Qur'an and Islam and so on

Abbreviations

CALL	Computer Assisted Language Learning
CLT	Communicative Language Teaching
CMC	Computer-Mediated Communication
Institute	Arabic Language Institute for Non Native Speakers

Dedication

I would like to dedicate this thesis to my father who has always supported and encouraged me in my learning. I also cannot forget my eyes and soul, my mother, who has always given me her care and love. I would like to thank my wife for her patience and support, my beloved daughter Jumanah, my son Abdul-Aziz and my new baby Abdulkarim. I would also like to thank all my brothers and sisters.

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Abstract

I never teach my pupils; I only attempt to provide the conditions in which they can learn.
(Albert Einstein, Einstein's Secret, 2015)

Knowledge of Arabic, the language of the Qur'an, is essential for Muslims globally because it is used for prayer, Qur'anic recitations and in other religious practices. Saudi Arabia, as the custodian of two of Islam's three most sacred sites, believes it has a mission to protect the purity of classical Arabic and promote it amongst the world's Muslim population. The country's Ministry of Education operates many language institutes dedicated to delivering training to non-native speakers to improve the quality of classical Arabic pronunciation spoken across the world. This study endeavours to fill a research gap in the field of classical Arabic pronunciation through examining the current pedagogical approach at a typical Saudi Arabian language institute and contrast this with a technology-based constructivist approach. The study uses qualitative research methods employing an action research approach which includes focus group interviews with a number of students and teachers.

The data was analysed using a thematic approach and the results are discussed in relation to Bernstein's concepts of classification in terms of power and the overall curriculum, and framing in terms of control and the pedagogical process. The introduction of a technology-based constructivist approach resulted in a shift from a teacher-centred pedagogic approach with strong classification and framing to an approach characterised by student-centred learning. The pedagogy amounted to a shift in power and control to the student, demonstrating weaker classification and framing. The implications of the pedagogical change also represented a change in relative

power and control in teacher-student relations according to Foucault's power relations model.

The study also found that the use of technology enhanced student learning and engagement with learning to learn. The pronunciation teachers and students interviewed preferred to use technology in the teaching and learning process. However the findings indicated that the use of technology in teaching practice was largely neglected due to a lack of leadership on the part of the institute's administration. Despite government policy supporting technology usage backed up with generous funding for education, few meaningful steps in the direction of technology-based learning have been made. Obstacles to pedagogical and technological reform include poorly maintained or non-existent infrastructure, limited availability to technology by either students or teachers and poor professional training for teacher's technological usage.

Chapter 1:
Introduction

1.1 Introduction

Learning a foreign language is based on four different skills reading, listening, writing, and speaking. There are a number of aspects to speaking a language correctly, one of which is pronouncing words appropriately (Alsabaan, 2015). As an Arabic language teacher in a Saudi Arabian higher education institute I share responsibility for students who come from a range of cultural and linguistic backgrounds to learn classical Arabic, primarily for devotional purposes. Classical Arabic is the language of public recitation as well as the language for poetry in the Arabian Peninsula (Huthaily, 2008).

Many of non-native speakers experience difficulties accurately pronouncing Arabic, particularly the pronunciation of eight specific consonant sounds and words including these sounds. In addition to this general knowledge of what sounds are difficult in Arabic for non-Arabic speakers, I also experienced the subtle nuances of this phenomena during my career as an Arabic language teacher. Together with colleagues who have shared similar experiences and discussed possible solutions, I focused a majority of my teaching on these specific eight consonant sounds. In addition that eight of these sounds was also supported by (Jameel, 2010). Despite addressing the main pronunciation problems it continued to seem that my teaching was having minimal impact on students' pronunciation.

As a result, I am particularly interested in the pronunciation skills for Arabic as a foreign language. This study then is my attempt to assist both Saudi Arabia's educational institutions and students to benefit from constructivist pedagogies and

technological advances available to language learners. I believe a new technology-based pedagogy can improve and assist learning outcomes, such as in my case for learning Arabic pronunciation as a second language learner at a university in Islam's second holiest city of Medina. Many studies (as outlined in Chapter 3) mention the potential capabilities of technology in conjunction with constructivist approaches in the field of teaching and learning pronunciation. However, as Lee (2013) comments, most Saudi researchers have noted that technology use in the classroom is still the exception rather than the rule.

Consequently it is my desire to improve Saudi Arabia's educational landscape to some extent by advocating educational reforms based on changes to teaching pedagogies and available technology. My experience and conversations with teachers showed me that they are enthusiastic about changing teaching approaches where they perceive that improved learning outcomes result. Therefore, this study seeks to demonstrate benefits to both students and teaching staff derived from a technology-based pedagogy in contrast to the current traditional methods which I believe hinder students from achieving their full potential.

As a sign of its commitment to promoting Islamic values throughout the international Islamic community, Saudi Arabia's government has facilitated Arabic language learning for non-native Arabic speaking students through the establishment of five Institutes of Arabic Language for Non-Native Speakers at different universities, one of which was the site for this study (herewith named the Institute).

The Institute now forms part of a Gulf Cooperation Council (GCC) initiative, launched in 2005, seeking to modernise teaching processes through techniques which comply with culturally acceptable values, such as compatibility with Islamic

principles. The GCC initiative achieved consensus on the best way forward through dialogue conducted in an atmosphere of shared values and has resulted in the development of software devices for science and mathematics, and the creation of a digital portal for teachers in order to assist Arabic language learning and Islamic education (Metwalli, 2009, p. 316). Despite the GCC stated objectives and these admirable, but modest achievements, there appear to be few tangible moves towards embracing technology at the Institute.

Saudi Arabia's commitment to promoting Arabic comprehension in general was reconfirmed when it established the King Abdullah bin Abdul Aziz Arabic Language International Center in Riyadh in 2010. The centre was assigned five objectives with one of them being maintaining the integrity of the Arabic language. However, to achieve this, a major effort to integrate the work of several existing educational institutions needed to be made simultaneously.

It is in this context that this thesis investigates adopting a constructivist pedagogy utilising technology for the teaching of Arabic pronunciation in the classroom. Furthermore, the study emphasises the significance of using constructivist practices rather than didactic traditional methods in teaching Arabic. The study also investigates the relationship between power and control in constructing knowledge which occurs when changing the teaching methodology to one based on a constructivist pedagogy. A classroom power shift can be expected to take place resulting from an introduction of technology and change in pedagogical approach. This shift occurs because constructivist pedagogies provide students with the ability for them to build their own knowledge while being aided by teachers who primarily act as learning facilitators. The study is also concerned with the perspectives and experiences

of the teachers at the Institute who are engaged in delivering the curriculum through traditional methods of face-to-face learning and from the students who are experiencing this form of delivery.

To achieve the teaching objective of assisting students to acquire knowledge or to change existing knowledge, skills, ideas or practices, teachers frequently need to change the learner's behaviour. Consequently selecting the most appropriate teaching method should be undertaken according to the context of the cultural composition of the classroom, which in the case of students at the Institute includes a broad group of nationalities and languages. Because everyone has their own way of constructing knowledge the most appropriate teaching method may be that which aids the greatest number of students through approaches which are compatible with students.

Students attending the Institute originate from a range of countries, yet all share many common cultural features which derive from their shared Islamic faith. As the Institute is part of a religiously oriented university it typically attracts interested students who harbour ambitions of religious leadership in the Muslim communities of their home countries.

Across the Muslim world Saudi Arabia is respected for the quality of its Islamic education, partly due to the perception of the purity of Arabic spoken there and also because the holy cities of Makkah and Medina are situated within its borders. Therefore, many students from non-Arabic countries believe they will experience a better example of Islamic life by immersing themselves in a genuine Arab society and educational institution, such as that found at the Institute. Additionally many Arabic language students are studying at the Institute due to successfully being awarded a scholarship which made it financially possible for them to attend. Many students,

without such scholarships, would literally be unable to afford to study at the Institute because of the costs. Therefore, studying in Saudi Arabia can be both a spiritual experience for some students, while also being a prestigious opportunity for many from undeveloped countries.

Correct recitation of the Qur'an forms an essential cornerstone of Islamic religious practice and indeed it is not possible for Muslims to fulfil the obligations of their faith without some knowledge of classical Arabic due to compulsory prayers being recited entirely in Arabic. Therefore, Arabic language teaching forms a cornerstone of all religious education, including at an academic level, such as that at the Institute.

As a teacher at the Institute, I commenced by teaching Arabic grammar and moved on to teach pronunciation. There are significant differences between teaching grammar and pronunciation and I observed there were also different opportunities for incorporating technology into teaching. In the absence of technology, except PowerPoint which I used as a personal initiative, I observed that students in the grammar classes were more enthusiastic and active learners unlike those in the pronunciation classes. It became apparent that lack of enthusiasm in pronunciation classes could be changed by utilising technological innovations and modifying teaching approaches, as used in Western educational facilities. This convinced me change was needed.

The Institute's course included a single 55-minute pronunciation class per week over a 14-week semester to cover nine pronunciation chapters from the textbook authorised by the Institute. In comparison, grammar was taught for six to eight lessons per week, depending on which of the four levels the student was at, during their two-

year course of study. As a result I noticed that a number of students spoke grammatically accurate Arabic, but they faced difficulties in pronunciation. During my teaching experience, I observed that most students in the Institute encountered difficulties linked to the same specific Arabic sounds, which appeared to indicate inadequate pronunciation proficiency. Dweik and Al-Shallakh (2015) also emphasised in their study, which involved 53 participants who learn Arabic as a second language, that non-native Arabic speakers found pronunciation difficult and required hard work and skill to master correctly.

Arabic language sounds are categorised into various groups based on their similarity in pronunciation. Thus, the students usually faced pronunciation problems which may alter the overall meaning of their message. For example, when a student pronounces the sentence "I will go to *Al-Haram* mosque" (*سوف أذهب إلى الحرم*) they usually pronounce it as (*سوف أزهب إلى الـمرم*) "I will go to the pyramid". It is clear that the meaning is completely different.

Table 1-1 Common pronunciation errors of Arabic

No.	Original letters	IPA	Example	Actual meaning	Switched letters	IPA	Example	Alternative meaning
1	ض	dˤ	مضار	Disadvantages	د	d	مدار	N
					ز	z	مزار	
2	ص	sˤ	صوت	Voice	س	s	سوت	N
								Inert
3	ح	ħ	حامل	Pregnant	الهاء	h	هامل	N
					خ	x	خامل	
4	ط	tˤ	طريق	Road	ت	t	تريق	Name of women
5	ظ	ðˤ	ظلال	Shades	د	d	دلال	Emirate
6	ع	ʕ	عمارة	Building	إ	ʔ	إمارة	N
7	خ	x	خبز	Bread	ك	k	كبز	N
								Template
8	غ	ɣ	غالبا	Often	ق	q	قالب	

Table 1-1 lists some of the most common mistakes in pronunciation and how the meaning varies when changing the sound of the letter. This in turn led to my search for a method to assist students to correctly pronounce specific problematic Arabic sounds.

My investigation discovered that these words contained the eight consonants identified as particularly difficult for non-Arabic speaking students to learn and practice (Table 1-2). Students' difficulties are due to a combination of similarity in sound of these eight consonants to other letters and/or vocal unfamiliarity to any sound existing in the students' native tongue.

Table 1-2 Eight challenging consonants

Letter	IPA	Transliteration	Sound
ح	ħ	Ḥā'	voiceless pharyngeal constricted fricative
خ	x	Khā'	voiceless velar fricative
ص	$s^ʕ$	Ṣād	voiceless post-dental sibilant emphatic
ض	$d^ʕ$	Ḍād	voiced post-dental emphatic stop
ط	$t^ʕ$	Ṭā'	voiceless post-dental emphatic stop
ظ	$ð^ʕ$	Ẓā'	voiced post-interdental emphatic fricative
ع	ʕ	cayn	voiced pharyngeal fricative
غ	ɣ	Ghayn	voiced uvular fricative

Due to the limited time I had for pronunciation classes and the lack of technological tools that could help me as a teacher, my teaching approach was didactic. I employed the strategy of drilling wherein students repeated letters, words or phrases after me, their teacher. Similar to other pronunciation teachers at the Institute I had adopted a behaviourist approach to the teaching of pronunciation. I can say from experience that the students did not benefit much from my classes which used the drilling method; nor

did these classes have a significant impact on their learning outcomes in reading and writing courses.

Education based on traditional methods and behaviourist principles implies that the teacher is the centre of knowledge while the student is the passive recipient of knowledge. The teacher plays the central role in transferring knowledge to students in which all pupils are regarded as being at the same level of capability. Each student has his/her own individual characteristics. Thus, traditional teaching approaches cannot readily accommodate individual differences which actually exist in students' ability. So students are simply expected to mirror their teacher's instruction. In pronunciation classes the learning process is limited to students receiving, monitoring and imitating their teacher's sounds.

The inadequacies of this approach have been observed by Krieger (2007) who affirms that some Saudi Arabia's universities continue to under-perform by perpetuating outdated teaching methods, which he ascribes to a stifling bureaucracy determined to preserve centralised control by resisting innovative change. From my own earlier teaching experience I already harboured a lack of personal conviction that all students benefited from traditional teaching approaches and I wanted to investigate how change to my pedagogy and the use of technology might impact on my students' learning.

1.2 Problem of the study

Learning the Arabic language is important for many non-native Arabic speaking foreigners. In the Institute, students come from many countries and speak a wide range of unrelated languages such as English, Swahili, Malay, Chinese and Thai. Students

are interested to come to the Institute to learn Arabic for reasons primarily linked to employment or religion. However, some students also just want to learn Arabic as a second language for their own personal interest.

In regard to pronunciation, accurately spoken classical Arabic is significant for students aspiring to become religious leaders, such as *Imams*, and especially so for those students planning to continue their studies further by enrolling in the Qur'an faculty. Therefore, the importance of accurate Arabic pronunciation for students at the Institute is significant as their future careers are potentially linked to it. As a result demand exists for language teachers to provide advanced language teaching methods for learners to satisfy existing requirements (Yunis & Sheikh, 2003, p. 20).

All teachers at the Institute are free to choose which method to employ in their classrooms in the delivery of the prescribed curriculum, however all teachers used the traditional method. Such approaches, including drilling, ascribe equal weight to each Arabic sound without focusing on the difficult sounds. This is because teachers attempt to cover all the sounds in the curriculum and the authorised textbook which gives equal emphasis to all letter-sounds from the easy ones through to the more difficult ones. As a result of the limited amount of time in pronunciation classes, the difficult sounds are not given any more time than any others because teachers are following the curriculum while using the practice of drilling to teach difficult sounds in the same way as they do with easy letter-sounds. As noted by Shawer (2010) traditional and didactic teaching methods can have negative impacts on student engagement with the subject and therefore adversely affect their learning. With such approaches teachers exercise control of the curriculum and pedagogy over student

knowledge (Jameel, 2010) but in so doing do not maximise learning opportunities for pupils.

As well as being a deliberate choice of the teachers at the Institute, the traditional approach to teaching has also become an expectation of students. They have come to understand that the appropriate way to learn pronunciation is through copying the behaviour of teachers (Leat & Reid, 2012), thus normalising the traditional method for them. Chang (2010) mentioned that dominant teaching methods create gaps in relationships between teachers and students because the teacher pays greater attention to the teaching method itself without regard to the learning capacity of the class or identifying the specific needs of individual students. The existing teacher-centred pedagogy and the nature of the teacher's role therefore has a major influence on student learning through the transference of knowledge of the Institute's pronunciation curriculum.

Therefore, the problem of this study lies in investigating how a different method of teaching Arabic language to non-native speakers may influence students' learning outcomes. A different teaching method complemented with technology usage may potentially engage students with the subject far more than existing approaches. If a different pedagogical approach increased engagement which improved outcomes then such an approach can be said to represent an enhancement of teaching and learning practices. As such, this study will address the main research question of:

> **What is the effectiveness of using ICT for teaching Arabic to non-native speakers, in particular its influence in developing oral pronunciation skills?**

Based on the aim of this study, three supporting research questions will provide direction for the research:

1. How is technology currently used in teaching Arabic to non-native speakers at the Institute?
2. How does a technology-enhanced constructivist learning approach influence students' pronunciation of Arabic?
3. What were students' responses to a technology-based constructivist approach to learning Arabic pronunciation?

The reason for these supporting questions is to first establish the current level of technology usage in teaching pronunciation by teachers at the Institute and to obtain their views on the use of technology for teaching. The supporting questions also help to gauge the changes in student pronunciation proficiency and engagement in learning following the pedagogical interventions utilising technology undertaken during the study.

1.3 Purpose of the study and its significance

This research represents a contribution to the teaching and learning approaches in higher education in Saudi Arabia. It is the first study to explore the perceptions of non-native students and their pronunciation teachers regarding technology usage in learning Arabic pronunciation in conjunction with a constructivist pedagogy. This study furthermore seeks to determine the consequences that technology usage in Arabic teaching to non-native speakers has on curriculum design and pedagogy. The views of the thesis participants forms a critical component of the study concerning teaching which can contribute to reforming and developing pedagogy as well as curriculum design because it combines theory with practice. Moreover because the study investigates the attitudes of teachers who are involved in teaching Arabic to a second

language community, their opinions regarding the importance of using technology in teaching is important.

Additionally the opinions of students expressed after the study's intervention sheds light on the impact of a technology-based pedagogy for educators who support improving their teaching processes. This study is also important because it may serve as a foundation for further research into learning a second language, for languages other than English. Currently academic research in this field is overwhelmingly dominated by studies dealing with English language acquisition as a foreign language or as an additional language.

The research findings also have the potential to identify best practice for designing and using technology to teach Arabic pronunciation to non-native speakers in a way that promotes student self-direction and facilitates student learning. It will draw upon the work of Bernstein (1971, 1975) and Foucault (1972, 1977, 1987) in designing pedagogy and curriculum that produce improved learning outcomes. To the best of my knowledge this study contributes to literature gap by taking the constructivist approach rooted within Bernstein and Foucault. This theoretical underpinning established a framework to view how pronunciation is developed by students who speak Arabic language as a second language.

This study will also assist students to improve and develop their pronunciation skills for words whether they are used in an educational or social context which will eventually assist students become *Imams* of their respective communities. The study through investigating the potential benefits of a technology-enhanced curriculum and pedagogy will promote a move away from the dominant traditional teaching pedagogies in Saudi Arabia and may therefore make a genuine contribution to

improved learning outcomes in the kingdom's Arabic language institutes for non-native speakers.

1.4 Thesis structure

The thesis consists of nine chapters. Chapter 1 provides a background about problems facing pronunciation learning and discusses the thesis questions in relation to how they may provide answers to the problems of the study. The significance of the study in relation to the language education community is also covered.

Chapter 2 provides background information about the Arabic language, the Saudi Arabian context in which the Institute operates, and the role the pronunciation class plays within the diploma course. Understanding the linguistic and institutional context that the Institute operates in provides context for this research into pedagogical change and the potential role technology could play in improving pronunciation training.

Chapter 3 introduces the theoretical frameworks underpinning the study focusing on classification and framing (Bernstein, 1971, 1975) and power relationships (Foucault, 1972, 1977, 1987) in order to examine behaviourist and constructivist pedagogic approaches. It also considers the literature relating to the importance of technology in teaching and factors preventing its incorporation into teaching practices.

Chapter 4 presents the methodology of the study explaining qualitative research and describing the research design. It covers the action research methodology, the participants, the data collection and data analysis procedures, and ethical issues.

Chapters 5, 6 and 7 cover the results of the study. Chapters 5 presents the results from the analysis of the teachers' focus group interviews. It will argue that four

themes emerged: (i) persistence of traditional (behaviourist) pedagogy, (ii) lack of awareness of technology, (iii) advantages of integrating technology in educational contexts, and (iv) the barriers to technology integration in teaching and learning.

Chapter 6 provides the findings from the action research undertaken as recorded in my daily journal including my observations. It will discuss two themes which were identified: i) changing teacher practices which involved pedagogical expectations, learning space and reaction by students, and ii) improving learning which encompassed student needs, curriculum design, using cassette tapes and learning outcomes.

Chapters 7 presents the results from the analysis of the students' focus group interviews. It will review four themes: i) technology and its role to increase engagement, ii) pedagogical insights such as collaborative learning and monitoring of their pronunciation, iii) student suggestions such as curriculum adjustment, qualified teachers and using the Qur'an for learning pronunciation, and iv) access and availability of technology.

Chapter 8 presents a discussion of the results including the interpretations of the findings related to pedagogy and curriculum. It demonstrates pedagogical insights as they relate to control and power exercised by students. It also discusses the promotion of student learning aided by technology as well as barriers that influence technology integration at the Institute.

Chapter 9 as the conclusion chapter summarises the core of this study. This study's unique characteristics and original contributions to academia, particularly in the Middle East are discussed. Shortcomings in the research and its methodology are covered and explained as are recommendations. Further study needs are suggested and

the chapter and this thesis end with my own personal experiences of the pronunciation training and what I would like to achieve to improve Arabic language teaching in Saudi Arabia.

Chapter 2:
Background

2.1 Introduction

In order to provide an understanding of the context in which the research was undertaken it is necessary to acknowledge the unique aspects of Arabic as the medium through which Muslims believe the Qur'an was delivered to mankind. This together with its role as the language of Islamic prayer makes it incumbent upon Muslims to acquire some Arabic knowledge. Therefore, knowing the historic and linguistic background of Arabic and Saudi Arabia places this study in its true context.

The chapter begins with an overview of the Arabic language and describe its importance in the world today in both its colloquial and literary forms. The guidelines governing the correct pronunciation of classical Arabic of the Qur'an, which is related to literary Arabic, are comprehensively laid out in the rules of *Tajweed*, which aims to preserve accuracy of Qur'anic recitation and during Muslim devotional practice.

The chapter also provides an overview of the Kingdom of Saudi Arabia's history and foundation. It explains how the Kingdom of Saudi Arabia, as the birthplace of Islam and as custodian of the two holiest Islamic sites, of Makkah and Medina, seeks to promote Arabic language learning primarily for spiritual purposes. It also covers the Saudi Arabian context in which Arabic is taught and the country's general education policy. Following this overview, an outline of the Arabic language course at the Institute will be made detailing the class levels and the curricula to permit an understanding of the pronunciation class within the diploma course offered at the Institute. Finally, the chapter discusses the pronunciation component of the Diploma of

Arabic Language because it is important to know where the relatively small number of pronunciation lessons fit into the course. It then discusses where the difficult sounds within Arabic occur and explain why they are problematic for non-native speakers of Arabic. The chapter finishes by explaining the points of articulation which, if emulated by students correctly, dramatically improve pronunciation accuracy.

2.2 Arabic language

This section provides an insight into the role Arabic plays as the vernacular for numerous countries and as the global language of Islam and touches on the history of the Arabic script. The section explains how colloquial Arabic is distinguished from literary Arabic and why classical Arabic retains continuing importance. The section finishes by outlining the Islamic science of *Tajweed*.

According to Abu Shanab (2007) there are three linguistic perspectives associated with languages. First, for Muslim believers, languages were initiated by Allah. Second, languages were inspired from the natural sounds such as water trickling and the sound of the wind. The third perspective combines both perspectives where Allah inspired language in human beings through sounds present in nature.

The Arabic language is a member of the Semitic group of languages and is closely related to Hebrew and Amharic (spoken in Ethiopia). In 2008 there were approximately 206 million native speakers who spoke Arabic as their first language in several geographical regions. It is an official language in 34 countries, including several non-Arabic nations: the United Arab Emirates, Jordan, Algeria, Bahrain, Yemen, Oman, Israel and the Palestinian Territories, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Egypt, Iraq, Kuwait, Lebanon, Libya, Mauritania, Morocco, Tunisia,

Turkey, Iran, Niger, Tajikistan, Tanzania, Uzbekistan, Djibouti, Afghanistan, Chad, Mali, Kenya, Comoros and Eritrea (Zawaydeh, 2008).

As the importance of Arabic stems from it being the language of the Qur'an, it is considered a divine language among Muslims, as evidenced in it being the language of the obligatory prayers for Muslims. Therefore, the spread of the Muslim Arabic civilisation from the Arabian Peninsula in the 8th century, led to non-Arabs learning Arabic. As a consequence, Arabic became an international language of art, science and technology spoken by Arabs and non-Arabs alike (Zawaydeh, 2008).

Arabic has 28 consonants, three long vowels, three short vowels and two diphthongs (Brierley, Sawalha, Heselwood & Atwell, 2014; Sabira & Alsaeed, 2014). However, Arabic vowel sounds are quite different from letters. Written Arabic, which is an imperfect abjad (script devoid of vowels), represents all vowel sounds by a single letter (*ا alif)* with diacritical markers, (*tashkil* in Arabic), used to indicate the precise vowel represented.

One of the most significant characteristics of the Arabic language has been its longevity. Misaddi (2004) asserts, based on linguistics, that a language needs up to four centuries to start altering gradually; however because Arabic is the language of Islam, changing the way it is pronounced has been actively resisted. Because Arabic possesses a rich vocabulary, this has permitted it to organically create new words from within itself to describe things which previously did not exist, such as the term 'weekend' عطلة نهاية الأسبوع. Rather than absorbing a foreign word for this term, Arabic was able to create a new word from its own vocabulary to describe a concept historically alien to the Arab world. Nevertheless, Arabic has also adopted many new words into its vocabulary largely drawn from other languages, particularly for new

inventions (such as computers) or for things which were unknown to Arabs in historic times (such as kangaroos or cement). Despite this, the way Arabic is pronounced has remained essentially unchanged over the last 17 centuries.

As Islam gained considerable numbers of non-Arabic speaking followers in the earliest days of the religion, substantial numbers of people began to learn Arabic for devotional purposes. Muslim scholars, seeking to prevent the introduction of non-Arabic nuances into Qur'anic recitations and Islamic prayers, recorded rules to be followed to ensure correct pronunciation of the Qur'anic text. At the same time diacritical marks were added to written Arabic to ensure correct pronunciation of vowels. These rules governing classical Arabic's pronunciation in relation to the Qur'an were named the science of *Tajweed* (Elhadj, 2010). *Tajweed* is not confined to academia or a preserve of the pious but extends to everyday practice and is particularly relevant to this research, as in essence all Arabic pronunciation taught at the Institute must ultimately be measured against the standards codified by *Tajweed*.

Beginning in the 8th century Islamic civilisation in turn carried Arabic across the world where it became the medium for an intelligentsia and the language of everyday usage (Suleiman, 2003). As Arabic's prestige increased with the spread of Islamic civilisation it has become one of humanity's most influential languages over the last nine centuries (Madkour, 2003). Written Arabic in its current recognisable form is more than 17 centuries old. As well as being used for the Arabic language its alphabet was adapted by many non-Arabic languages and continues to be used as the basis for such languages as Farsi and Urdu. It was even used as the first written script for South Africa's Africaans language (Van den Berg, 2005).

Today Arabic is one of the world's most significant languages and is one of the six official languages of the United Nations (Heath, 2005). In many Muslim countries people are fluent in several languages simultaneously. For example in Iran many ethnic Arabs will use Arabic at home and with friends while speaking Farsi equally fluently at work, school and when communicating with officialdom. Furthermore local media is predominantly in Farsi while Iranian Arabs can also receive Arab television from the Gulf through satellite television which is extremely popular.

2.2.1 Contemporary Arabic

Arabic, like other living languages, is subject to evolution and development and is resilient enough to permit absorption of new vocabulary necessary to accommodate advances in science and technology, the discovery of new things and the introduction of previously unknown concepts. However, side by side with adaptation, Arabic determinedly seeks to preserve its linguistic heritage.

From its historic origins, today's Arabic usage in society is categorised into two types: (i) colloquial Arabic; and (ii) literary Arabic.

Colloquial Arabic is the spoken language which varies from region to region within the Arab world and is heavily influenced by local accents. Literary Arabic, also called modern standard Arabic, is formal Arabic used throughout the Arabic speaking world typically by academia and the media, and forms the basis of Arabic which is taught to foreign students. Although there are several Arabic dialects, people use modern standard Arabic when writing. Literary Arabic, which is very formal in style, resembles the classical Arabic of the Qur'an with the addition of modern and introduced words and terms minus some archaic words and terms found in the Qur'an but no longer used in everyday communication. Despite some differences in

vocabulary, literary and classical grammatical rules remain the same and words are also pronounced the same (Alosh & Grandin-Gillette, 2012).

The importance of the Arabic language to non-Arabic speakers seeking to learn the language today can be categorised into three areas:

(i) daily life

(ii) special purposes such as for academic or professional pursuits, and

(iii) learning religion.

Delivering Arabic language learning education to non-native speakers can be achieved through equipping students with basic skills and information to facilitate everyday processes such as communication skills required in daily life which usually uses colloquial and literary Arabic. Another important reason for learning Arabic is for specialised purposes such as those studying for professional occupations such as diplomacy which conducts relations among the Arab nations (Ayuba, 2012). Arabic is typically a job requirement for many occupations in Arabic speaking countries with a necessity for colloquial and literary Arabic for would-be employees. Perhaps the most significant driver of all for learning Arabic is Islam. Muslims may not necessarily speak Arabic but they need to learn it to read the Qur'an in Arabic and to pray in Arabic. However, high levels of accuracy in pronunciation are frequently difficult to achieve for non-native speakers. For those who teach Islam and are visibly the leaders of Islam, or aspire to these positions, it is essential that their pronunciation of classical Arabic should be impeccable. Hence the importance of providing or developing teaching strategies that can assist non-native speakers to accurately pronounce the Qur'an and to investigate how technology may assist students to improve their learning outcomes and engagement in learning.

To summarise, this section provided background about the Arabic language: its development historically and globally and religious importance. The historic importance of Arabic continues through colloquial and literary Arabic which is related to the classical Arabic of the Qur'an, taught according to the rules of *Tajweed* التجويد . Understanding this provides an insight into the Institute's educational purpose. The next section builds the background context of the study further by describing the Institute in relation to fulfilling the kingdom's education policy. It initially provides an overview of the Kingdom of Saudi Arabia's history, before focusing on education in the Kingdom of Saudi Arabia. The focus is then narrowed to describe the curriculum of the diploma course and that of pronunciation.

2.3 Saudi Arabia

The previous section touched on the Arabic language's colloquial and classical forms and the language's importance resting on it literally being the language of Islam. The rules of *Tajweed* were discussed which are the foundations of the Institute's diploma program. This program itself plays a small part within the kingdom's broader educational program. This section looks at the historic background to Saudi Arabia to enable a contextual understanding of why classical Arabic teaching remains an educational priority.

The Kingdom of Saudi Arabia is a relatively new nation-state, its current incarnation dating to 1932, but the land making up the modern day kingdom is situated in one of the most ancient and religiously important places on the planet. Oil wealth has enabled the country to develop rapidly; however modernisation has not resulted in its citizens abandoning their religious-based traditions and culture. Quite the opposite

has occurred as Saudi Arabia has used some of its newfound prosperity to create higher education institutions to protect and promote its religious and cultural values domestically and abroad.

Geographically Saudi Arabia is the largest country in the Middle East and constitutes the bulk of the Arabian peninsula. The Arabic name for this peninsula is *Shebhul Al Jazeera Alarabiya* , which literally means the 'peninsula'. Saudi Arabia is 2,250,000 square kilometres in size. The modern Kingdom of Saudi Arabia is the third nation-state ruled by the Saud dynastic family. The first Saudi state existed between 1744−1818 and was called the Emirate of *Diriyah*, eventually being overrun by the Ottoman Empire. The second Saudi state, known as the Emirate of *Nejd*, lasted between 1824−1891 and was toppled by a rival Arab dynasty. Between 1891−1901 the spiritual head of the Saudi dynasty, *Imam* Abdurrahman, sought refuge in Kuwait. In 1902 the future King Abdul Aziz Al-Saud managed to restore his dynasty's rule over Riyadh and gradually extended power other regions in subsequent years. In 1932 King Abdul Aziz finally exerted control over the entire geographic region of the modern state and united the *Nejd* and *Hijaz* regions by proclaiming the Kingdom of Saudi Arabia. European colonialists apparently believed the deserts of the Arabian peninsula contained nothing worth taking possession of, showing minimal interest in the region until oil was discovered in large quantities following World War II.

As well as occupying an important position in the Islamic world, Saudi Arabia is in a strong economic position because of its oil wealth and status of holding the world's largest proven oil reserves. Oil production has enabled the kingdom to become a modern country in a short time. The official language is Arabic while English is

understood and used widely due to its contemporary role as the commercial world's lingua franca.

Religious, cultural and societal norms are powerful factors which influence standards within Saudi Arabian society, both within the country and for its citizens living and travelling outside. For example the segregation of males and females is based on religious, cultural and societal norms that influence all aspects of life and extend to education. According to orthodox Islamic opinion, segregation between males and females is obligatory. As a result if there is a lack of female teachers, universities will use closed circuit television (CCTV) to enable female students to be taught in a class taken by a male academic (Almelhes, 2005).

2.3.1 Saudi Arabian education policy

The beginning of contemporary higher education in Saudi Arabia commenced in 1949 in Makkah with the establishment of the Sharia College; later merging with other institutions to form Umm Al-Qura University in 1981. Sharia law is overseen by a court, which makes decisions based on Qur'anic stipulations and the practice of the Prophet Mohammed and the first two generations of his followers which succeeded him. All courts in Saudi Arabia are to varying degrees Sharia based. As a result Sharia College graduates were able to pursue careers in an actual legal system rather than merely study Islamic sharia for spiritual satisfaction.

According to higher education statistics for 2014 there were 1,165,091 enrolled students and 54,673 faculty members in the kingdom attending145 state run tertiary institutions of which 25 were universities. Furthermore, there were 28 private higher education institutions with 75,119 students and 3512 faculty members (Ministry of Education − Higher Education, 2014). Since the reign of King Salman commenced in

2015, the Ministry of Higher Education and the Ministry of Education have been amalgamated into one ministry called the Ministry of Education (Al-jazirah, 2015).

The Ministry of Education in the Kingdom of Saudi Arabia has a stated policy objective of upgrading education through greater use of technology (Almalki, 2011; Alebaikan, 2010; Ministry of Education, 2015) which forms part of its Ten Year Plan 2004−2014 (Robertson & Al-Zahrani, 2012, p. 1138). This education goal has been supported by budgetary allocations to the sector. In the three financial years covering 2012−15 the Ministry of Higher Education's budget was increased from SAR204 billion (USD54 billion) for 2012−13, to SAR210 billion (USD56 billion) in 2013−14 and SAR217 billion (USD58 billion) in 2014−15 (Ministry of Finance, 2015). As a result there is top-down support for technology-assisted teaching from the senior educational bureaucracy with budgetary allocations to enable realisation of these objectives of using technology.

2.3.2 The Institute's diploma of Arabic language course

Medina is the second holiest of Islam's three holiest cities (Makkah, Medina and Jerusalem) and the Kingdom of Saudi Arabia takes its role as custodian of the two holiest cities very seriously. The establishment of a university in 1961 whose primary focus is Islamic education and the promotion of Islamic culture is physical evidence of Saudi Arabia's commitment to promoting its state religion. Because of the religious significance of the city of Medina, this city is the ideal home of such an institution.

All students and teachers are male and study both Arabic language and Islamic subjects. The university consists of eight faculties. In addition to the university's original five purely religious faculties, three secular faculties were added to the university in 2014. The five religious faculties are: i) the Qur'an studies faculty, ii) the

Islamic Sharia faculty, iii) Islamic theological studies faculty, iv) *Hadith* (Prophet Mohammed's sayings) studies faculty, and v) the Arabic language faculty. The three new faculties are vi) engineering faculty, vii) science faculty and viii) computing faculty.

The faculty staff members possess qualifications ranging from Masters to PhD degrees from different academic disciplines, and some of them have degrees in teaching Arabic language, while others have degrees in teaching Islamic studies, both relevant as the Institute's curricula comprises a mixture of both Arabic language and Islamic subjects.

Because the university attracts a substantial number of non-Arabic students (whose precise numbers fluctuate dramatically from year to year), it was decided to locate the Arabic Language Institute within the university. The students in the Institute attend because they wish to improve their Arabic language skills in preparation for further studies at the university. Consequently the Institute fulfils two roles: first, preparing students for further academic study through the medium of the Arabic language and second, improving Arabic language skills of students for service in non-native Arabic speaking Muslim communities.

Within the spectrum of Islamic education, the Institute's part is promoting the language of the Qur'an. As an institution it maintains a traditional behaviourist teaching approach with a highly segregated demarcation between areas of learning. In 2012 the Institute comprised an enrolment of approximately 1044 exclusively non-Saudi Arabian students comprising numerous nationalities together with 60 faculty staff members. The Institute offers a single two-year Diploma in Arabic Language for

all students, which despite its connection to the university, does not contribute any units towards any further studies there.

The primary objective of the Institute is to improve students' Arabic language skills. The study program at the Institute relies on different levels of learning. Each study program consists of four levels: level 1, level 2, level 3 and level 4, with each level taking approximately four months (Table 2-1).

Table 2-1 Levels and curricula of Diploma of Arabic Language course

First level	Second level	Third level	Fourth level
Grammar القواعد	Grammar القواعد	Grammar القواعد	Grammar القواعد
Speaking المحادثة	Speaking المحادثة	Speaking المحادثة	Speaking المحادثة
Reading القراءة	Reading القراءة	Reading القراءة	Reading القراءة
Writing الكتابة	Jurisprudence (Islamic law) الفقه	Jurisprudence (Islamic law) الفقه	Monotheism التوحيد
	The Hadith الحديث النبوي	The Hadith الحديث النبوي	Interpretation of the Qur'an تفسير القران
	Literary texts النصوص الأدبية	Selected stories of Sahaba قصص الصحابة	Vocal exercises (Pronunciation) الصوتيات
	Stories of Prophets قصص الأنبياء	Biography of the Prophet Mohammed سيرة النبي صل الله عليه وسلم	Orthodox caliphs الخلفاء الراشدون
		Tajweed التجويد	
		Monotheism التوحيد	

Students enrol in the appropriate level based on test results from their previous level's exams. Each student has to obtain a minimum score of 60% for each subject to be successful for advancement to the next level of study. If a student fails in an exam in one or two subjects, he has an opportunity to take another test two weeks after the end of exams. If he fails a second time, he has to study the full level again.

In learning to communicate in a language there is a powerful connection between pronunciation and reading and a parallel connection between pronunciation and writing. However, the strong classification and segmentation of the Institute's curriculum does not promote the learning of pronunciation within the context of reading or writing. It is taught in isolation, as a separate subject so it is effectively taught without a context. It should also be noted that students do not begin pronunciation classes (called Vocal Exercises) until the second level which is the only level where it is taught.

The segmentation of the curriculum at the Institute provides little opportunity for curriculum to be built on the basis of connecting students with other knowledge of the world or to enable integration between knowledge (Wang, 2014; Bernstein, 1971).

This section discussed Saudi Arabia's history and the role the diploma course plays in fulfilling the kingdom's education policy. An outline of the diploma course was discussed. The following section zeros in on the pronunciation component of that course and explains why the language's difficult sounds in fact pose a problem for non-native learners and why concentrating on these difficult consonants sounds is the focus of the entire subject.

2.4 Pronunciation as a component of the diploma

The previous section explained Saudi Arabia's history to establish why the kingdom prioritises teaching Arabic to non-citizens and outlined how it does this through the diploma course at the Institute. This section looks at the specific pronunciation component of that course and its greatest challenge: difficult consonant sounds.

A major aim for teaching the Arabic language is to enable learners to communicate linguistically whether orally or in writing. Increasing transnational population movements and commercial and cultural interaction between Arabic speaking and non-Arabic speaking peoples continues to increase the demand for Arabic language teaching, particularly verbal skills. Pronunciation is a critical aspect of oral communication and conversation while reading and writing of a foreign language alphabet is one of the most problematic foreign language learning issues that challenges learners (Homstad & Thorson, 1996).

The pronunciation class is included in the Institute's Diploma of Arabic Language because a high level of accuracy in Arabic pronunciation is frequently difficult to achieve for non-native speakers. However, for students who aspire to teach Islam or those seeking leadership positions within the Muslim community, it is important that their pronunciation of classical Arabic is impeccable. The difficulty in pronunciation of specific sounds and knowing the correct articulation points may hamper students' aspirations.

Within the two-year course pronunciation classes are held once a week and taught exclusively during the second semester. It is difficult to avoid the conclusion that pronunciation teaching is given a low priority, given the minimal time it is

allocated in the syllabus. Despite the minimal time allocated, accurate pronunciation is prioritised in Islamic practice, as reflected in its own science, *Tajweed*.

Correct language pronunciation is linked to the speaker accurately pronouncing each individual sound present in every word. To enable speakers to be understood correctly they typically need to master difficult to pronounce sounds which they may physically find challenging to produce through unfamiliarity or other factors such as the absence of similar sounds in their native languages. Many students may find it difficult to position their tongue or lips in the correct way necessary to produce the right sound. However, improving student pronunciation of Arabic is the core of this study and is of direct relevance to students whose future religious vocations may literally depend upon the quality of their spoken Arabic skills.

The difficulties in teaching how to correctly pronounce Arabic to non-Arabic speakers has long been known to centre on a relatively small number of consonant sounds which are present in Arabic but absent from some other languages. As a result of this foreknowledge the key to improving pronunciation of Arabic involves the crucial identification of the criterion of emphatic versus non-emphatic pronunciation. Typically where sounds have congruence between the non-native speaker's first language and Arabic there is no difficulty. For example, speaking of English Sabira and Alsaeed (2014, p. 187) stated:

> There are eighteen consonants common between English and Arabic. However, these common consonants are not always identical; there are some differences. /t/ in English is alveolar, but in Arabic it is dental. Here is a difference in the place of articulation; /d/ in English is alveolar, but dental in Arabic. /h/ occurs in initial and medial positions in English, but not finally, e.g., horse, behalf. In Arabic, /h/ occurs is finally, e.g. /dəlaləh/ 'Denote'.

Because correct pronunciation typically depends upon the posture of the speaker's mouth to reproduce an accurate sound, it is important for learners to understand the places of articulation. Researchers have divided the point of articulation of Arabic letters into three sections (Anis, 1961; Abdul Sabour, 1980; Turkistani, 1984):

(i) The throat

(ii) The tongue, and

(iii) The lower and upper lip.

Figure 2-1 visually marks these articulation points. Some of these points of articulation are difficult for non-native speakers of Arabic to produce because it is unnatural for them to emulate the necessary vocal posture.

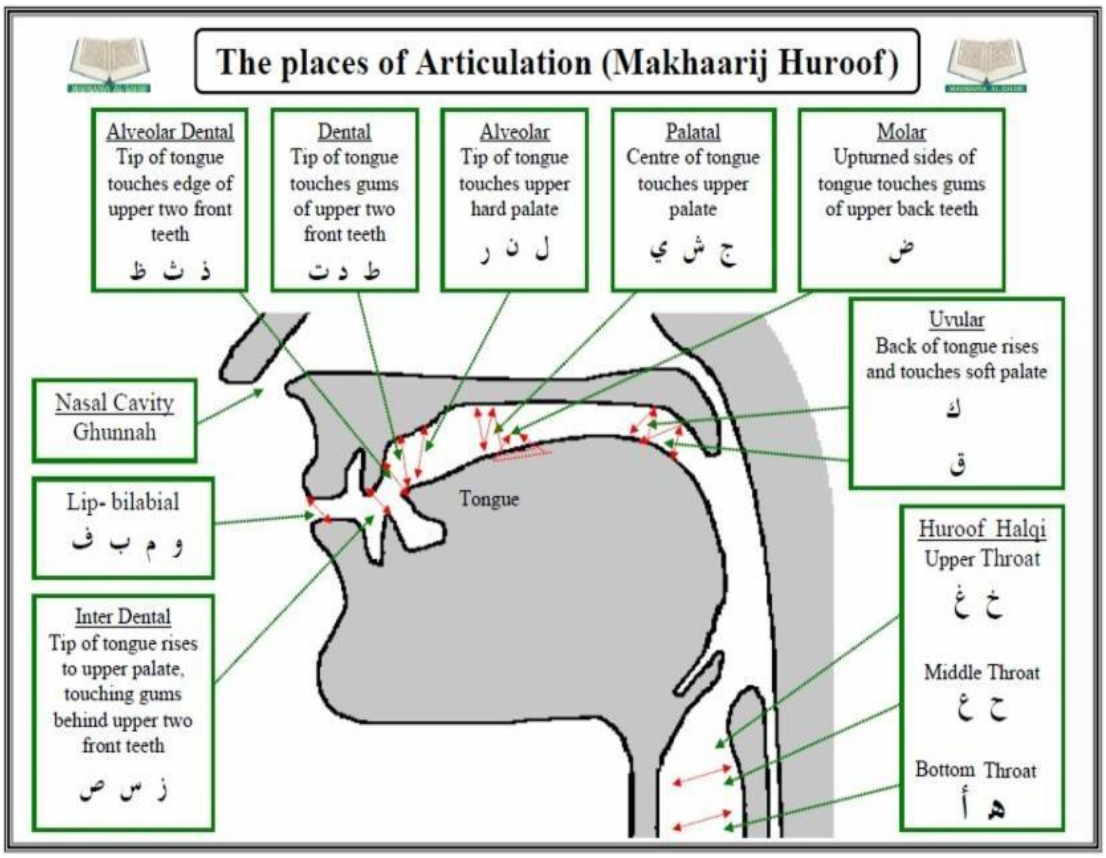

Figure 2-1 Articulation points: adopted from http://www.alzahid.co.uk/8.html

The articulation points in the throat (pharynx) are located in three positions and associated with the production of specific sounds. They are:

1. Bottom throat produce sounds of (أ- ʔ the glottal stop and h- هـ)
2. Medial throat to produce sounds of (ع- ʕ and ح- ħ)
3. Upper throat produce sounds of (غ-ɣ and خ-x).

Pronunciation of desired Arabic sounds is achieved by using the tongue associated with the correct oral positions of the tongue in the mouth. They are:

1. Final position of the tongue near the pharynx to produce sound (ق-q)
2. Final position of the tongue near the mouth to produce sound (ك-k)
3. Medial position of the tongue to produce sounds (ج- dʒ; ش-ʃ and ي- j)
4. Dorsum (the back part of the tongue) with alveolar ridge (teeth ridge) to produce sounds such as(ت-t; ط- tˤ and د-d)
5. Dorsum with the upper teeth tips to produce the sound (ث-θ; ذ-ð; ظ-ðˤ)
6. Blade of the tongue with the alveolar ridge to produce a sound (ن-n)
7. Blade of the tongue with the alveolar ridge near the dorsum to produce sounds (ز-z/ ص-sˤ and س-s)
8. Point of the tongue with the alveolar ridge near the dorsum to produce the sound (ر-r)
9. Sides of the tongue pressed firmly against the side of the upper molars to produce a sound (ض-dˤ)
10. Frontal tongue side pressed firmly against the side of upper teeth to produce the sound (ل-l).

The third group of articulation points are associated with the placement of the lower and the upper lip. They are:

1. Two lips are brought firmly together as in (ب-b and م-m) or the two lips are not brought together and are separated as in producing the sound (و-w)

2. Lower lip is pressed firmly against the points of the upper teeth to produce the sound (ف-f)

3. Asopharynx produces both the sounds (ن-n and م-m).

The importance to students of Arabic understanding and emulating correct points of articulation were appreciated by Elliott (1995) who found that language exposure without photographical instruction produced little improvement in pronunciation.

This section established the context of the single pronunciation class within a much larger language teaching program and outlined why that subject's greatest challenge is specific difficult to pronounce Arabic consonant sounds. The following section concludes the chapter.

2.5 Conclusion

In this chapter the contextual background was provided in which this research was undertaken. In order to understand why accurate pronunciation is important to more than just this course, but to Muslims generally, the background of the Kingdom of Saudi Arabia has been provided, as well as the continuing role of classical Arabic and the objectives of the Institute to train non-natives in Arabic pronunciation excellence. The challenges for non-native speakers centres on similar sounding consonants, which were explained, together with an elaboration of the points of articulation, which if mastered by speakers typically corrects mispronunciation. Understanding the history of Saudi Arabia and the role the Institute plays as a religious institution provides a grounding for the justifications to improve the quality of learning through technology within a constructivist pedagogy, which is at the heart of this study.

The chapter further summarised the Arabic language and its historic and contemporary importance as the official language of a substantial number of countries and its prestige as the language of Islam. The differences between colloquial and literary Arabic were explained together with classical Arabic's relationship to contemporary Arabic. The continuing importance of *Tajweed* was described. This provided useful background information which placed the Institute's course in one context. In another context the Institute's status as a tertiary establishment was described by summarising Saudi Arabia's recent history and the country's educational policy which incorporates its mission to preserve and promote Islamic knowledge. This is where the Institute's Diploma of Arabic Language course fits into the Kingdom of Saudi Arabia's educational paradigm. The course curriculum was outlined and the specific role of the pronunciation class was further described.

The problems that non-native Arabic speakers encounter when learning Arabic were introduced by describing the difficult consonant sounds which a majority of learners find problematic. Understanding that emulating the correct points of articulation can lead to correct pronunciation demonstrates the importance of this knowledge. Understanding the importance of Arabic from an Islamic viewpoint together with Saudi Arabia's desire to promote the language of Islam to non-Arab believers is important in comprehending why pronunciation skills are so important. Absorbing the thesis's contextand acknowledging parts of the course's pedagogy are open to change is important to comprehend this study. As this study sought to maximise student learning outcomes from their small number of pronunciation classes it is important to have a clear understanding of the role of the pronunciation class within the greater context of the diploma.

Chapter 3:
Literature Review

3.1 Introduction

This literature review aims to provide background information pertinent to language learning and teaching methods involving technology in education, with particular emphasis on second language acquisition. Second language acquisition differs from language to language but the learning process typically follows similar characteristics or learning objectives. The purpose of evaluating available research is to determine which theoretical framework or processes complement the pedagogical reforms proposed in this thesis as they pertain to teaching Arabic pronunciation while determining corresponding curricula modifications which may become necessary as a consequence.

The chapter begins with consideration of the theoretical frameworks that will underpin the study. As the Institute's pedagogy is a traditional behaviourist one, ill-suited to technology-based training, alternative theoretical approaches conducive to fostering the desired constructivist environment will be reviewed. First to be considered is Foucault (1972, 1977, 1987) and his concepts of power and control in education in relation to how the replacement of teacher-centred learning with student-centred learning redefines classroom dynamics. Foucault's views on how and why power is exerted through institutional structures, including educational, is discussed. The second is Bernstein's (1971, 1975) concepts of classification and framing in relation to curriculum design and pedagogy. The chapter then examines pedagogical approaches to second language acquisition identifying the two approaches of

behaviourist as teacher-centred and constructivist as student-centred, with the role of technology considered in each.

The chapter also discusses a number of studies relating to the pedagogy of English language learning whose findings are transferable to learning Arabic as a second language with particular emphasis on teaching Arabic pronunciation as a study component. It will also address the role technology plays in teaching and learning including its ability to increase engagement in learning. In the final section, the chapter addresses challenges to the adoption of constructivist approaches to technology-enhanced learning.

3.2 Foucault: Concepts of power and control in education

This section examines Foucault's theory of power with particular reference to how it exists within educational institutions and more precisely how it is exercised at the Institute. Foucault's theories have been widely recognised in the field of educational management, and have remained relatively unchanged over the decades compared to other more controversial theories or approaches (Pitsoe & Letseka, 2013), despite some controversy over their true value and accuracy (Butin, 2006; Pitsoe & Letseka, 2013; Wang, 2011). To summarise, Foucault's views on issues of truth, knowledge and discourse focus on social and cultural practices that affect individuals' relations with each other.

Within social settings, Foucault's discourse theory is concerned with issues of power relations, effects and domination. It shows a shift from critical traditions to focus on knowledge as a material element in social life (Pitsoe & Letseka, 2013). In the modern state, Foucault sees power and control existing in fundamental power

structures and institutions instead of in sovereign authority. In keeping with Foucault, Dreyfus and Rabinow (1983) describe how distinguishing forms of knowledge and meaning determine the power that exists in all social relations, including institutions and in discourse.

While multi-dimensional, in the study of language, the term 'discourse'is often referred to as the patterns of speech and usage of language, dialects and acceptable statements among a group of people who live in their own communities with certain ideas in common, and who share similar speech conventions (Pitsoe & Letseka, 2013). Generally speaking, the concept 'discourse' refers to written or verbal communication, conversation or information (Pitsoe & Letseka, 2013). Foucault (1978) states that the discourse of knowledge and power have intrinsic and extrinsic links that are inevitably connected. Therefore, we must view discourse as multiple segments that do not necessarily have logical functions.

Foucault's notion of discourse views knowledge and power as socially interrelated constructs. This has significant relevance for schools in general and specifically for students' learning. His model in particular deals with a philosophical approach that provides schools, teachers and students with an ethically suitable method of dealing with the students' education (Besley, 2005). It can serve as an analytical instrument to attain improved understanding of classroom management, or understand how a type of order or institutional equilibrium is established which perpetuates its own domination (Pitsoe & Letseka, 2013). Because power structures exist in all hierarchical situations within institutions, the Institute will undergo a rebalancing of its power bases, from teacher to students, resulting from the changed pedagogy that greater use of technology necessitates. Currently teachers hold all the power as they

are the source of authority concerning pronunciation while some of their power will shift to the student with the use of technology.

Gee (2014) mentions there is two type of discourse 'big D discourse' and 'little d discourse'. Gee interprets D/discourse as large and everyday discursive interaction with the world through communication patterns in agreement with feelings, body language, non-linguistic emblems, fashion, technology and non-verbal expressions which convey attitudes. d/discourse relates to expression through the use of grammatical and language patterns such as greetings, questions and interaction during conversation (Gee, 2014). In behaviourist teaching situations, student engagement is limited to receptors of knowledge from their teachers, while in constructivist environments discourse is more two way.

As a social construct, discourse is shaped and perpetuated by those who are in control of others, and have the power and means of communication. For example, those who are in control of others decide who they are by deciding what they discuss. For Foucault (1977) all discourse acts in this way and it is in discourse that truth, morality and meaning are created. For example, within the education arena, certain schools may exercise no flexibility regarding curriculum and the learning content delivered is restricted to senior managers at the top level of management with these executives using their power to control schools. Graves (2008, as cited in Richards, 2013, p. 15) states:

> In curriculum enactment, what happens in classrooms is the core of curriculum. What happens in classrooms is the evolving relationship between teacher, learners and subject matter.

Foucault (1972) argues that discourses are all about what can be said, thought and done, who can speak, when, and with what level of authority. They incorporate

meaning and social interactions and embody both subjectivity and power relations; they are practices that systematically shape the objects of which they speak. Discourses are neither about objects nor identify them but rather they constitute objects and during this course disguise their own invention (Foucault, 1972).

Foucault (1977) argues that the study of power should be directed towards the way it is applied in different institutional settings. Power in his view, should be understood with reference to central authority or intention, and the way it actually affects individuals, as it is circulated and exercised through networks. He discloses the way power relations are linked to specific forms and means of knowledge production (Jessop, 2007; Foucault, 1972, 1977, 1987).

Pedagogy is intertwined with obligation and assumptions regarding pre-existing knowledge, legitimacy or achievement (Foucault, 1987; Moss, 2002; Deacon, 2006).Foucault characteristically sees power, which derives from pedagogy, in terms of dominance and surveillance, and yet power relations tend to be reciprocal within a school environment, and the teacher may feel the power of the regard (gaze) of administrators and students alike. In the Institute, the teachers have power as models for correct pronunciation as well as the power to assess student performance. However, personal access to technology gives a degree of power to the students who utilise it, as it permits them an amount of learning autonomy. The Institute's hierarchy also exerts power over its teachers through a variety of means including being their employer and setting the curriculum and syllabus that teachers are required to implement. The performance of students in many cases can be a reflection of the teacher's performance which can potentially have an effect in mitigating or strengthening the Institute's power over teachers. Where students excel, the teacher can claim credit which

strengthens their position, while if their students under-perform, this can reflect badly on the teacher so weakening the teacher's position. In the absence of technology, students are essentially subject to teachers' power; however the possibility for independent learning that technology enables can increase student power while acknowledging teachers' planning for their learning. Current behaviourist conditions at the Institute do not provide much scope for growth in student power.

According to Weedon (1997) discourses, which include both written and spoken forms, exist in the social practices of everyday life. They are inherent in the very physical layout of social entities including schools. For Foucault, power relations are largely reproduced and transformed through language, based on the politics of truth that each society accepts.

Discourses are also defined by the range of acceptable ideas which can and cannot be discussed. By setting exclusions and inclusions of acceptable topics of discussion, those with power are able to potentially limit challenges to their power, by preventing consideration or discussion of themes which may undermine their positions. However, the perimeters of acceptable discussion may widen or contract creating discontinuity. Foucault applies principles of 'discontinuity' to indicate that some discourses would be continuous over time, since knowledge is built gradually and then society would progressively establish the truth, but there would be overlaps, interruptions and discontinuities if there was any shift during this time. While some scholars share similar beliefs to Foucault concerning 'power is knowledge', it can also be a point of resistance as Pitsoe and Letseka (2013, p. 24) note:

> We must make allowance for the complex and unstable powers whereby discourse can be both an instrument and an effect of power, but also a hindrance, a stumbling block, a point of resistance and a starting point for an opposing strategy.

The concept of regulating discourse as a form of control implies that power and knowledge are two aspects of a single process where knowledge does not reflect power relations but is associated with it, meaning that they do not exist independently of each other. Yet, for post-structuralists power is a form of control and hegemony, where the oppressed class literally permits the oppressors to oppress them. Much of this control occurs through social practices and beliefs which neither the oppressors nor the oppressed are aware of, hence the need for increasing the public's awareness as a prerequisite for them to experience true freedom (Pitsoe & Letseka, 2013).

Oppressed people are oppressed not only by being denied access to certain knowledge, but also because of the demands of society's dominant group that the 'other'shed their socio-cultural differences and voices to become just one of society's members. Educators seek to determine patterns and distribution of power which shape the ways society communicates and transmits knowledge deemed relevant for general consumption. Education itself can be an instrument for perpetuating the status quo and containing social conflict. Each educational system can be used to maintain or amend discourses together with its accompanying knowledge and powers (Foucault, 1972). Consequently discourse by shaping and controlling subjects determines what issues become constructed. It is both a technique for domination and an instrument and effect of power, serving as a tool to socially construct reality (Pitsoe & Letseka, 2013). In the Institute's situations many pedagogical ideas are now acceptable for discussion as the university is now willing to accept them. In previous decades the prevailing behaviourist approaches went unchallenged. However, the advent of technology has brought into focus the need for pedagogical reform, with discussion on this theme now acceptable. Until the Institute's administration opened itself up to contemplation of

alternatives to behaviourist practices, dissatisfied teachers were denied an outlet to express an interest in redesigning curriculum or changing their pedagogy.

The Institute's administration had complete power over the teachers, the pedagogical discourse and curriculum. Moss (2002) however points out that Foucault's understanding of power is bilateral where related causal forces all operate in a network that they structure options for action by individuals/actors. Institutional hierarchical structuring, as interpreted by Moss from Foucault can be either favourable or unfavourable. Teachers structuring student learning can be beneficial, while in cases such as through rote learning it can stifle and suppress student critical judgment, so therefore have a negative effect.

However, a number of scholars view Foucault's concepts of power and control in relation to educational theory as rather narrow, with little meaningful connection between Foucault and education. Butin (2006) for example, argues that Foucault's concept of power and discourse has been viewed as either liberating individuals from, or entrapping individuals within social structures and oppressive schooling practices. Such a contrast between liberation and entrapment misses the point that Foucault emphasises; it is exactly the dualistic view that Foucault intended to oppose (Wang, 2011). Other researchers employing Foucault's ideas relating to education have attempted to justify the revealer-established form of power/knowledge (Ball, 2006; Olssen, 2006), even though he intended to disclose the dynamic nature of power and knowledge (Wang, 2011). Because implementation of Foucault's theories produces a classroom shift in power to students, his concepts can potentially point to consequences that may produce change in learning outcomes.

It would appear that each researcher has reworked Foucault in ways that at times favour them or misinterpret his theories, giving rise to marginalisation of his conceptualisation of 'power'that surrounds educational management practices, particularly with regard to classroom management. Classroom management in the current study is viewed as an interconnected set of theoretical ideas, teaching strategies, techniques and resources employed for the development and maintenance of class cohesion or 'institutional equilibrium'(Pitsoe & Letseka, 2013).

The Institute's position is ideologically to perpetuate the status quo. The Institute, whose objectives are essentially religious, is largely dedicated to upholding the spiritual status quo; however embracing contemporary pedagogical trends, such as those outlined in this thesis, will not necessarily undermine the religious objectives of the institution.

This section has given an overview of Foucault's theories as they apply to power structures in the classroom and looked at its implications for pedagogy. The following section will look at Bernstein's theories into the framing and classification of knowledge as it relates to the teaching environment.

3.3 Bernstein's theory: Classification and framing

While the previous section discussed Foucault's theories as they applied to education establishing the balance of power in classrooms between teachers and learners with his preference for maximum power delegation from teachers to students, this section explores Bernstein's theories on how learning is influenced by the strength of the framing and classification of knowledge.

Singh (2002) affirms Basil Bernstein as one of the seminal theorists shaping the sociology of knowledge of our time, whose ideas continue to influence thinking and practice today. Nevertheless Bernstein's theoretical models were not universally accepted and many regarded his writing as incomprehensible with little usable application in the real world of schooling. Nevertheless, Bernstein paid particular attention to the conditions that surrounded students in their learning process.

Of particular relevance to the current study are Bernstein's (1975) significant contributions to pedagogy which are guided by his views that weaker classification of knowledge and weaker framing of pedagogy are preferable to stronger classification taught in a stronger framed learning environment. In this context classification relates to the arrangement of knowledge into curriculum subjects, while framing describes transmission of knowledge via pedagogic practices.

According to Bernstein (2003) weak framing implies that there are more options to the students during learning while strong framing means less options. He describes framing as:

> … the degree of control teacher and pupil possess over the selection, organization, pacing and timing of the knowledge transmitted and received in the pedagogical relationship (p. 80).

Classification is defined as "the degree of boundary maintenance between contents" (p.80). Cause (2010) argued that classification not only includes the degree of boundary but it may also indicate some aspects such as educational environment and relation, or even include the evolution of the teaching method. Bernstein (1971) theorised that value exists in the way knowledge and problems are constructed and this is best achieved where learning is not straight jacketed by the rigidity of strong classification taught with strong framing.

Bernstein (2003) argued that strong framing reduce the power of students over their learning and increase teacher's power, thereby the successful learning depends on reducing the power of teacher and gives control to students. McLean and Abbas (2009) found that there was strong framing between teachers and students in the higher status universities in the United Kingdom while in the lower status universities there existed closer relations between teachers and students.

According to Sadovnik (1991) Bernstein outlined two different kinds of curriculum codes: i) collection, and ii) integrated. The collection code relates to distinctly delineated segregated subject classifications while an integrated code applies to weaker classification where subject boundaries are permitted to overlap so consequently are less rigidly delineated. For example, Yalcinkay et al.'s (2009) study found that writing cannot commence without some comprehension of the language's aural structure found by listening to speech. His study suggests that the boundaries between curriculum influence the construction of knowledge for students because integration of the curriculum was more important than content per se which aligns to a weaker classification of knowledge (Bernstein, 1971). As a result Bernstein draws attention to the active process curriculum plays in learning.

Bernstein (1971) sees a relationship between building knowledge in curriculum and the way it is transferred to students through prevailing power relations. He conceptualised an integrated curricula where boundaries between content areas were elastic and overlapped. Rather than content of categories being paramount, he believed the relationship connecting disciplines and categories is interconnected and mutually benefiting. He also visualised a demarcation between what he described as horizontal knowledge, consisting of personal general knowledge, and vertical knowledge which

includes formal training through academic disciplines. For students to construct knowledge and appreciate it, training must be relevant to their existing knowledge base and there must be interplay between both horizontal and vertical knowledge. To ensure this, Bernstein regards it as obligatory for students to possess a degree of control over choice, organisation and access to content (Cullen et al., 2012). Referring to Bernstein (2000), Young (2008) sees an ideal integrated curriculum as crossing boundaries between school and workplace as well as between disciplines, and connecting encapsulated versions of the past with projected futures.

Bernstein believed classification and framing were the symbolic mechanisms both linking and existing within categories of discourse, agents and locations within the classroom setting. The creation, legitimisation and reproduction of symbolic boundaries results from power relations between various groups of students and teachers within various categories of instruction (Singh, 1997). Structuring curriculum knowledge inevitably leads to the emergence of a dominant group who exerts control over curriculum structure; an issue Singh (1997) believes Bernstein has addressed. Singh (1997) promotes participation in the construction of curriculum, maintenance and change of schooling procedures in terms of pedagogic communication by including stakeholders such as parents and future employers, because they have a direct interest in the quality of educational outcomes.

In relation to the Saudi Arabian government's educational priorities, Bishr and Alzahrani (2004) referred to the issue of building an integrated curriculum to achieve the aims of: i) integration in the curriculum elements and linking it to everyday life, ii) integration of subjects across grade levels and iii) linking information with technical and practical life. Similarly Khan and Law (2015) noted that curriculum design is vital

in delivering IT knowledge and skill. Applying technology across the curriculum might inevitably lead to a breakdown in the currently segregated framework, as technology gives learners sufficient independence to 'roam' around the curriculum or even stray outside subject boundaries.

The Institute's current pedagogy deploys strong framing. As a result it can be regarded as closer to behaviourist theories than constructivist. Bernstein's relevance to the research is because his theories can assist to evaluate current pedagogy as well as evaluate changes to teaching implemented using technology in a constructivist learning environment. Many characteristics of technology-aided learning contradict behaviourist methodologies largely because computer-aided learning gives greater learning autonomy to students. Indeed it is theoretically possible for students to learn without much involvement from teachers at all. As such a complementing pedagogical theory may be required to match the use of technology and just such a suitable candidate for this theoretical basis may be present in Bernstein.

In relation to the Institute's current curriculum, Bernstein would consider it to represent strong classification with distinct boundaries between subjects reinforced by teachers' control of the content and its delivery. Because of the nature of the curriculum and the manner of its delivery, according to Foucault (1977) power can be regarded as residing with teachers.

In order to achieve the Institute's goal of developing advanced language learning within the allocated time, this suggests coordination of the Institute's departments through an integrated curriculum designed to optimise students' capacity to learn. An essential component of this type of optimisation is student assessment procedures which can determine their learning potential.

Discussing Foucault and Bernstein puts into theoretical context the roles of students and teachers in both pedagogical approaches and the associated curriculum. In the next section pedagogical considerations to second language acquisition will be discussed in relation to behaviourist and constructivist approaches with links made to the theoretical frameworks of Foucault and Bernstein.

3.4 Pedagogical approaches to second language acquisition

Various pedagogical approaches have emerged over the years to study and analyse the process of language acquisition. These pedagogical approaches do help to improve our understanding of the acquisition of a second or foreign language. However, not many teachers are aware of these approaches (Cavalier & Klein, 1998). The reasons why may be due to a lack of knowledge about theories especially within educational environments that do not promote investigating the benefits or values of theories.

The section will describe pedagogical approaches that have been employed in the acquisition of a second language beginning with the behaviourist approach considered to be an 'old' or 'traditional' approach. This section presents two types of behaviourist methods in teaching a second language: the direct method and audio-lingual method. The latter part of the section will discuss the more 'recent' constructivist pedagogical approach to language learning drawing upon the examples of communicative language teaching (CLT) and collaborative learning.

3.4.1 Behaviourist approach

The behaviourist pedagogical approach is based on the stimulus and response theory of Skinner (Galasso, 1999, p. 2) and was developed to aid language acquisition. It played a significant role in second language learning during the 1940s and 1950s. Under this

paradigm the learner is conditioned to respond based on a stimulus (Hung, 2001). A behaviourist approach believes that knowledge exists outside of students and independently of them (Scheurman, 1998), and that the main aim for the teacher is delivering knowledge to students (Figure 3.1). In relation to pronunciation teaching, a behaviourist approach can be described as − the teacher talks, the students listen and then they pronounce what the teacher uttered.

Figure 3-1 The role of the teacher in the behaviourist classroom

Galasso (1999, p. 2) defines behaviourism as a "study of human behaviour in observable stimulus response situations". Skinner (as citied in Lightbown & Spada, 2006, p. 10) described this process of learning as a kind of imitation through which the learner reproduces what has been heard and therefore receives 'positive reinforcement'. Such a continuous process of imitating and reproducing eventually transmits 'habits' of 'correct language use'. This method deals with the students as receptors of knowledge (Geoffrey, 1998).The most important factor with regard to this approach is the environment since it provides everything the learner needs to shape their behaviour and to impart knowledge to the students which allows them to learn the language.

When considered in relation to Foucault's (1977) source of power, because teachers at the Institute are the active participants in the process, their students remain essentially passive. The prevailing behaviourist approach consequently vests power in the hands of the Institute's teachers. Student outcomes are therefore dependent upon

the teacher's ability, skill, knowledge and personality (Hashim, Alam & Yusoff, 2014; Zhang & Watkins, 2007). Moreover when viewed from Bernstein's (1971) concepts of classification and framing, behaviourist approaches more generally display rigidity and can be regarded as highly segregated, exemplifying strong classification and are taught in the context of strong framing.

Imitation is the process of repeating what the teacher says or produces, either all or in parts of their utterances. Practice is a repetitive process of using a form. Lightbrown and Spada (2006) argue that behaviourism not only applies to imitating others' utterances, but rather there can be a sense of creativity on the part of learners. Over generalising structures for forming words and sentences is part of learners' creativity. For example, in English, learners come to know that the past tense of play is played by adding –ed, then they over generalise the structure to form other past tense forms of verbs; for example, 'put' becomes 'putted' in the past tense (Lightbown & Spada, 2006).

Zulhanan (2011) mentioned that the traditional method (drilling) in the classroom involves repeating and imitating the teacher as a model of pronouncing by using three types of repeating: collective repetition by the entire class, repetition in a group and individual repetition. Gilbert (1994, as cited in Kanellou, 2011, p. 16) summarised the case of the traditional method by saying "most pronunciation activities found in course books are based on a behaviorist drill-and-kill paradigm, which inevitably leads to boredom". The behaviorist drill is unlike the constructivist approach which believes that knowledge is socially constructed.

However, the value of the traditional method of drilling practice for learning has been questioned, even in the Muslim world. Günther (2006) notes that Muslim

scholars who contributed to the development of pedagogy during the Islamic Golden Age from the 8thcentury to the 13th century disliked memorisation because it made "the mind disregard distinction" (p. 372) and caused learners to merely repeat what predecessors stated without discovering for themselves or finding new conclusions. Günther (2006, p. 372) comments:

> The leading sages, masters of the art of deductive reasoning and [independent] thinking, were averse to excellence in memorization, because of [one's] dependence on it and [its rendering] the mind negligent of rational judgment, so [much so] that they said: "Memorization inhibits the intellect".[They were averse to it] because the one engaged in memorization is only an imitator, whereas deductive reasoning is that which brings the one engaged in it to calculated certainty and great confidence. The true proposition and the praiseworthy judgment is that, when [a student] learns only by memorization, this harms deductive reasoning; and when he uses only deductive reasoning, this harms learning by memorization—even if memorization has a more honorable rank than [deductive reasoning].

Concerns around education in most of the Arab world seem to be associated with the traditional method of memorisation and indoctrination pedagogy (Jokar et al., 2008). As Fang and Lin (2012, p. 888) observe the "traditional method of teaching pronunciation is not the only way to teach pronunciation", therefore alternative approaches deserve consideration. But many Arab educationalists remain attached to the traditional method and seemingly are unwilling to consider newer methods, possibly because of the religiously oriented nature of learning Arabic. However, Miliani (2012) points out that although traditional Islamic teaching involves different concepts of the role of the teacher, the adoption of Western pedagogical methodologies does not necessarily imply a confrontation with Islamic values.

The Qur'an contains numerous verses which instruct followers to use their mind and urge them to think, as did the Muslim scholars in the Islamic Golden Age (Günther 2006), which consequently reinforces that Islam does not approve of

neglecting the intellect. If these Qur'anic verses are applied to traditional teaching methods, which are behaviourist, it could be argued from a theological point of view that teacher-centred learning is unfavourable as it encourages students to passively absorb knowledge. This ought to mean, following Vygotsky's (1978) model, that the role of the teacher should be transformed to that of a facilitator of learning. In relation to Islam there is no obstacle to applying this methodology to *Tajweed*, which is the general sphere of knowledge including *naqliyat*, which is traditionally transmitted knowledge or deduced logic (including philosophy) on one hand and *aqliyat*, rational verifiable knowledge on the other.

Another concern about the behaviourist approach to teaching relates to the relationship that is established between teachers and students in the learning process when the teachers have full authority, control and power over students. In cases where a favourable relationship between teacher and student prevails, the negative effects of compulsion can be mitigated while in unfavourable relationships negative attitudes to learning may be amplified. For example, Jamieson and Thomas (1974) argued in their empirical study involving the causes and resolution of conflict situations between instructors and learners in education for three different levels (high school, undergraduate and graduate), that the use of compulsion in the classroom by teachers created negative attitudes towards learning in the classroom. Similarly, Goodboy and Bolkan (2011) in their study of teachers' use of power in the classroom found that where teachers employed coercive power students responded by excuse-making or sycophancy; however when teachers communicated using pro-social power (reward, referent and expert), students primarily responded from relational, functional and participatory motives. A cause of student sycophancy may be attempting to impress

the teacher but where the teacher's role becomes less critical to outcomes, as occurs through constructivist approaches, it may become less prevalent. Therefore, a move from behaviourist to constructivist approaches as envisioned in the current study may alter the motives for student interaction with teachers.

In the Institute, the traditional drilling practices are a form of compulsion as mentioned by Jamieson and Thomas (1974). However, the negative attitudes towards the subject they recorded are not fully evident at the Institute due perhaps to the high levels of religious aspiration students have which extends to a desire to learn.

It is noteworthy that the Islamic principles of education consider the individual differences among people as important for their education. However, the behaviourist method does not take into account the students' needs and individual differences. Thereby, it deals with all students as if they were at the same level of abilities. However, the fundamental role of a teacher is not only to deliver the content to students, it is to create a learning environment to accommodate students with varying needs and abilities.

A further concern about the use of a behaviourist approach to teaching Arabic pronunciation is that it can be regarded as a pedagogy based on teachers reacting to incorrect student pronunciation responses with spontaneously devised improvised learning solutions with little relevance to real contexts. Abdul Majid (2007, as cited in Abdullah, Abu Bakr & Bagduan, 2011, p. 75), observed that although students who studied Arabic as a second language mastered morphology and grammar well, they could not use it in their social life because of a lack of speaking ability. This could be attributed to the behaviourist approach which uses the traditional method of teaching

pronunciation through training students to pronounce the letters by imitating their teachers (Fawzan, 2011; Jameel, 2010).

As the goal of teaching oral competency is for communicative purposes rather than linguistics (Morley, 1991), students and teachers need to possess the flexibility to change learning processes and teaching methods to match student learning objectives or needs. While students should take the initiative to learn proactively, both inside and outside the classroom, teachers can also take the initiative to act as facilitators of learning when teaching Arabic pronunciation.

3.4.1.1 The direct method

The behaviourist approach has been described as an 'old' teacher-centred approach to learning of which the direct method and audio-lingual method are the most frequently employed.

The direct method is focused on learning oral skills and is regarded as a traditional pedagogical approach (Batool et al., 2015). It developed initially as a reaction to the grammar-translation approach in an attempt to integrate greater use of the target language in instruction. Also called the 'natural method', the direct method came into being from the assumption that learners should avoid using their native language and "the priority of relating meaning directly with the target language without the step of translation" (Zimmerman, 1997, p.8). In other words, the second language should be taught the same way as the first language is acquired, since it views it as the natural way humans learn language. Brown (2001, p. 21) explains this method, saying that "second language learning should be more like first language learning−lots of oral interaction, spontaneous use of the language, and no translation".

According to Jin and Cortazzi (2011), the significance of the direct method appears to be its focus on oral skills over other language skills with:

> The order of skills for development and lesson organization being listening, speaking, reading and writing, so that when learners read something they had already discussed it orally and early writing was a summary of what had been read(Jin & Cortazzi, 2011, p. 564).

As a result, material is initially presented orally through pictures and actions. Printed text is not introduced to the second language learner until as late as possible to match how first language learners sufficiently comprehend their first tongue before advancing to the written word. Therefore, learning to write and spell takes place after the printed word has been introduced into the lessons.

However, there is strong criticism of the direct method because its success is dependent on the competence of teachers, and students may therefore be deprived of a favourable opportunity to develop their language skills unless their teacher speaks with native-like proficiency (Mart, 2013). The nature of this method also limits it to initial learning stages because it lacks effectiveness when teaching language acquisition in advanced stages which require grammatical knowledge. Because of the absence of grammatical instruction in class time with the direct method, learners are compelled to discover grammatical templates organically by the way words are organised to form sentences.

Furthermore social interaction is likely to be absent using the direct method as the teacher will find it difficult in terms of class time to observe and listen to students individually. Another limitation to the direct method occurs during group repetition because the teacher will not be able to note which students are having difficulty with

their pronunciation. Time constraints will also limit the teacher's ability to listen to each student in order for them to correct their pronunciation errors.

The direct method as a behaviourist approach does not take into account differentiation of curriculum based on the individual differences among students or even integration of curriculum components. According to Bernstein's (1971) concepts the direct method employs strong framing because students are entirely dependent on their teachers for instruction and correction of mispronounced sounds. In regard to classification, instruction is narrowly concentrated on a single aspect of language acquisition. There are distinct subject matter boundaries between content areas representing strong classification and which can be regarded as an example of a collection code (Bernstein, 1971, 1975). According to Foucault's (1977) concepts of power and control the direct method places all power with the teacher, making the students passive learners. While it appears to flatten the power relations, students are constrained due to their limited knowledge of the second language, with the teacher in control and in power as a result of their knowledge of the target language.

3.4.1.2 The audio-lingual method

In common with the direct method, the audio-lingual method is an oral-based teaching approach. However, rather than prioritising vocabulary expansion through language exposure in different scenarios, which is a core of the direct method approach, the audio-lingual method stresses grammatical sentence patterns through drilling. Unlike the direct method, the audio-lingual method derives from theoretical sources originating in linguistics and psychology (Larsen, 2000).

According to Zimmerman (1997), the audio-lingual method was initiated first in the United States by American linguists during World War II. It is a continuation of

the grammar-translation method rather than an original one. In contrast to the grammar-translation method, the audio-lingual method is more concerned with the pronunciation of the language and the oral use of L2 (the target or foreign language).

Criticism of the audio-lingual method is based on the role of the learners and the lack of transferability to a range of contexts. As Richards and Rogers (2001) note there exist "very limited roles available to learners who were seen as stimulus-response mechanisms, whose learning was a direct result of repetitive practice"(p. 28). Consequently students lack any freedom to construct their own knowledge as they are essentially pronouncing according to a provided script. Moreover, the approach inhibits students from communicating in their daily life due to the disconnect between pronunciation accuracy and sentence construction (Qing-xue& Jin-fang, 2007).

Jin and Cortazzi (2011) explain the audio-lingual method as focusing more on aural-oral skills, pronunciation, and memorising dialogues to be used as form-based in everyday life:

> With an emphasis on speech, audiolingual lessons generally started with a dialogue which exemplified structures (grammatical patterns, graded and sequenced, then taught one at a time) and pronunciation, including stress and intonation. Classroom techniques centred around combinations of mimicry (imitating pronunciation and model sentences, often heard on audiotapes), memorization (of dialogues) – hence the catchphrase "mim-mem" – and drills on structures using substitution tables or through pattern practice. (Jin & Cortazzi, 2011, p. 567)

Similar to the direct method approach the audio-lingual method promotes stronger classification and stronger framing (Bernstein, 1971, 1975). Within Foucault's theories of power (1972, 1977, 1987) the audio-lingual method ascribes all power to the teacher resulting in students being passive learners, with minimal interaction between teachers and students based on students repeating words and sentences uttered by the teacher.

Teachers retain power over students due to the nature of the teacher's indispensable role providing the template of accurate speech and stating corrections (Richards & Rodgers, 2001).

3.4.2 Constructivist approach

In the previous section behaviourist approaches were considered, with reference to the two examples of direct method and audio-lingual method. They were considered in relation to Foucault's (1972, 1977, 1987) power and control and Bernstein's (1971, 1977) concepts of framing and classification and related to learning pronunciation. In this section constructivist approaches in general will be considered with specific reference to the two examples of communicative language training (CLT) and collaborative learning. They will be discussed focusing on their relevance to Arabic pronunciation training at the Institute, in comparison to traditional behaviourist approaches which are recognised as possibly limiting learning potential.

A noteworthy paradigm shift has occurred in the education field, where the fundamental concepts and philosophy regarding the nature of learning has experienced a substantial change. Commencing from the behaviourist perspective, the ways of teaching and developing the instructional methodologies have been altered from a cognitive focus towards constructivist approaches (Taber, 2011; Tobias & Duffy, 2009). Constructivist approaches are recognised as a prominent pedagogic theory of the late 20th century; however they are not a new conception, with foundations in Piaget, Vygotsky, Dewey's reformist teachers, and Bruner's discovery learning (Woolfolk, 2001). Viewed from a Bernsteinian (1971, 1975) perspective, it could be argued that constructivist approaches realise their maximum potential through weaker framing and weaker classification. They promote pedagogies where power (Foucault,

1972, 1977, 1987) is delegated by teachers to students to a greater degree because the students are more active in the learning process.

From a pedagogical perspective, constructivism places an emphasis on knowledge creation through the interactions between learners and teachers. As Applefield, Huber and Moallem (2001, p. 7) state constructivism:

> … views the origin of knowledge construction as being the social intersection of people, interactions that involve sharing, comparing and debating among learners and mentors.

Through the creation of a collaborative learning environment learner develop their own abilities while simultaneously assisting co-learners. Consequently both benefit from a mutual exchange which shifts the focus of control from teacher as the centre of learning to students as the centre of learning. This philosophy in learning creates a balance in the principle of power in the classroom between students and teachers.

Grabowski (2004) together with Cornu, Peters and Collins (2003) note the characteristic features of a constructivist classroom which include the willing participation of learners, learner-focused collaborative exercises, a democratic setting and instructors performing as learning facilitators with students constructing their own knowledge. Furthermore, other scholars list constructivist classrooms being environments where group discussion is promoted, a place where learners will be challenged by new experiences and where the requirements of individual learners is paramount (Barr, 2001; White, 2001; Wood & Warfield, 2001).

Recognising the different interpretations of a constructivist pedagogy is pertinent when applying it to the Institute or in other educational settings. According to Richardson (2003) constructivist approaches can be described as practices founded on

a theory of learning in which humans develop their own unique comprehensions of the interface between their existing knowledge and beliefs, and the new emergence of knowledge. Similarly Perkins (1991, p. 20) encapsulates the constructivist viewpoint of learning as:

> … knowledge is actively constructed by learners as they are trying to make sense of their experiences, learners form, elaborate and test candidate mental structures until a satisfactory one emerges.

However, not all interpretations are similar in regard to defining a constructivist pedagogy. Some argue that constructivist methods cannot be regarded as a theory of learning, but rather a theory of knowing that can be used to develop the theory of learning (Thompson, 2000; Brooks & Brooks, 1993; Ültanir, 2012).

Other benefits of a constructivist approach according to Altun and Büyükduman (2007) are that learners are involved in contextualising the knowledge and information to their own experiences and it is more likely to produce good results when they consider the information holds relevancy to their learning objective. It is also suggested that in general, teaching may be improved and be more successful when decisions are based on a constructivist approach (Biggs, 1996).

Constructivist learning approaches, however, make assumptions regarding how people learn. According to Jonassen (1999) constructivist principles assume students construct knowledge socially or individually according to their experiences of the world. However, learning a second language is not necessarily made easier by building on the knowledge of previous languages, which may in fact interfere with the process. For example, second language learners may have a tendency to apply grammatical rules from their first language to the second language (Bada, 2001). Consequently

constructing learning from building blocks of knowledge gained elsewhere may actually not be helpful, but restrictive.

In the constructivist classroom, power is used differently to that of a behaviourist classroom. Teachers use indirect methods of control which empower students through involvement, delegating responsibility and through promoting self-control and engagement. Salazar (2008) argues that social constructivist approaches require free interaction between instructors and learners and also between learners themselves to produce maximum learning outcomes. However, the degree of teacher delegation of power to students must not be at a level which sees classroom productivity decline if it slips out of control (Gray, 1995).

Vygotsky (1978) proposed that human learning can be comprehended within the context of its cultural and social environment. He believed learning is a socio-cultural process where knowledge is constructed within a language framework. Can (2009) also proposed that language plays an important role in learning as it enables the contemplation of different aspects of a given topic and serves as a reasoning tool through which the world is understood. From this perspective the role of teachers is primarily encouraging leaders guiding students towards continually attaining more knowledge, abilities and self-regulating their capabilities (Liu & Matthews, 2005). Teachers act primarily as guides or facilitators providing assistance to learners (Vygotsky, 1978).

Teachers essentially assist in directing students in their learning but make a significant contribution by promoting the development of cultural and language skills in their students. Applying Vygotsky's ideas that learning is made in the cultural context prevailing in the L2 classroom, this may guide teachers in helping them to

prompt students with clues or hints aimed at problem solving, or in the way teachers praise students or offer suggestions. This learning strategy involves providing students with what is needed to advance their learning at that given moment. As the learner requires assistance, teachers provide 'scaffolding' to enable them to continue developing as the learning process may become more complex (Oxford, 1997).

In a social constructivist approach students are engaged in the classroom which encourages them to create their own learning settings instead of teacher-directed learning (Yang & Wilson, 2006). The heart of the constructivist classroom is the student's control over their learning. Mvududu and Thiel-Burgess (2012) highlight the role that constructivist classrooms play in teaching English through dialogue-making or conversation between the learners which can also provide great assistance in language acquisition, understanding, and reproduction which a constructivist classroom facilitates.

The application of a social constructivist approach can also be applied for teaching a second language due to the nature of the learning requirements involved (Iglesias Xamaní, 2013; Fenstermacher & Richardson, 2005; Salazar, 2008). Incorporation of the constructivist approach in a second language classroom can provide a number of benefits for language learners (Jin, 2011; Iglesias Xamaní, 2013). The approach releases the students to explore new knowledge and learning from their own perspective "[f]reeing, especially, the language learners from rigid and restrictive rules of grammar and classrooms" (Can, 2009, p. 65). For new language learners, it is important for teachers to know about their current knowledge regarding the new language and then to tailor their teaching, adapting it to the learner's requirements,

which are facilitated in a constructivist approach because it is learner-centred (Tobias & Duffy, 2009).

Numerous empirical studies are broadly supportive of constructivist pedagogies, particularly in settings not dissimilar to those prevailing at the Institute. Hussain (2012), for example, introduced constructivist approaches to his classes over three-year duration for one subject at a Pakistani university. He reported that students:

> … enjoyed working on collaborative and cooperative projects and tasks. They were keen on constructing knowledge by involving themselves in activities and showing their readiness to embrace constructivist approach (p. 183).

Additionally he reported the approach developed their "spirit" which helped overcome shyness and introversion. Students also displayed increased independence and initiative.

Furthermore Tsao (2006) who researched university undergraduate statistics students' attitudes to statistics over one semester at a Taiwanese university using constructivist approaches, found that students displayed positive attitudes towards the course content, because they enjoyed the constructivist learning environment. She inferred that because students enjoyed the classroom environment, they enjoyed the subject matter. Maor's (1999) study was similarly supportive of a constructivist pedagogy amongst secondary school science students and found that teachers who acted in a constructivist environment through teachers' and students' interactions had greater opportunities to bring about successful implementation of new ideas in the classroom.

Curriculum design modelled on the constructivist view differs considerably from one using traditional methods which assume the existence of a single approach to

learning (Cullen et al., 2012). Weak classification of curriculum as discussed by Bernstein (1971) is meant to make the teaching and learning activities meaningful. Many Arabic educational organisations from primary schools through to tertiary institutions find it hard to change their existing curriculum or develop a new integrated curriculum mainly because of lack of will, infrastructure and understanding about the process of change (Malik & Malik, 2011).

Positive attitudes to learning and course content can also be achieved through the use of technology in designing a constructivist learning environment (Ford & Lott, 2015; Jonassen et al., 1995; Jonassen, Howland, Moore & Marra, 2003; Jonassen, Carr & Yueh, 1998) while smoothing the significant shift from teacher-centred to student-centred learning situations. Employing a constructivist approach, Juniu (2006) integrated technology in debate activities for students in health and physical education. The study concluded that the use of technology enhanced students' engagement. The students were able to construct their own knowledge through class debates. Sharma and Chawla (2014) comment that technology as a tool supports the constructivist classroom because it involves multiple applications as well as supports students' thinking, and is grounded in perceptions of physical and social experiences. In constructivist classroom settings, teachers seek to create environments which facilitate learning. In the Arabic pronunciation class context this can be achieved with the aid of technology. In the next two sub-sections the constructivist approaches of CLT and collaborative learning will be considered. After this section, the pedagogy of teaching Arabic pronunciation and Arabic language curriculum design will be discussed.

3.4.2.1 Communicative language teaching (CLT)

Communicative language teaching emerged as a reaction to the perceived shortcomings of the audio-lingual method (Alharbi, 2012). According to Richards and Rodgers (2001, p. 21), CLT:

> … emphasizes the semantic and communicative dimension rather than merely the grammatical characteristics of language, and leads to a specification and organization of language teaching content by categories of meaning and function rather than by elements of structure and grammar.

As a method CLT represents "structures plus notions and functions" (Kumaravadivelu, 2003, p. 26). Zimmerman (1997) supports Kumaravadivelu's viewpoint stating:

> … communicative competence incorporates linguistic competence in the sense of linguistic creativity and that language learning is quite different from the previously held model of habit formation (p. 12).

In CLT learners need to use the target language forms, meanings and functions in discussing meanings (Richards & Rodgers, 2001). Foreign language teaching is concerned with actual communication as practised in real life as it takes place outside and inside the classroom. The CLT learning environment therefore best supports learners with opportunities to express themselves using the target language. In so doing, students are able to use the correct pronunciation appropriately in other social contexts. However, contrary to the direct method, teachers and students are not discouraged from using their first language in the course of teaching. For example, a student may ask the meaning of a term in their first language and the teacher may respond in the same language.

According to Littlewood (2011) there must be a plan to relate function to the linguistic structure of a given sentence. In other words, it is not only necessary to teach how to structure a sentence like "the door is open", but also to teach how to use or

apply such a sentence in an appropriate context. In line with Littlewood, Mhundwa (1998) and Lyu (2006) suggest that through using the CLT method, classroom communication is set to reflect or simulate real life situations. According to Nunam (1991, p. 279) the communicative approach encompasses five common characteristics:

(i) an emphasis on learning to communicate through interaction in the target language

(ii) the introduction of authentic texts into the learning situation

(iii) the provision of opportunities for learners to focus not only on language, but also on the learning process itself

(iv) an enhancement of the learner's own personal experiences as important contributing elements to classroom learning

(v) an attempt to link classroom language learning with language activation outside the classroom.

CLT results in learners engaging in class activities which are cooperative in nature instead of individualistic. Students listen to co-learners in group tasks or in pairs instead of referring to teachers as their only model. At the same time teachers see their roles change to primarily becoming a facilitator and monitor of their students. Under this model teachers go from being the authority on accurate speech and writing to being primarily responsible for ensuring students pronounce their own sentences free from error. This requires teachers to accept that their function has changed to one of language learning facilitator (Richards, 2006).

Although CLT claims to emphasise student-centred teaching processes and more communication is promoted, a number of issues have been identified. First CLT can overemphasise the role of language by stressing the importance of function and meaning while largely ignoring grammar within the language structure. Alharbi (2012) and Hampl (2011) criticise CLT as shifting emphasis from form to meaning while

claiming it focuses on fluency rather than accuracy. Secondly, CLT effectively has no solution to the lack of grammar (Yuan, 2011). In addition, CLT has been criticised by students who are unable to comprehend grammar intuitively as the approach assumes will occur (Musa, 2008). Furthermore significant numbers of language teachers either have no faith in CLT or lack the language skills to enable them to employ it effectively (Musa, 2008).

Despite CLT possessing constructivist aspects such as the teacher as facilitator and monitor of student learning, the approach has not been shown to be able to replace the didactic role of the teacher. Opponents of CLT such as Lightbown and Spada (1999, cited in Hampl, 2011) argue that "allowing learners too much 'freedom' without correction and explicit instruction will lead to early fossilisation of errors" (p.15). Their view is that it is best to get things right from the beginning. In a collaborative learning inspired CLT classroom, if students are to listen to their classmates in groups or pairs rather than listening to the teacher as their only model, it is uncertain whether there will be learning of correct pronunciation, or whether wrong pronunciation will subsequently need to be unlearned.

While CLT has its critics it can also be implemented utilising weaker or stronger framing (Bernstein, 1971). Because the teacher still determines the content, CLT may possess qualities of either stronger or weaker framing depending on how it is implemented in the classroom. Additionally requiring students to follow a very restricted approach, it can be regarded as having stronger framing with teachers presumably requiring students to use the target language, while students exercise significant 'freedom of movement' concerning what they choose to study. Additionally the classification of the curriculum can be regarded as inclusive of either integrated or

segregated codes again depending on how CLT is employed in the language classroom.

Learners have considerable range open to them, as long as they stay within the L2 language. However, pertaining to Foucault's view regarding power and control, the teacher retains most power particularly when they are required to guide learners to express themselves exclusively in the L2. While learners may be expected to speak exclusively in L2 during CLT activities they may be unable to express themselves sufficiently to provide an answer to their teacher when asked a question or to ask their teacher a question.

3.4.2.2 Collaborative learning in the constructivist classroom

This section addresses the second example of a constructivist approach, that into collaborative learning in classrooms practising constructivist principles. Language classes involve considerable interaction between students, which gives them a significant humanistic element not necessarily present in classes for other subjects. However, maximising learning outcomes resulting from classroom intercultural collaborations depends on the pedagogical architecture classes are framed on (Lawrence, 2013). Chamberlin's (2010) study of collaborative learning in ESL courses for graduate educators described how collaborative learning individualises the learning experience for students while simultaneously showing learners what they have in common. Collaborative learning provides teachers with an opportunity for them to promote multicultural exchanges amongst their class, such as those prevailing in the Institute's entirely non-Saudi Arabian and multicultural student body, while also supporting each student's individual accountability for their own learning outcome.

For successful classroom outcomes, Pallof and Pratt (2005) mention that collaborative classrooms encourage student interaction as a social path to learning. Similarly, Hussain (2012) mentioned collaborative learning enables students to build their learning in a constructive manner. Thus collaborative learning may achieve better outcomes through weakening the framing of the teacher's pedagogy (Bernstein, 1971, 1975) and shifts the teacher from central controller to a facilitator of the learning process.

Collaborative learning, according to Zhang (2010) provides more opportunities for communication because the objective of foreign language is not only to teach grammar and vocabulary, but also how to use the knowledge in practice to express thoughts and ideas. Ibrahim, Shak, Mohd, Ismail, Perumal, Zaidi and Yasin (2015) mentioned that in collaborative classrooms, the students are not only accountable for their own learning, but also help each other. Thus, according to Vygotsky (1978), students are capable of performing at higher intellectual levels when asked to work in collaborative situations than when asked to work individually (Sanders, 1995). Chen (2011) states:

> The benefits of structuring cooperative learning in an English language learning environment have far reaching effects beyond the language proficiency level. Not only are these benefits evident in short term academic achievements of ELLs, but also in their long term overall social development. (p. 31)

Pattanpichet (2011) undertook experimental research amongst undergraduate students examining the role collaborative learning interventions can play in developing student speaking performance. The research recorded improved student speaking proficiency as a result of collaborative learning practices implemented in the classroom. The study's conclusions found that collaborative learning exercises in the classroom

achieved beneficial results and enhanced students' communication skill outside the classroom.

3.4.3 Comparison of behaviourist and constructivist approaches

The previous sub-sections examined the characteristics and considerations regarding second language acquisition within behaviourist and constructivist approaches and examined a range of second language teaching pedagogies. This section summarises the differences between behaviourist and constructivist approaches.

When considering the behaviourist and constructivist approaches differences can be summarised around the focus of control of learning, role of the learner, purpose for the use of technology with the learning process, framing of pedagogical process and with whom power resides as outlined in Table 3-1.

Table 3-1 Differences between behaviourist and constructivist approaches

Theory	Focus	Role of learner	Technology usage	Framing	Power
Behaviourist	Teacher	Receptive	Chalk and talk Rote learning Repetition	Strong	With teachers
Constructivist	Students	Engaged and active	Technology Interation Problem solving	Weak	With students

The table outlines the behaviourist approach where the teacher is the focus of learner's attention with the limited use of technology in the form of chalk and board applied to rote learning and repetition which does not provide students with opportunities to exercise control over their learning. Power over the curriculum and pedagogy resides in the teacher and usually results in strong framing.

In contrast the constructivist approach views knowledge as socially constructed which makes students the focus of teaching through engaged and active participation to work through interaction and problem solving amongst themselves. Technology is used as a powerful interactive aid which allows students to independently learn within a weak framework by problem solving. As a consequence power resides with students in constructivist approaches.

There are also differences in the main concepts of behaviourist and constructivist approaches with regard to learning, types of learning, instructional strategies and key concepts. Table 3-2 contrasts the key concepts making up behaviourist and constructivist approaches. The table outlines how behaviourist learning occurs through stimulus and response while constructivist approaches employ mediation of different perspectives through language.

Table 3-2 Key concepts of dominant learning theories (adapted from Hung, 2001, p. 284)

	Behaviourist	**Constructivist**
Learning	Stimulus and response	Mediation of different perspectives through language
Type of learning	Memorising and responding	Collaborative learning and problem solving
Instructional strategies	Activities presented for practice and feedback	Activities provide scaffolds in the learning process
Key concepts	Reinforcement	Discovering different perspectives and shared meanings

Learning types differ between behaviourist and constructivist approaches as the first occurs through memorisation and responses, and the latter results from problem solving in a collaborative environment. Instructional strategies differ with behaviourist ones being activities designed for practice and feedback purposes while constructivist

approaches use them in the context of scaffolds for the learning process. Key concepts underlying behaviourist learning is through reinforcement while in constructivist approaches it results from navigating different perspectives and uncovering their meanings.

3.5 Technology in language teaching

The recognised advantages of technology in language teaching are generally not language specific but share common features across languages, including acquisition of Arabic pronunciation. While the previous section outlined and contrasted behaviourist and constructivist approaches in relation to the teaching and learning of Arabic pronunciation and explored pedagogies employed in second language acquisition, including the role of technology, this section outlines the role of technology to increase student engagement in learning. It will discuss four types of technology usage in language acquisition: computer-assisted language learning (CALL), computer-mediated communication (CMC), computer-assisted pronunciation of language (CALP) and information and communication technology (ICT), when referred to in a general sense. It will argue that technology-enhanced learning of pronunciation can increase student engagement and support a constructivist approach through sharing of power with students in the pedagogical use of weaker framing and weaker classification of the curriculum.

Technology is having a significant impact in the design and implementation of education and can be integrated in different ways in language learning environments ranging from being a communication tool to being a virtual student tutor. Gorjian et al.'s (2013) research in teaching English as a Foreign Language (EFL) in Iran

compared one pronunciation class utilising computers with a control group who were taught using a non-computer traditional approach. Their study showed that technology can be used to support behaviourist approaches as it only allowed students to repeat and imitate using software in computer-aided learning. Their research also revealed that the study group who used the software showed superior pronunciation skills compared to the control group. Similarly Elimat and AbuSeileek (2014) investigating the role of automatic speech recognition software in teaching English pronunciation to Arab students at third grade versus the traditional method found that there were statistically significant favourable outcomes in the experimental group who used technology in contrast to a second group learning unaided. In addition to improved learning outcomes, Alharbi's (2012) study on teaching Arabic grammar to non-native speakers at a higher education institute, noted that the use of the internet in teaching Arabic language was enhanced by using a blended learning approach. Alharbi's study however did not examine the role of technology in developing pronunciation skills.

Due to the differences in students' abilities, designing interventions for teaching Arabic pronunciation using technology may lead to positive outcomes for students and teachers because constructivist approaches and language acquisition can be supported by technology (Akpan, Essien & Okure, 2013). For example, Agha (2007) conducted a study on teaching Arabic linguistic utterances with Arabic high school students, where technology was used to cater for the individual differences of students, and measured their engagement. The results of her experiment showed that there were statistical differences between the average grades of students in cognitive skills and the performance of sounds which could be attributed to the technology-based program. Mahmoud, Sahrir and Osman (2013) asserted similar views from their study's findings

regarding the equalising effect of ICT usage amongst students being taught Arabic. While access to teachers by students may be limited by their availability, ICT usage is essentially independent of teachers and its fullest exploitation may be largely dependent on the student. Consequently the effect of individual learners preoccupying the teacher's time effectively denies other students equal attention, is negated by all students having equal access to learning software in class and outside formal learning environments, such as at home through the internet.

According to Aldibsi (2003) teaching Arabic in classes in Arab countries to non-Arabic adult students using traditional approaches through the use of CALL in language laboratories can facilitate benefits for students. They can practise their listening and pronunciation, and be provided with error correction, which helps the learners achieve outcomes utilising the audio-lingual approach. However, students have limited control over the content to be learned or the pace of learning. Therefore, it is important to prepare educational environments in which learners are able to adjust to learning a foreign language and feel more involved in the teaching and learning process rather than only being instructed.

Computer-mediated communication (CMC) is another means of using computers that can improve student learning outcomes. CMC can afford completely anonymous communication where participants' identities are totally concealed. They can create a low stress, low anxiety setting which enables all learners to be a part of the discussion (Arnold et al., 2009). CMC can also improve students' written and oral communication (Arnold, 2007; Handle & Corl, 1998).

Computer-assisted pronunciation language (CAPL) according to Ibrahim, Idris and Yusoff (2014) can be applied to learning the specific pronunciation rules from

Tajweed, essentially the fundamental knowledge of reading the Qur'an. CAPL would support students through the use of an audio-lingual approach.

The use of ICT in language learning refers to technology that enables the sharing of information through multimedia resources such as animations, images, audio, video and written texts. These resources can be utilised in classroom presentations and are characterised by their stimulating and interesting features (Davies & Hewer, 2012; Padurean & Margan, 2009). For example, a language laboratory with visual and video tools to identify the position of articulation as well as audio material that students can use after class for personal training can support students' learning of Arabic (Allam & Mahmud, 2004); animations can provide a bridge between practical and declarative knowledge (Hoffler & Leutner, 2007). While ICT is a general term, computer-assisted language learning (CALL) describes language learning activities that make use of computers (Alzu'bi & Sabha, 2013; Levy & Stockwell, 2006).

3.5.1 Technology in general pronunciation teaching

Accurate pronunciation comprises elements of understanding ability, accent and clarity (Levis, 2007). According to Chen (2011) oral communication ability has grown in importance at both a national and global level in many parts of the world where improved pronunciation skills are essential, particularly for employment reasons. Underlining the importance of pronunciation accuracy Tsurutani (2008) describes how several software programs have been developed to enable learners to improve their personal pronunciation skills.

The integration of technology into the teaching of a second language (Mullamaa, 2010), using a constructivist pedagogy, can be beneficial to learners.

However, technology can also be used in behaviourist approaches, such as the audio-lingual approach, where the teacher makes the decisions and directs the students' learning and develops the curriculum to be covered. This approach results in minimal power transfer from teacher to student and also necessitates negligible curriculum modification.

Several studies have been conducted to confirm the usefulness of technology in teaching and learning pronunciation for EFL. For example, Yunus et al. (2009), noted ICT's potential benefits for EFL at secondary schools by aiding students' language acquisition by enabling them to construct their knowledge through the learning conduit provided by the constructivist approach. However, the study also noted that students spent a considerable amount of time using ICT aids for entertainment purposes. While students spent 1−2 hours per week using ICT for learning purposes, much of the time they spent on computers was not educationally oriented. However, even non-educational use of technology benefited students by aiding their vocabulary expansion and pronunciation skills. The research cited this as demonstrating the value of the concept of weak classification; instead of dealing with each unit of knowledge as a single bloc, which is the case where strong classification is applied to the curriculum.

Research conducted by Neri et al. (2008) in pronunciation skills of EFL recorded short-term benefits from speech recognition computers comparable to traditional teacher-led classroom instruction. Their research highlighted that computer instruction resulted in improved pronunciation of difficult words yet students were actually experiencing difficulties with other words. Neri et al. (2002) suggested incorporating constructivist approaches in learning environments, believing this would

achieve the most favourable outcome and advocated for stress-free, relaxed classrooms compatible with those proposed in constructivist learning models.

Whereas a surprising result was produced by Ghabanchi and Anbarestani's (2008) study. Their research involving two study groups aimed at expanding vocabulary learning for EFL. The first group used a traditional method of learning the meaning of vocabulary by using book dictionaries while the second group used computers at home to find out word meanings. The result showed that the students who used computers demonstrated contextualised vocabulary learning as well as better pronunciation in comparison to the non-computer group. This finding emphasised the benefits of using technology in teaching and learning pronunciation.

Meanwhile Young's (2003) research involved the use of ICT in a Taiwanese EFL language learning class setting in high school. His study involved interviewing students and revealed that integrating ICT in the form of internet usage during the class resulted in creating a virtual environment which transformed the traditional passive learning experience into an exciting explorative one where students discovered in a more relaxed setting. Additionally one student who required remedial instruction was personally assisted through email during the course of the semester. Young's (2003) study confirmed computer-aided learning continues beyond language laboratories and indeed can theoretically occur in an institutional setting without the physical presence of teacher and student.

However, an overwhelming majority of other studies in the field of foreign language learning differs from this study in at least four aspects:

(i) Their research involved English as a foreign language, rather than Arabic.

(ii) Yunus et al. (2009) and Young (2003) involved secondary schools, Neri et al. (2008) and Ghabanchi and Anbarestani (2008) involved intermediate schools, while this study is of tertiary students.

(iii) The participants were from secondary and intermediate schools and may not have reached leaving age, while the Institute's students are highly interested scholarship recipients.

(iv) Young's (2003) study was conducted at a secular school while this study involves a religiously oriented learning institute.

Consequently this research contributes towards filling a sizeable knowledge gap by being a study into Arabic as a second language, rather than English and also involving voluntary adult tertiary students.

The justifications offered by ICT in teaching pronunciation to tertiary students has been identified as a means for providing higher education to a broader population regardless of geographical situation and culture. For instance, AbuSeileek (2007) used two groups for teaching EFL: the first group studied using computerised pronunciation programs, and the second group was taught via traditional methods. His research supports computer use in learning pronunciation showing that computerised pronunciation programs benefit their users by providing constructive feedback highlighting both errors and accurate pronunciation. Similarly, Hismanoglu and Hismanoglu (2010) examine the use of the internet in teaching pronunciation to university students. A voice recorder, CD and computers with access to the internet were used for the experimental group, while the control group used the traditional method with reliance upon teacher instruction. Although the study found that EFL students faced problems with English vowels, the students were able to use internet-based pronunciation aids to partially overcome these problems.

Research has also been conducted to the teaching and learning Arabic pronunciation using particular technology programs. Samir, Abdou, Khalil and Rashwan (2007) believed reciting the Qur'an through the HAFSS system by adopting the Hidden Markov Model would improve the students' pronunciation performance. Alsabaan and Ramsay (2014) also investigated the speech recognition tool,; Hidden Markov Model Toolkit, and included the use of animation techniques in teaching Arabic pronunciation to non-native speakers. Their study was conducted with 40 participants. Each student had a thirty minute session with the tool, working their way via a set of pronunciation exercises at their own pace. The results revealed that student pronunciation did improve over the course of the learning session.

In addition, a study conducted by Abdou, Hamid, Rashwan, Samir, Abd-Elhamid, Shahin and Nazih (2006) used a system that included various multimedia types with pre-recorded Qur'an recitations, recitation teaching text materials and teaching animations. The study's findings proved the system was useful for the automatic training of the correct recitation of the Qur'an for Arabic speakers. It not only helped students to learn how to recite the Qur'an but also helped them to correct their mistakes in formal Arabic pronunciation. Al-Busaidi, Al Hashmi, Al Musawi and Kazem (2016) investigated of the perceptions of Arabic teachers of the use of the ICT in teaching Arabic. Their findings revealed that teachers perceived the designed ICT as an effective tool to promote students' learning of Arabic.

According to Khan, Mourad, Mannan, Dahan and Abushariah (2013) research into Arabic speech processing is in its infancy and as a result there is limited research or systems found for pronunciation scoring of Arabic. Consequently this research contributes towards filling a recognised knowledge gap by being a study into Arabic as

a second language, rather than English and furthermore is a study exclusively involving voluntary adult tertiary students.

3.5.2 Technology and engagement

The previous section presented the potential advantages which technology offers to pronunciation learning. This section looks at how technology stimulates student engagement in language learning. Students regard computers favourably because they are associated with fun and games and they are contemporary (Wu Lee, 2000). The internet provides instant access to language learning materials such as academic journals, newspapers, e-books, YouTube tutorials, thus increasing engagement levels. Students increase their engagement because there is a selection of activities to pick from which gives them a sense of independence over their learning (Gumbo & Mawire, 2013).

When students were studying ESL in a higher education context, Malinina (2013) found that the role of blended learning gave rise to increased engagement and personal and professional growth while also improving their communicative culture. As a result of the application of technology there were improved learning outcomes, greater satisfaction with practising because it was more enjoyable for the learner and potentially reduces teacher workload. Similarly, Anwaruddin's (2013) action research in which he compared student behaviour during university EFL classes conducted using a CALL curriculum and non-CALL curriculum found that the use of Web 2.0 in the CALL curriculum contributed to an increase in students' engagement as well as their learning of the target language. Increased student engagement, an improvement in performance and promotion of peer cooperation were also found in Shih's (2010) study of university ESL students when he trialled a traditional method and then

technology-enhanced constructivist learning including creating, uploading and commenting through their videos in a blog.

Warschauer (1996) also found that technology enhanced student engagement in communication and writing. He identified that technology enhanced student engagement in three ways: through communication, empowerment and learning. Students appreciated their ability to communicate with others, by engaging in actual rather than contrived communication exchanges. Empowerment stemmed from students emboldened by technology to contact others while reducing any sense of isolation. Student perceptions of the learning component described computers as enabling them to learn faster while giving them more opportunities to write at their own pace creatively and independently.

Arabic language teachers, similar to their ESL teaching counterparts, are continuously searching for methods which will increase student engagement and many believe it occurs with computer usage (Klimova & Poulova, 2014). However, this is not always the case as students who already possess high levels of engagement in learning may perceive CALL work as irrelevant to their needs (Genç & Aydin, 2010). Nevertheless there remain questions about the effectiveness of computer solutions that are tailored to individualised instruction and if they increase students' engagement in learning, particularly learning Arabic pronunciation.

If the benefits of the use of technology for learning Arabic pronunciation are to be optimised, it necessitates finding ways to increase its usage. Determining the advantages of competing pedagogies and deciding whether technology-based learning improves learning outcomes in comparison to more traditional methods are important areas of research that can influence decisions about how the teaching of pronunciation

is undertaken at language institutes. However, with a view to optimising technology usage and therefore extracting maximum benefit from it, it is necessary also to consider the obstacles which may exist that restrict the adoption of technology by Arabic pronunciation teachers in language institutes and finding appropriate solutions.

This section looked at the pedagogical implications of using technology in second language teaching which are generally acknowledged as considerable. Despite a general consensus about the advantages of technology, its implementation does not come without obstacles which are the subject of the followin

3.6 Challenges

The previous section discussed in great detail the effects of using technology for language training on pedagogy. Despite the multiple approaches available to teachers and the recognised benefits of its incorporation into teaching programs its full exploitation, particularly in Arabic language instruction has not been realised. The challenges preventing technology's incorporation into learning are discussed in this section.

Despite the favourable reception by learners to new teaching methods enabled by technology usage and the identified benefits evident in student outcomes, applying technology in higher education is not an easy task. It necessitates a different type and possibly more challenging method of teaching while there are also a number of physical and human challenges, such as access and competence in use, which need to be overcome as these challenges are likely to prevent the maximum exploitation of technology in a learning environment (Almousa & Al Mubarak, 2005; Salem, 2006; Alhersh et al., 2010). This section touches on the challenges that face educational use

of technology, notably barriers in the form of academic administration departments, inadequate or non-existent staff training in the use of ICT devices and unsuitable classroom infrastructure.

Employing technology in the university environment is recognised as important to enhancing the educational process and achieving better learning outcomes. In recognition of the importance of computers, for example, Australia's federal government budgeted AUD8 billion for its 'Digital Education Revolution' which included equipping all schools with computers, and the government remains committed to supporting technology (Lane, 2012).

In comparison Saudi Arabia's government allocated an equivalent USD51 billion for education in 2015 (Ministry of Finance2016), of which an imprecise amount was earmarked for technology. Saudi Arabia's education budget implies that no financial reasons prevent greater use of computers and technology in classrooms; however researchers have experienced administrative resistance effectively preventing teachers' use of technology in education (Krieger, 2007). In relation to introducing and utilising technology in Saudi Arabian educational institutions, what is needed is supportive leadership to better understand integrating ICT into the learning process (Robertson & Al-Zahrani, 2012).

Administration departments sit at the heart of academic institutions and play a vital role in enhancing the learning environment by providing technology (Schiller, 2003; Webb, 2011). Alenezi (2015) found that the school administration was responsible for the integration of technology in teaching and learning practices because they needed to ensure that the best interests of the students were served through infrastructure and professional training for teachers. However, he also found that

"Saudi Arabian teachers do not feel they have administrative support, since this support, when it is available, is not sufficient" (p. 643).

As one analyst suggests, problems experienced in the implementation of any plan are not directly related to the availability of resources but to the intention and passion of the implementers of the project (Amoudi & Sulaymani, 2014). Mingaine (2013) in his study conducted in a secondary school found that educational leadership plays a primary role, whether positive or negative, in educational institutions with effective leadership leading to improved engagement by both students and staff. He also found that school leadership should also support the use of ICT in the schools, stating "In order to effectively perform duties of school leadership, school leader's roles should be geared in using ICT in school" (p. 33). So leadership has a role to play in the process of the successful integration and use of technology in learning. Despite a government commitment to promote technology in education, administrators who may personally not share this enthusiasm concerning technology and redesigning curriculum and pedagogy to support it can delay or stop its implementation by failing to integrate technology into education or even not purchasing the necessary technology.

Al-Otaibi (2006) takes this further by noting that the absence of administrative awareness in dealing with issues such as lack of experience in using technology, financial incentives and lack of curriculum compatibility with e-learning effectively discourages wider ICT use. He also observed that added responsibilities assigned to teachers without remuneration together with a redrafting of the curriculum cause many teachers to resist employing technology.

While Saudi Arabia's education ministry has prioritised technology usage enthusiasm for it may not be shared by the Institute's administration department which demonstrates noticeable disinterest in technology and themselves appear indifferent to its usage. However, if administration's negative attitudes were replaced by enthusiasm for technology and they led the change, rather than followed it, full exploitation of the possibilities of technology could be expected. Apart from provision of technology, professional development is also a key variable that influences teachers' use of technology in language teaching.

Professional development of teachers is at the centre of successful technology integration in education (Afshari et al., 2009). Almulhim (2014) commented that one of the obstacles that threaten the maximum use of ICT in Saudi Arabia is teacher training. Thus a lack of teaching staff capable of delivering training via e-learning and resistance by some teachers towards learning the necessary technical skills represent significant obstacles to greater technology usage (Altodari, 2004; Almulhim, 2014; Awawda, 2012). Despite the success that technology is credited with for improving learning outcomes its acceptance is still resisted by some established educators.

The third obstacle to integration of technology is the availability of funds and infrastructure to support the technology. University barriers frequently result from inadequate technology infrastructure including inappropriate buildings or classroom design, inadequate equipment, lack of servers, networks, technical assistance and so on (Alturise & Alojaiman, 2013). System malfunctions can result in data loss or corruption. A lack of on-site technical expertise can disrupt the work of university administrators, faculty members and students, and suspend learning if systems go off-line or work inadequately (Alturise & Alojaiman, 2013). Alwani and Soomro (2010)

conducted a study on barriers to the use of technology in teaching with teachers at elementary, middle and high schools finding that one of the significant barriers was infrastructure and resources. The other barriers were professional development, policy, support and teachers' beliefs. Alhawiti's (2013) study also found that funding, which prevented the availability of infrastructure was one of the primary obstacles/challenges for integrating ICT into classrooms. Other studies have also found that the lack of appropriate infrastructure and ICT resources areas represent significant barriers towards realising the full potential of ICT usage (Basak & Govender, 2015; Bingimlas, 2009; Goktas et al., 2009).

This section looked at the impediments to incorporating technology within education at the Institute, which is also shared with other institutions in Saudi Arabia. The following section looks at pedagogy which may enhance student Arabic pronunciation learning.

3.7 Learning Arabic pronunciation

The previous section investigated factors preventing the fullest exploitation of technology within education at the Institute. This section covers a selection of pedagogical approaches deserving of critical consideration which may lead to improvements in the delivery of pronunciation training.

Based on a review of the available traditional methods presently employed and alternative approaches considered for the Institute, it could be argued that there is currently no perfected model of teaching Arabic pronunciation available for the Institute to emulate. Because each language has its own learning characteristics, lessons learnt from one second language for another language may not necessarily

apply to learning Arabic. Mohammed (2005) pointed out that there is no ideal approach for teaching Arabic language because each of the available methods has both advantages and disadvantages.

However, it could be proposed that a constructivist approach, combined with collaborative methods in the context of an integrated curriculum and utilising technology into teaching pronunciation at the Institute, holds possibilities. An integrated approach based on technology could improve the teaching of Arabic pronunciation and the learning outcomes for students could increase student engagement because:

(i) constructivist approaches enable the teachers to work as facilitators of learning in the classroom. Learning takes place as students are engaged in construction of knowledge which requires them to take responsibility for their own learning (Gray, 1995)

(ii) collaborative principles applied in learning environments enable the teacher to monitor the differences among students in order to focus on student needs. The combination of doing and learning has the potential to elicit changes within the individual

(iii) an integrated curriculum, such as combining writing with learning pronunciation, can facilitate accuracy in pronunciation (Elliott, 1995).

Elliott's (1995) work is significant for teaching pronunciation at the Institute because practical experience in listening to and speaking Arabic is very important for student progress while pronunciation and reading will tend to improve accuracy. Phonological instruction can have a further positive effect, especially given conditions where students are listening to spoken Arabic, speaking Arabic and reading Arabic.

In summary, using an integrated approach enhanced by technology would support students taking their own direction over their learning to make the classroom more interactive. The pedagogic shift in the power relationships in a classroom

(Foucault, 1972, 1977) may introduce pedagogical movement between stronger and weaker framing scenarios as the teacher's role shifts from directing student learning to facilitating learning. It appears that changes in framing are regarded as an essential step in the process towards establishing collaborative learning in the classroom (Bernstein, 1971, 1975).Additionally, it would minimise boundaries between the Arabic curriculum subjects.

3.8 Conclusion

In relation to the literature review presented in this chapter, studies have shown the importance of pronunciation as a vital component of language acquisition. A potential risk in weakening boundaries between curriculum components, as mentioned by Marza (2014), is the marginalisation of pronunciation within the larger scope of language learning. With this in mind, as well as the awareness of the benefits of relaxing the boundaries between curriculum components, Arabic language pronunciation teaching methods require rethinking from their current behaviourist practices because they are producing less than optimal results for students' learning. Some studies, such as Yunus (2009), affirmed that technology use in pronunciation learning not only improves pronunciation but also increases students' vocabulary. Moreover the integration of technology can stimulate and engage students in learning and encourage them to take greater control over their learning (Shih, 2010; Juniu, 2006; Gumbo & Mawire, 2013).

In terms of power relations the extent that educational institutions either through direct power exerted by the physical presence of the teachers or through indirect power was discussed. It was demonstrated that the exercise of power by teachers can have a direct bearing on student learning, as argued by Jamieson and

Thomas (1974). Because of the hierarchical and administrative nature of educational institutions, students are required to operate within the system such as attending classes and completing assignments, and to some extent it is not possible to terminate the power relationships which exist in such institutions. However, through integrating a technology-enhanced constructivist approach into the language learning environment power structures may be able to be reduced to facilitate learning and share control with students. A constructivist approach may also lead to weaker framing and weaker classification as the teacher acts as a facilitator, developing the curriculum around students' needs and encouraging students to take control over their learning.

Based on the literature covered in this review there appear to be three major gaps which this thesis will contribute to filling. First an overwhelming majority of research into second language learning is predominantly related to English being the L2 language, either acquiring it as a foreign language or second language, with very little research on the learning of Arabic as a second language. Therefore, this study fills a gap in the research on teaching Arabic as a second language, specifically teaching Arabic pronunciation to non-native speakers of Arabic attending an Arabic language institute in an Arabic speaking country.

Second, an overwhelming majority of research conducted in education environments in the Middle East predominantly investigate teaching and technology-enhanced teaching from a behaviourist approach in contrast with constructivist approaches. However, this thesis's study focuses on the results of shifting the pedagogy associated with the teaching and learning of Arabic pronunciation when constructivist approaches are introduced at the same time that technology-enhanced learning of pronunciation is included in the learning design for students from a non-

Arabic background. Therefore, this study fills a gap in the research into pedagogical change precipitated by the introduction of technology in an Arabic context.

A third gap in knowledge that this thesis contributes to filling revolves around the study's participants who are adults learning in a higher education setting. A majority of studies from the Middle East were conducted with children in primary and secondary education, with implications of non-transferability of findings to adult tertiary educational environments such as those at a language Institute.

In the next chapter the relationship between the study's questions and the methodology, including research design, participants, data collection and data analysis methods will be detailed.

Chapter 4:
Methodology

4.1 Introduction

In order to answer the research questions of the study, an appropriate methodology needed to be chosen and decisions made about how the research would be undertaken. In this chapter the qualitative research paradigm is explored in relation to it providing the approach deemed most relevant for the study. Within the qualitative approach a justification for the use of action research and focus group interviews is outlined.

The chapter provides detailed information about how and why the study followed the methodological approach which it did. The qualitative research methodology is explained to provide a grounding which seeks to justify why the study chose to use this avenue of research. Action research is explained in its various forms and the specific interventional action research cycles taken in this study are outlined. The action research was designed around the needs of the research questions together with arguments validating their importance. The study's students and teacher participants are introduced, explaining who they were, how they were selected and their role in the research, together with my observations of them. Data collection is discussed in its two phases: one involving a series of tests which I conducted and the second being the action research cycle's intervention measures. The analysis of data, ethical considerations and issues of power are also explained.

4.2 Qualitative approach

This section discusses qualitative research, particularly in contrast to quantitative research and justify why it is appropriate for this study. It will justify the use of qualitative methods of data collection which were used to answer the research questions:

(i) How is technology currently used in teaching Arabic to non-native speakers at the Institute?

(ii) How does a technology-enhanced constructivist learning approach influence students' pronunciation of Arabic?

(iii) What were students' responses to a technology-based constructivist approach to learning Arabic pronunciation?

Many studies undertaken used quantitative approaches to investigate the impact of using technology in teaching pronunciation such as Elimat and AbuSeileek (2014); AbuSeileek (2007) and Neri et al. (2008), yet these studies were limited as they provided little in-depth information about the pedagogy involved. In contrast, this study was accompanied by an intervention in the form of action research. As I was interested in the impact of that intervention, a qualitative approach was deemed more suitable because I needed to ask questions in order to 'dig deeper' into students' perspectives to understand how and why they held the opinions they formed. I therefore needed to ask questions to generate sufficient data to provide explanations about their experiences during the intervention as well as delve into my own experiences.

As a result, the study sought to examine intangible and subjective qualities such as attitudes to the pedagogy and engagement, rather than strictly quantifiable or objective qualities, such as specific hours spent using technology.

The application of a qualitative approach was considered particularly relevant to the study because as a form of inquiry it analyses information through language, behaviour and feelings under actual teaching conditions. It would encourage student and teacher participants to elaborate on their lived experiences about the application of technology during their education in teaching and learning pronunciation (Bailey, 2007; Welch, 2011). These experiences may not be accurately reflected using a quantitative research approach (Berkwits & Inui, 1998) because the current research explores areas of human behaviour which cannot be quantified (Esch & Esch, 2013).

Qualitative research, according to Esch & Esch (2013) can provide robust insights from actions that have occurred in a real-life environment. Qualitative research is a form of social enquiry and an inductive approach that focuses on individuals' behaviour, experiences and perspectives that occur as part of the social world phenomenon, and on the way observations can be interpreted and made sense of (Lapan et al., 2012; Welch, 2011). It preserves the intended meaning which forms an understanding of underlying social processes in a learning environment and furthermore can provide memorable examples of important issues that enrich the learning field.

Concerning the word 'qualitative' Denzin and Lincoln (2000, p. 8) state:

> … it implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured (if measured at all), in terms of quantity, amount, intensity, or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasize the value-laden nature of inquiry. They seek answers to questions that stress how social experience is created and given meaning. In contrast, quantitative studies emphasize the measurement and analysis of causal relationships between variables, not processes. Qualitative forms of inquiry are considered by many social and behavioral scientists to be as much a perspective on how to approach investigating a research problem as it is a method.

Qualitative research advocates argue that a qualitative approach provides a better understanding of the actions and interactions that occur within the phenomenon than quantitative research because a qualitative approach takes into consideration all constituents of the actual social world (Esch & Esch, 2013; Obeidat et al., 2011). A qualitative approach is thus used to study less known or less explored phenomena and cases where there exists little knowledge (Obeidat et al., 2011).

A qualitative approach explores an in-depth analysis of the research topic under investigation by employing a variety of data gathering tools such as individual in-depth interviews, structured and non-structured interviews, focus group interviews, observations and field notes (Ary et al., 2010).

Qualitative methods undertaken in research attempt to access and interpret important or meaningful evidence in the context of the data collected (Merriam, 2009, p. 2). This is due to the fact that this type of data involves collecting subjective opinion-based information from real life people reflecting their experiences of genuine conditions relevant to the subject being studied (Yin, 2011; Myers & Avison, 2002; Conrad& Serlin, 2006; Bailey, 2007; Welch, 2011).

A focus group is a group discussion on a topic designed to generate data in order to answer research objectives. As a research tool it was developed after World War II (Stewart et al., 2007). It involves conversations with participants which are guided, monitored and recorded by a researcher (Gill et al., 2008). Focus group interviews are widely used in gathering interview data in research that seeks to bring real experiences of the participants to the surface because participation can capture participants' subjective perspectives and candid responses (Leung & Savithiri, 2009)by drawing closer to them through detailed interviewing and observations (Hoepfl,1997).

Focus group interviews are useful for uncovering in-depth information on issues that might be missed through quantitative methods of data collection because respondents typically have opportunities to express opinions which go beyond those specifically aimed at by the question's framing yet may prove valuable to the research (Ary et al., 2010; Catterall & Maclaran, 1997; Rabiee, 2004). Through group interaction on a topic which the researcher determines, based on its potential to provide answers to research questions, detailed information can be obtained about prevailing feelings and the perceptions of its members (Mellenbergh, 2008). Focus groups are known for their flexibility (Byers & Wilcox 1991) in being useful for applied projects (Barbour, 2014). They are also relatively inexpensive and an effective use of time (Leung & Savithiri, 2009).

Consequently, focus group interviews were chosen for the current study as an instrument to collect qualitative data that sought to determine and understand the perceptions and attitudes of students about the features, services and teaching products employed during the course of the research's intervention (Taaye, 2007; Schmiede, 1995) and from teachers about their practices and views on technology- enhanced delivery.

Considering the diversity present amongst students, focus groups are an ideal medium which allowed participants from the same first language to assist each other in their shared language, and allowed them to translate or explain some of the questions in case the participant did not understand it (Vaughn et al., 1996).

Another method of gathering data about teaching practices and pedagogy using a qualitative approach is action research. Action research is the process of implementing a change as part of the study in order to observe the effects of this

change for research purposes. Action research is frequently conducted within functioning organisations (Kemmis, 2006) as was the case in this research. During this study action research sought to improve the quality of pedagogy and to resolve learning problems through a process that required experimentally replacing the Institute's behaviourist pedagogy with a constructivist one while simultaneously substituting traditional curriculum with a modern technology-based curriculum.

Through the use of action research I considered that I would understand the pronunciation skills needed for the students and offer technology to assist them to solve their own learning problems. Action research principles and methods along with classroom participation were used to guide the research process. Action research also used generated data based on observations of classroom practice to produce research findings that would answer the second and third research questions.

To further validate the influence of the action research quantifiable data in the form of pre- and post-tests was employed. Raw descriptive statistical data was used to provide more objective data from which to compare the qualitative results on student achievement and student learning outcomes.

The use of focus groups and an action research approach therefore provided the data to answer the research questions relating to technology usage and pedagogical approaches. Table 4-1 describes the relationship between the data collection tool and research questions.

Table 4-1 Research questions and data collection tools

Research question	Data collection tools
1. How is technology currently used in teaching Arabic to non-native speakers at the Institute?	Focus group 10 participants (2 groups x 5 teachers)
2. How does a technology-enhanced constructivist learning approach influence students' pronunciation of Arabic?	Focus group 12 participants (2 groups x 6 students)
3. What were students' responses to a technology-based constructivist approach to learning Arabic pronunciation?	Action research Reflective journal Pre-test and post-tests

This section discussed qualitative research specifically with regard to its suitability to the study. The following sections will outline the data collection tools used in the current research, justifying their use to answer the research questions. It will begin with an overview of action research and the benefits of action research in educational contexts followed by the details of the research design undertaken in the study. As this study draws on action research it is important to provide details of the approach and its relevance to this study.

4.3 Action research

The previous section discussed why qualitative research was deemed most appropriate for the study while in this section an outline of what action research entails and why it has been used in this study is provided. This outline is then followed by a detailed description of precisely what action research was undertaken during the course of the study to investigate my own pedagogy and pedagogical change.

Action research aims to solve real world problems by producing guidelines to implement strategies for best practice, based on experimentally implementing the changes advocated theoretically (Denscombe, 2010, p. 6). There are two types of action research: (i) participatory action research; and (ii) practical action research (Denscombe, 2010). Participatory action research endeavours to understand the world by changing it, while practical action research is in effect implementing change and arriving at best practice through a process of trialling the proposed new practices, evaluating results, adjusting trial implementation, then trialling again; to arrive at a perfected new methodology (Schmuck, 2006).

Action research is a suitable methodology because it allows researchers to implement changes, typically in a functioning environment, compatible to their study, and then to observe the effects of these changes. Researchers typically theorise changes, so action research provides them with an opportunity to determine whether their theories possess real world practicality. Action research could be viewed as comparable to a scientific experiment conducted in a laboratory setting (Schmuck, 2006).

In the education sphere action research offers researchers an opportunity to change teaching practice according to the theories being advocated and to observe the effects on learner outcome. It provides an avenue of enquiry into the differences in teaching and learning theory. Action research leads to gathering useful data allowing the study to satisfy its objectives (Pine, 2008). O'Connor et al. (2006) states that action research bridges the gap between theory, practice and reflection providing greater knowledge of the subject under consideration. It is both a methodology and data collection tool.

According to Katherine, O'Connor, Greene, Patricia and Anderson (2006) action research is commonly used in education, especially by teachers as it allows them to resolve problems as they arise within the classroom setting. Action research is employed in academic study to initiate innovative learning activities and strategies by understanding situations through new thinking which provides evidence pertinent to answering research questions. Typically, the term action research refers to a reflective process of progressive research in which individuals working with others either in a team or as part of a 'community of practice' engage in an interactive inquiry and discussion process that enhances and improves issues under investigation, within that team or the community at large (Ferrance, 2000; Kemmis, 2006).

In the context of the research and in an educational setting, the process of action research commonly involves assessing teachers' and students' needs, planning action to address those needs, implementing the action as known by the integration of action through implementing a research plan, while investigating the effectiveness of the implementation, in order to be more effective for participants in the future (Ferrance, 2000; Kemmis, 2006).Ongoing evaluation, testing and monitoring of improvements in practice can be achieved by participants involved in the process.

Action research is thus a reflective process for performance improvement and within my class in the Institute's context it helped me elevate the academic level of classroom practice through engagement in a research project that was authentic and rigorous (Kemmis, 2006). In situations such as those at the Institute where a changing pedagogy is under consideration, action research is suited to examining the link between student achievement and teaching methods used in the classroom (Gordon, 2006).

The action research in this study was conducted inside a laboratory class with the purpose of developing the students' pronunciation skills. It was an iterative process in a sense that it helped me as a teacher-researcher to generate a feeling of ownership over the class performance-based assessment through enabling me to become systematically self-assessing.

In line with the aims of this study, my action research project involved two components: action and research. The action component of the intervention included the use of technology during the pronunciation class with my students, and the research component involved creating new knowledge by systematically analysing my actions so that I could better facilitate my students' learning.

Another benefit of employing an action research approach was its ability to enable me to take on new roles; teacher as researcher and teacher as decision maker (Mertler, 2014). As a teacher-researcher, I could refine the curriculum and improve teaching methods to influence students' practice and understanding, and also to contribute to overcoming students' difficulties (Lingam, 2012; Boahene, 2004; Freebody, 2003; McAteer, 2013). The principal benefit of my action research was that it provided an opportunity for me to actually see my propositions in action and to cause me to make any adjustments if they become apparent. The advantages of weakened framing and the claimed benefits of transferring power from teachers to students as advocated by Bernstein (1971) and Foucault (1977) were similarly put to the test during the action research. While technology has been enthusiastically embraced across the world, its application in Saudi Arabian educational settings has been slow, so during the action research its adoption could demonstrate its benefits in terms of improved outcomes. Therefore, the action research served a critical role in

generating the information which permitted the study's research questions to be answered.

Through the action research I sought to understand and explore how students constructed their own learning through social interactions in the laboratory where I adopted the assumptions of constructivist theory. Social constructivist approaches recognise the impact of the social environment and the interaction on how people construct their knowledge (Yang & Wilson, 2006; Salazar, 2008). Action research provided an opportunity to witness this in practice.

The action research which I undertook constituted substituting one of the Institute's four-weekly pronunciation classes' traditional teaching approaches with a collaborative approach. In tandem with this rather than conducting classes in a standard classroom with the students seated at desks facing a teacher standing in front of a chalk board, classes were held in a specialised language laboratory where each student accessed their own computer. Students did not face the teacher who remained at the front of the class, but the teacher roamed around the class, occasionally inspecting the computer screen and personally assisting each student at their desk individually. From a curriculum point of view, instead of the teacher prioritising covering the syllabus and thereby applying equal emphasis to all Arabic letter-sounds, during the action research only the identified difficult sounding letters were studied.

The action research cycles provided students with opportunities for both independent learning and group cooperation, which indeed occurred to produce the collaborative learning element of the study. While the classroom practice provided one aspect of the action research, the students' focus groups provided another element to the action research, with relevant observations recorded in the reflective journal. At the

commencement of the study I aimed to improve learning outcomes through changing pedagogy and introducing technology, implementing my ideas based on theoretical understandings through action research. Evidence to justify the confidence in my adopted approach was recorded in the pre- and post-test results which measured student progress.

My action research falls into the category of participatory action research, as essentially it did not involve elements of 'trial and error' with repetition of experiments following adjustments. Essentially the action research was conducted once over the duration of a single semester.

The action research therefore needed to incorporate and explore any unforeseen events, while keeping within the parameters of research plans structured to answer the research questions. As a result, the action research approach I used in this study was designed in order to answer the research questions relating to technology usage and pedagogical approaches. Schratz (1992) argued that there are sets of questions which may lead to finding out the challenges that face teachers in the class such as:

> How can I motivate my students to actually learn what I teach them in my lectures? How can I get my students to work more independently? How can I include the students' ideas in the planning of my lectures? (p. 81).

In the current study I was also challenging myself as a teacher and asking similar research questions. Earlier researchers have searched for ways to increase student engagement and improve learning outcomes by using technology (i.e. computers). The action research I undertook similarly evaluated the effects of technology on student engagement.

During the study process some limitations of the research became apparent which would result in changes to the methodological approach taken, if this exercise where repeated. This together with recommendations will be discussed in Chapter 9, the conclusion chapter.

During this section the nature of action research was discussed together with its advantages and practical uses in education. In the next section the manner of data collection will be discussed outlining the stages of the research.

4.4 Data collection

The design of the current research included the collection of data in stages: prior to the action research, during the action research phase and undertaking focus groups with students after the action research. Focus groups with teachers were used to answer the first research question. The action research phase included pre- and post-tests, the implementation of learning sequences, ongoing reflection and evaluation of student learning and my teaching documented in my reflective journal.

The qualitative data collected included pre- and post-test results, the action research cycles and reflective journal entries, where observations of student behaviour were noted to enable the evaluation of the effects of technology practices during research cycles. Because this current research involved analysing information through spoken language, behaviour and feelings within the normal classroom environment the qualitative approach provided opportunities to record attitudes expressed non-verbally as well, such as facial expressions (Berkwits & Inui, 1998). Students' focus group interviews and teachers' focus group interviews were also used to collect data.

The next section will detail the research design beginning with data collection which outlines the stages of the research: (i) the pre- and post-test phases of the action research cycle; (ii) the three action research cycles; and (iii) the focus groups. Participant details will be included in the relevant section.

4.4.1 Phases of the research study

This section discusses the practical phases involved in the implementation of the current research. My personal experiences were central to my action research, because I was able to identify exactly what the problematic areas were for non-native speakers studying Arabic pronunciation (Mertler, 2014). After identifying the problem I determined a plan (McDonnell & McNiff, 2014), then proceeded to work through it. In the last step I determined the strategies to use, based on the literature while also drawing on my own experiences.

The plan involved three interrelated research phases though for the purposes of explanation each is presented as a separate stage. The first phase involved obtaining a pre-test baseline, which was carried out before the commencement of the action research, and conducting a series of post-tests which aimed to monitor and evaluate the implementation of the action research cycles. The second phase involved conducting the action research cycles which included a series of interventions: pronunciation software, YouTube video clip, and CDs and cassette tapes. The last phase involved collecting data from focus groups. The students' focus group interviews provided data about their perceptions about the interventions of technology in teaching pronunciation, their experiences and learning, and the teachers' focus groups explored teachers' attitudes towards the current use of technology.

These three stages were developed in a way that integrated research into the study's continuous cycle of planning and acting, turning research into a means of social intervention. The research design aimed at creating a culture of research in which knowledge and reflection were constantly fed back in ways that were able to help the goal of reinventing the pedagogy and curriculum.

4.4.1.1 Phase 1: Pre-test and post-test cycles

A pre-test and post-tests were used to measure the changes in student performance through the duration of this study (Dimitrov & Rumrill, 2003). The pre-test was conducted before initiating the interventions with all of the students in the pronunciation class (n=32). The post-tests occurred during and after implementing the intervention action research cycles as one measure of students' learning. They were delivered to assess the impact of technology on students' pronunciation skills. I developed both the pre-test and the post-tests in Arabic. Each test was developed to identify students' levels of pronunciation in order to come up with an initial and revised actionplan to assist students experiencing difficulties linked to their pronunciation abilities (Figure 4-1). The numbers of pronunciation errors made by each student for all tests were evaluated by me and recorded (see Chapter 6 for further discussion).

Pre-test 1

Test 1, the pre-test, occurred in week 1 prior to the implementation of any educational intervention. Each student completed the pre-test in order to find the level of knowledge of pronunciation in the classroom. The pre-test consisted of two oral pronunciation tests given to the 32 students in the class (Appendix A Pre-test):

(i) eight single words which contained all the difficult to pronounce sounds, and

(ii) the first chapter of the Qur'an (*Surat Al-Fatihah*).

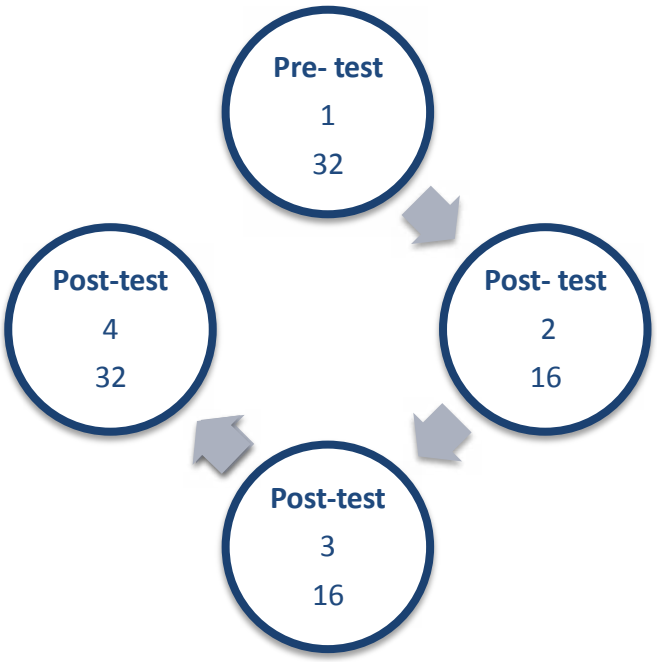

Figure 4-1 The pre-test and post-test cycle

Post-test 2

Test 2 was conducted following introduction of the pronunciation learning software to 16 students in order to identify their progress and the effectiveness of the interventions used in the class. These 16 students were selected randomly from the class roll by choosing their names as they appeared in an alphabetical list and selecting all odd numbered students (i.e. students 1, 3, 5 etc as their names appeared on the class roll). The aim was to determine the extent to which students had improved their pronunciation skills. The test was based on the five Arabic consonants which had been covered in class (Eˆ- ع/ zˆ- ظ/ tˆ- ط/ sˆ-ص / hˆ-ح). The other difficult consonants were

omitted from the test because they had not yet been studied at week 6 but were due for study in the following weeks.

Post-test 3

Test 3 was conducted in week 11, by which time students had become familiar with the pronunciation learning procedure and had been introduced to learning tools such as the comprehensive YouTube tutorial video clip, but prior to CDs and audio tapes which were offered to students as an additional learning tool during week 11. The same sample of 16 selected students who participated in test 2 were also used for this test. The form of the test was an oral pronunciation test of five Arabic consonants which included (dˆ-ض/ ɣ-غ/ x-خ/h-هـ /s-س). The test evaluated pronunciation proficiency of the selected students. As with the other tests, students were required to read a set of single words containing the five difficult to pronounce consonant sounds, and all mistakes they made were recorded by me.

Post-test 4

In the final stage, post-test 4 was conducted involving all 32 students. The post-test consisted of two oral pronunciation tests similar to the first test:

(i) eight single words (different from the pre-test) which contained all the difficult to pronounce sounds, and

(ii) one paragraph (a story from the authorised curriculum textbook).

The fundamental objective of conducting the pre- and post-test stages was to establish a benchmark to permit the comparison of first and last test results to show progress. After conducting the intervention, the results of the post-test allowed me to compare students' performance over the entire semester by comparing the post-test results from the pre-test (Appendix B Post-test).

4.4.1.2 Phase 2: Action research cycles

This section describes the action research cycles, including a description of the student participants and my reflective journal. The action research involved a single lesson conducted once per week during the 14 weeks of the semester, conducted in one of the Institute's four laboratories. Although lessons at the Institute are described as one hour, they are in fact precisely 55 minutes long, with 5 minutes allowed for students and staff to move from one class to the next.

The pronunciation learning software used was developed as part of the study. It was based on the use of sounds chosen from the formal curriculum used by the Institute. The second method was using one comprehensive YouTube video clip (3 minutes, 1 second) to illustrate the sounds and the last method was using CDs and cassette tapes for home practice. Figure 4-2 demonstrates how action research was applied in this study.

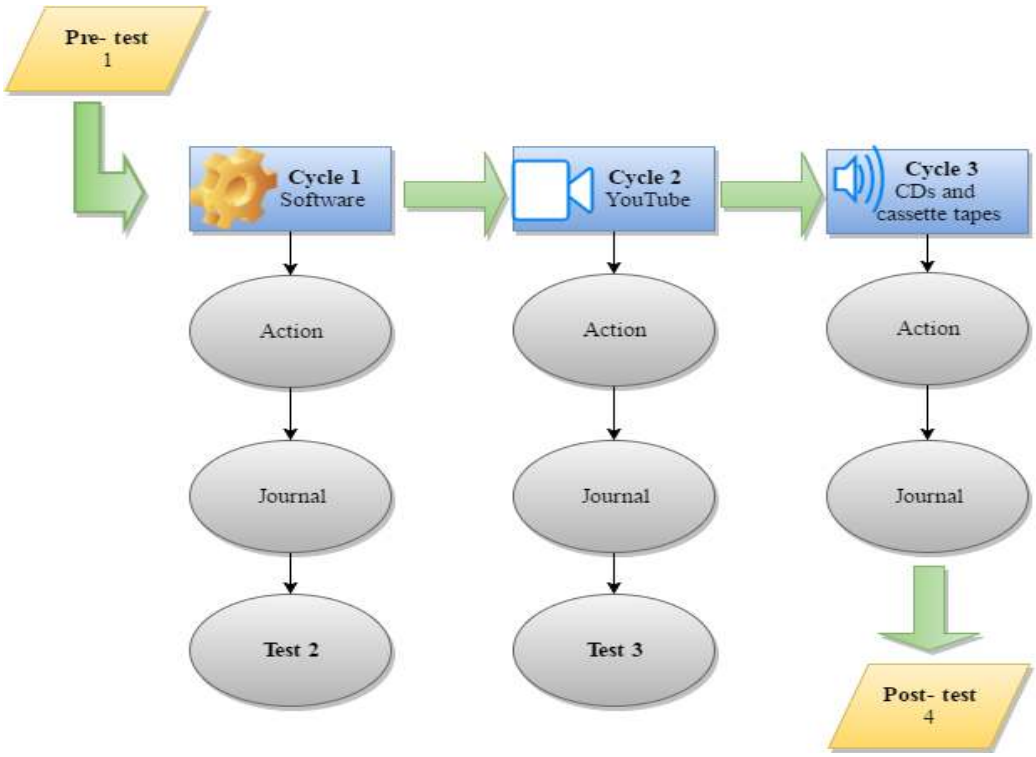

Figure 4-2 Action research cycle

Cycle 1: Pronunciation software

The pronunciation learning software was developed to use specifically in the laboratory class for this study. The software was developed by an educational company in Jordan under instruction from myself. Its design was based on my experiences as a language teacher and student combined with features inspired from some Smartphone apps. The authorised textbook of the Institute was the basis for material used in the software. During the interventions, each student had access to a computer with the software. The software was used to target the learning of the pronunciation of the challenging sounds of Arabic, which were chosen in the third week of the semester through consultations with the students who were asked to identify their most difficult to pronounce letters (Table 4-2). Table 4-2 lists the number of respondents who had problems with each letter-sound (recorded as number of responses) ranging from eight for the most difficult sound (ض/ dˤ) to several letters having only one student who encountered problems. As the table demonstrates (ض/ dˤ) was regarded as the most difficult sound.

Table 4-2 Difficult letters sounds

Letters	IPA	No. responses	Letters	IPA	No. responses
ض	dˤ	8	ط	ðˤ	2
خ	x	6	ر	r	1
ظ	ðˤ	6	ق	q	1
ح	ħ	4	ع	ʕ	1
ص	sˤ	4	ت	t	1
غ	ɣ	3	ث	θ	1
ذ	ð	2	ج	dʒ	1

As the teacher-researcher I taught the students from the pronunciation class for five weeks utilising the pronunciation software installed on computers in the laboratory.

The students were taught to pronounce the identified letter by means of pronouncing words and sentences containing these letters. The students were asked to listen to the recorded sentences and repeat them, with their pronunciation of the repeated sentence being recorded by the software. The pronunciation learning software allowed the students to listen to and record their own responses. The software was designed to provide students with individual feedback to make a comparison between the original pronunciation and their own pronunciation (Nadeem et al., 2012; AbuSeileek, 2007). This, in turn, allowed them to assess their pronunciation and self-correct accordingly.

The students had an opportunity to subsequently correct their pronunciation and repeat the whole procedure. Through this approach, students were able to take control of their learning once they had become familiar with the pronunciation learning software which was trialled in the laboratory for the first five weeks of the semester.

Cycle 2: YouTube video clip

Cycle 2 of the action research included a single downloaded YouTube (2013) video clip in the laboratory class for use in the next 10 weeks in combination with the pronunciation learning software. The purpose of using the YouTube video clip was to provide a bridge between practical and theoretical knowledge (Hoffler & Leutner, 2007). Fitzpatrick (2004, p. 12) adds that:

> The use of moving images linked to sound provides learners with exposure to all important elements of spoken communication: gestures, proxemics, pronunciation, intonation, all embedded in natural, cultural contexts.

The particular clip, which was approximately six minutes and one second long, comprehensively covered the primary obstacles a majority of non-native speakers experience when learning Arabic and demonstrated the solution, which is to emulate the correct point of articulation when pronouncing consonants (Allam & Mahmud, 2004). The YouTube video clip contained visual illustrations, explanations and instructions on how to accurately pronounce all Arabic sounds.

Screenshots from this YouTube video is shown in Figure 4-3 which highlights the clarity with which the clip explains how to achieve accurate pronunciation. The students watched the video for the first 15 minutes of the class and attempted to repeat and articulate the shown pronunciation exercises. The remaining 40 minutes of the class was focused on the continuing use of the pronunciation learning software to further the students' Arabic pronunciation skills.

Despite the use of the YouTube video clip and the software, a few students still were experiencing difficulties. In response CDs and cassette tapes were provided for students to take home and practise during the final four weeks of the semester during cycle 3. These tools contained the same content as the previous cycle, and they were used by all 32 students. Any improvements were noted in the post-test and in my reflective journal.

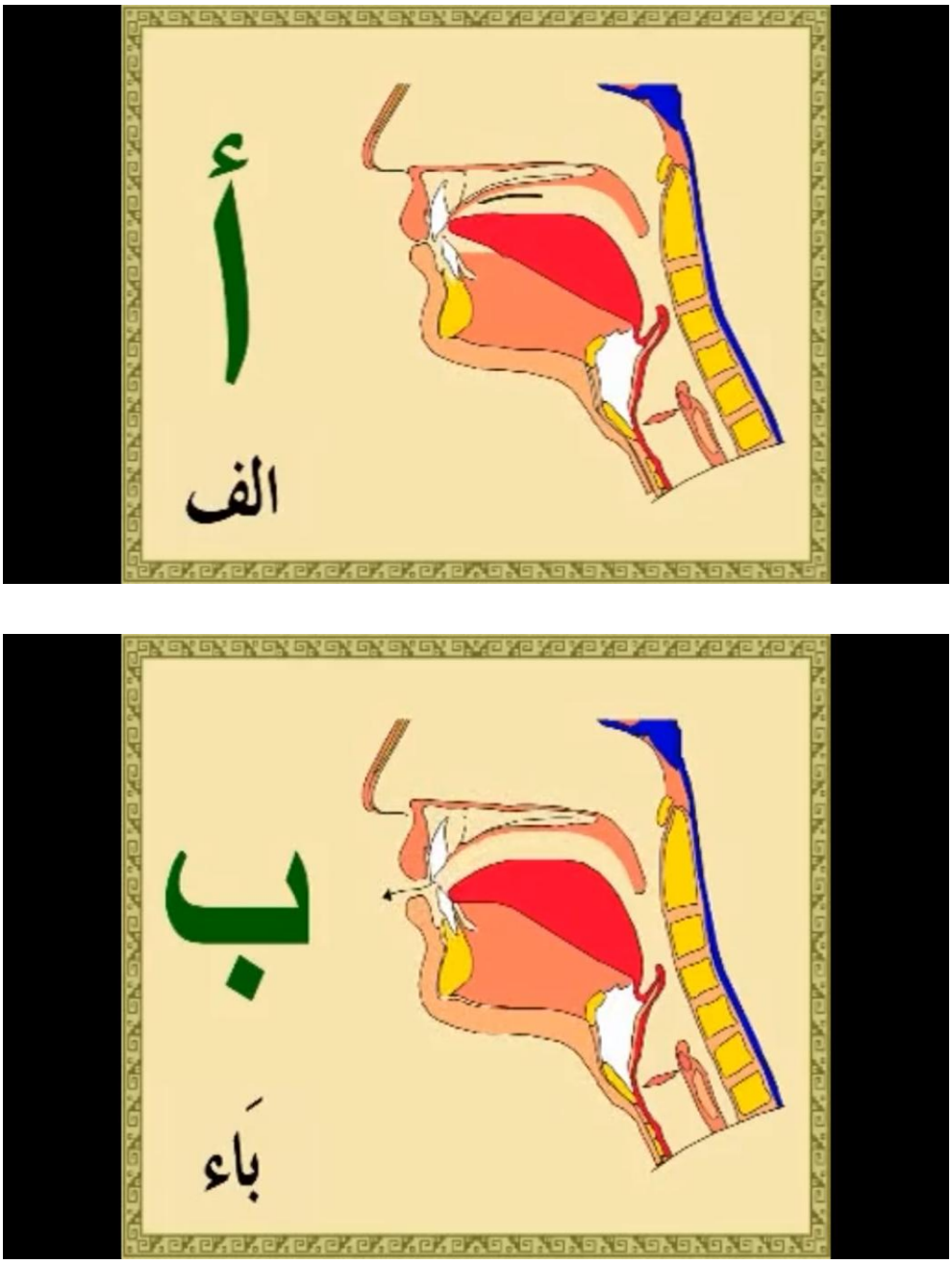

Figure 4-3 Screen shot from YouTube pronunciation video

Cycle 3: CDs and cassette tapes

During the last four weeks of the semester, starting from week 11, students were provided with additional CDs and audio cassette tapes with further examples of Arabic pronunciation. Hassan (2014) suggested that Arabic students at university level need to

listen regularly to English sounds by using audio tools such as CDs and cassettes. However, students continued to use the pronunciation learning software and YouTube video clip. The CDs and cassette tapes were provided to the students for use at home only and were not used in the laboratory class.

4.4.2 Student participants

During the semester there were five pronunciation classes at level two from which the Institute's administration allocated one, at random, for the purposes of the research. According to Nodoushan (2009), in action research, the size of the sample is not of significance. Action research can be conducted, if necessary, with one person.

Consequently the study's class represented an average class, originally consisting of 29 students. I verbally described the purpose of the study and I handed an information sheet and consent form to all students for them to decide whether they wanted to be part of the research or not. All students agreed to participate (Appendix C for information and consent forms). Three further students were added by the Institute's administration to the class in week 3. These students were also handed information sheets about the project and consent forms to confirm their willingness to participate, to which they agreed. Therefore, from week 3, the class consisted of 32 non-Arabic speaking students from the second level who all participated in the action research. Pseudonyms have been used to comply with ethical standards.

The student participants came from a range of different cultural and language backgrounds (Table 4-3). The three largest language groups were Malay, Mandarin and Urdu with four students from each group representing a total of 12 students. The second largest language groups were English, French and Swahili with three students from each with a total of nine students. The rest of the students spoke 11 different

languages (see Table 4-3). With respect to technology usage, more than two-thirds of participants used technology daily (68.8%) with approximately one-third (32.1%) not using technology daily.

Table 4-3 Students' demographic and daily technology usage information

Participant name	Daily technology use	Age	First language
Jassim	Yes	22	Malay
Abdulaziz	Yes	24	Malay
Abdullah	Yes	23	Malay
Ali	Yes	20	Malay
Abdulrahman	No	26	Mandarin
Bassam	Yes	19	Mandarin
Bilal	Yes	20	Mandarin
Hashem	No	25	Mandarin
Baseel	No	18	Urdu
Fadi	Yes	20	Urdu
Nabeel	Yes	26	Urdu
Nayef	Yes	18	Urdu
Abdel-Kader	Yes	22	English
Abu Baker	Yes	19	English
Nawaf	Yes	18	English
Adel	Yes	24	French
Samir	No	26	French
Noor	Yes	21	French
Mohannad	Yes	24	Swahili
Eid	No	24	Swahili
Mohammed	Yes	19	Swahili
Omar	No	25	Tagalog
Najeeb	Yes	24	Tatari
Khaled	Yes	20	Thai
Othman	Yes	21	Tswana
Abdul-Jabbar	No	24	Bahasa
Saad	Yes	23	Chechen
Ammar	No	22	Dhivehi

Participant name	Daily technology use	Age	First language
Ahmed	Yes	23	Portuguese
Mahmoud	No	20	Sangho
Ghazi	Yes	22	Farsi
Salman	No	22	Vietnamese

In regard to age, the students ranged from 18−29 with approximately one-third under 18-20, one-third 21−23 and a third 24−29 (Table 4-4).

Table 4-4 Age of students

Age	Frequency	Percentage
18-20	11	34.4
21−23	10	31.3
24−29	11	34.4

4.4.3 My reflective journal

During the action research stage, I kept a reflective journal and made notes during each lesson as I trialled each new strategy, in order to reflect on different aspects of technology-based constructivist approaches versus the traditional behaviourist method of 'drilling' in teaching pronunciation (Appendix D example of the reflective journal).

During my observations, I took notes of important points during sessions, generally in bullet point form, which I then elaborated on in further detail after the session while it was fresh in my mind (Barbara, 2005). I paid particular care to observe the setting, participants' viewpoints and what seemed to be occurring which I recorded in my field notes in varying degrees of detail. For example, I observed the computer laboratory, and wrote an observation of what was occurring in the space or took a seat

with the students to see what they were doing in practice. These field notes not only described what happened during my observations and those with whom I interacted, but also included my interpretations and feelings for what was taking place.

The ultimate objective of the action research was to directly engage with students and to observe the interaction with both the learning material and technological educational aids. I sought to connect with the social life of students in order to specifically understand what their opinions and practices actually were. While developing a relationship with both teachers and students in order to comprehend their perspective towards technology and pedagogy, I also tried to remain objective in order to take notes of any situation and to apply them to the research, an understanding which is called the 'thick' or 'rich' description of the situation (Geertz, 1973).

Together, taking field notes, writing down observations and my pre-existing experience as a language teacher facilitated the study, and were key components of data collection. Some of my observations included students moving ahead of the curriculum to study parts of the authorised curriculum textbook not yet covered and to intuitively focus their own personal efforts on the most difficult to pronounce sounds (see Table 4-2), without being prompted to do so. As (ض -dˤ) was regarded as the most difficult sound I exclusively taught this letter alone in week 8and week 14 unlike the rest of the weeks where two groups of letters were taught. Thus, it gave me a chance to modify the curriculum based on student needs.

4.4.4 Stage 3: Focus groups

The third stage of the research involved seeking to understand the perspectives of both students and teachers through focus groups. Each group was divided into small sizes.

4.4.4.1 Student focus groups

The students' focus group interviews were conducted to obtain data related to the second and third research questions, aimed at identifying the impact of a constructivist learning approach based on technology on students' pronunciation and identifying their engagement towards learning Arabic language pronunciation. Questions were also aimed at obtaining data on the effectiveness of the interventions using technology conducted during the action research cycles.

In the last class of the study I invited students to volunteer to take part in a focus group interview. I informed them that the focus group would be held after the final exams. Approximately two-thirds of the class volunteered in response to my request. From these volunteers I randomly selected 12 students, which included students from eight different language backgrounds (Table 4-5). Two focus groups of six students each were conducted.

The smaller groups were chosen to casualise the meetings and to ensure each participant would contribute within the time frame. A larger focus group interview may have resulted in shy members not expressing themselves. The first focus group interview lasted precisely 67 minutes in length, while the second focus group interview lasted 54 minutes (Appendix E students' focus group questions).

Table 4-5 Students' focus group participants

Focus group	Interviewees	Age	First language
	Abdulaziz	24	Malay
	Abdullah	23	Malay
	Ali	20	Malay
Focus group 1	Abu Bakr	19	English
	Nawaf	18	English
	Mohammed	19	Swahili
	Total 1	6	
	Eid	24	Swahili
	Omar	25	Tagalog
	Othman	21	Tswana
Focus group 2	Ammar	22	Dhivehi
	Mohannad	24	Kiswahili
	Ahmed	23	Portuguese
	Total 2	6	
Total		**12**	

4.4.4.2 Teacher focus groups

To answer the first research question, teachers' focus groups were completed to understand the perspective of teachers towards their technology use at the Institute and their opinions regarding its use in pronunciation teaching.

While it is included in the third stage of the research, the teachers' focus groups were conducted at the same time as the action research stage. At the commencement of the study I verbally invited teachers to participate in a focus group interview. Because

participation was voluntary some teachers declined. For the teachers who agreed to be involved, an information sheet about the study and a consent form were provided to each of them to read and sign (Appendix F Information and consent form). Teachers completed demographic questions prior to the focus group interview about age, nationality, use of ICT, qualification, other languages and e-learning courses undertaken.

As with the students' focus groups, the teachers were also divided into two groups to facilitate full involvement in the discussions (Table 4-6). One group consisted of four teachers holding PhDs while the second group was made up of five teachers with Master's degrees. Pseudonyms have been used to comply with ethical standards.

Table 4-6 Characteristics of teacher participants

Interviewees	Age	Qualification
Focus group 1	39-49	PhD
Focus group 2	27-30	Masters

For the first focus group, the Institute head assisted me in setting the times for the interviews. It was held in a suitable environment on-campus. The first focus group lasted 77 minutes. One teacher withdrew from the focus group after the third question due to lack of time and personal issues.

For the second focus group I contacted teachers personally and met them in a suitable environment off-campus. The second focus group interview lasted 60 minutes. In both groups teachers were asked about the current teaching methods at the Institute through a set of questions with probes to facilitate the process of interviewing. The two

groups were separately given similar questions to be answered (Appendix G Teachers' focus group questions).

This section has described the data collected through various stages detailing each form utilised in order to provide information to answer the research questions of the study. The following section outlines how the data was analysed.

4.5 Data analysis

The qualitative analysis process is not linear. Seidel (1998) observed that 'noticing' encompasses the collection of observation notes or recordings and 'collecting' involves sorting these codes into instances, while 'thinking' involves making sense out of what has been collected. In this study, data collection was obtained from multiple sources to increase the validity of the study. As a primary data collection method observations from focus group interviews were recorded in my reflective journal and were used to confirm observations made during the study.

In this study, a thematic analysis approach was adopted in six phases as suggested by Braun and Clarke (2006). This approach was used to determine the major themes within the framework of constructivist theory. According to Alhojailan (2012), thematic analysis is regarded as one of the most suitable approaches for any study that seeks to extract ideas and interpretations because it provides a systematic element for analysis (p. 40). It is described as a method or process of identifying, analysing, extracting, interpreting and reporting patterns (themes) within interviews or collected data (Braun & Clarke, 2006, p.79; Stirling, 2001).

Thematic analysis allows for working with both inductive and deductive approaches to data (Stenfors-Hayes et al., 2013). This study applied an inductive

approach to data, meaning that the data was analysed without trying to allot it to pre-defined sets of codes or pre-conceptions possessed by the researcher (Braun & Clarke, 2006). These six phases were applied to data from the students and teachers' focus groups as well as my reflective journal.

1. The first phase involved familiarising myself with the data. As the researcher I first began with the transcription of the recorded data from the focus group interviews.

   The transcriptions of the teachers' focus group journal entries involved transliteration from the original Arabic to English, to ensure the meaning was accurate more than the wording. The same process was used for the translation of the students' focus group. During the lengthy transcribing and translating process I became extremely familiar with the data by reading all participants' answers and making notes of the initial ideas which emerged from the data.

2. The second phase involved generating initial ideas or codes from the data. The initial coding was done line by line by identifying and labelling important data based on its relevance to the study as determined by me. The most relevant items of data were labeled based on their similarities and differences. This included the data that was repeated in several places together with unexpected data, recorded with the date with which participants explicitly reported them. The data was organised into meaningful groups according to these codes.

3. The third phase involved searching for themes that were often broader. The codes that were identified in the second phase were written on separate pieces of paper, brought together and placed under the themes which seemed to fit. The themes created at this phase were provisional. For example, three initial

codes of ‘adoption of e-learning in educational context by university’, ‘building an integrated structure’ and ‘responsibility of university departments in preparing technology’ highlighted the use of technology if the university accepts it and that the university plays a key role in facilitating the use of technology. These three initial codes became sub-categories.

4. The fourth phase involved reviewing themes, where provisional themes were refined and collapsed into each other, with the possibility of forming more meaningful themes or a separate coherent pattern.

5. The fifth phase involved defining and naming the generated themes. This phase aimed to identify and understand the core of what each theme was about and how each contributed towards answering the research questions. This stage also involved the refining of the themes that contained additional sets of sub-categories. In the course of this research themes fell into two groups: categories and sub-categories.

   For example, the three initial codes in the third phase were categorised under sub-category as ‘university administration’. The sub-category ‘university administration’ together with other sub-categories such as ‘context of education within the Institute’ and ‘educational policies, procedures and guidelines’ created the category namely ‘university and Institute policies’. The category of ‘university and Institute policies’ together with other categories of ‘infrastructure’, ‘professional development in technology’ and ‘the need to redesign the content and its sequence of curriculum’ created the main theme of ‘technology use in the learning context’.

6. The sixth and final phase included reporting the analysis by providing excerpts that best illustrated the themes and comparing them with the relevant literature.

An example of the coding process for teachers' focus groups and students' focus group, together with the reflective journal can be found in Appendix H.

In regard to pre- and post-test analysis, the descriptive analysis was selected due to the study's small sample size, ordinal nature of variables and that the usual analysis of variance assumption of normality was not made. The purpose of the pre-test and subsequent further three tests was to track the progress of the students during the intervention. This was achieved by measuring the number of errors that were collectively made by all students, while individual scores were also recorded for each student.

To determine the performance of the intervention the principal data used was a record of student pronunciation errors between the pre-test and post-test 4. During the pre-test students each read eight words chosen because they emphasised the complicated consonants, and also read a paragraph. Any words pronounced with an error were recorded. The same structure was used in all post-tests 2, 3 and 4. Therefore, for example, a student in the pre-test may have mispronounced three of the eight words, plus made five mistakes in the paragraph meaning their error score was 3+5 = 8.

Hypothetically if in post-test 4 the same student made only one error in the single words and three errors in the paragraph their error score was 4 (1+3 = 4). The pre-test collective class error score of 104 mistakes was arrived at by adding all student errors scores together and the same formula used in each with the post-test 4 score total of 33.

4.5.1 Reliability

Golafshani (2003) points out that concepts of reliability and validity, which are characteristics of quantitative research, are usually absent from qualitative research. However for research results to be regarded as valid and reliable it is imperative to ensure some type of methodology is applied to validate the data. In the case of this study's qualitative approach basis resting that used on the action research, a constructivist approach, and interviews it was considered triangulation would be the most suitable approach to produce data which could be assumed to be both valid and reliable (Golafshani, 2003).

From a qualitative research perspective, triangulation validates research data by converging information collected using different approaches (Carter et al., 2014; Golafshani, 2003). Denzin (1978) defines the process stating triangulation "combines data drawn from different sources at different times, in different places or from different people" (Flick, Kardorff & Steinke 2004, p. 178). While Jansen et al. (2003, p. 391) define the reliability of observational research data as "the degree of agreement between sets of observational data collected independently from the same scene by two different observers or by the same observer at different times in the data collection process". In the course of this study, the data was a collected by me as the sole researcher over an extended time in different forms: classroom observations, focus group discussions with students and focus group discussions with teachers and different sets of student tests.

It was deemed necessary that this study's triangulation needed to be validate results while also providing a deeper insight into the research findings. To ensure this different data collection approaches were developed using different collection tools in

anticipation of strengthening the validity of the study's data. In the course of this research, triangulation was applied to data collection techniques by collecting similar data from different settings, such as tests, interviews and observations. Similarly to ensure data shortcomings could be avoided while achieving reliability of focus group interview data, I conducted focus group interviews after I had already collected specific information through class room observations and the four pronunciation test cycles.

Through this sequence, the classroom phase informed the focus group interviews. By doing this I was already aware of specific information I needed to the focus groups to concentrate on. As described in section 4.6 students had the option of not participating in the focus groups. Additionally the focus group discussions took place after the conclusion of the semester to help ensure data was both willingly given and to help students provide frank information in the knowledge that there could be no negative consequences for them later in the classroom. By conducting focus groups after the semester, students could, if they chose, give insulting responses about the conduct of study with no consequences. Therefore this was an example of how the study endeavoured to strengthen the trustworthiness of findings through multiple collection techniques (Golafshani, 2003).

This section has described the analysis of data undertaken in this study, including which went through the six-phase procedure to transform raw information into analysable statements grouped by labels. Moreover, the section discussed the reliability of data collection will be discussed. In the following section the ethical considerations and issues of power are examined.

4.6 Ethical considerations

The previous section outlined the process undertaken to analyse the research data. This section touches on the thesis's ethical considerations. To ensure ethical compliance as the teacher-researcher, I obtained the required ethics permission and authorisation from the Institute and the National Ethics Application Form (NEAF) process to conduct the study, before commencing any research. Participation was voluntary and the teachers and students were given the choice to withdraw from the study at any time. The purpose of the research was explained to all the participants prior to commencement and consent forms were duly signed and returned by participants.

The participants were informed of the expected time of the focus group and I obtained permission from the volunteers to record discussions with a digital recorder, confirming that the recordings would be kept securely. Moreover, I informed the participants that they had the right to withdraw from the focus group at any time if they felt tired, stressed or unwilling to continue participating in the study.

This section explained the routine ethical considerations of the study while the next section looks at the issues of power stemming from methodological considerations.

4.7 Issue of power

Following on from the ethical issues covered in the previous section, this section summarises issues of power arising from the way the study's methodology was structured specifically, rather than power issues stemming from relationship differences. This is required to be taken into account as the research was conducted in a classroom context with me as teacher and researcher over actual students.

In terms of the students evaluating the intervention, the Institute provides pronunciation classes by its professional teaching linguists. The students are not evaluated or given marks for pronunciation classes. These classes were only introduced to develop the efficiency of pronunciation among students studying at the Institute. In fact, I had no accountability to grade the students because it was not part of my role. Additionally no exams were given during, or at the end of, the semester for pronunciation except by the reading teacher who assessed students' pronunciation as part of their exam for reading. The reading exam essentially graded students on their reading ability, rather than the quality of their pronunciation.

Students were all aware they were evaluated for every subject in the curriculum (as outlined in Chapter 2), except the pronunciation class. Despite knowing pronunciation was not subject to an examination, students were enthusiastic to improve their pronunciation. Ordinarily examinations are an instrument through which teachers express their power. I believe the lack of an exam for the pronunciation class results in the teacher exerting less power over the class than other curriculum subjects where students are anxious about doing well in tests. However, despite the pronunciation teacher being unable to exert power through the 'threat' of an exam, students did not display reduced engagement, stemming from their knowledge that the subject would not be tested, so therefore would not contribute towards their overall diploma grades.

Students had the right to not be part of the research even if in the intervention group. Teaching was part of the daily classroom experience, thus all students in the class were taught in the same manner. They took part in the curriculum designed by me as the teacher-researcher as part of their daily studies. Students who agreed to take part in the research study could have withdrawn at anytime with no adverse impact on

their studies. To ensure there was no conflict of interest that may harm the students' study or progress, detailed data analysis was completed after the end of the semester. I initially informed focus group participants that sessions would be held after the conclusion of the semester, thus not interfering with curriculum workloads.

This section discussed factors relating to issues of power because the researcher's role as teacher had an impact on the relationship with students. The following section concludes the chapter.

4.8 Conclusion

This chapter has outlined the design of the research methodology which was used during the study to answer the research questions. Because academic studies are judged by the quality of their methodology, it is important to ensure that any study employs an appropriate methodological approach designed to generate the specific information needed to answer the questions; therefore this chapter undertook to explain why the specific approaches were taken, justifying their importance to the study.

The chapter began with an extensive discussion of the qualitative and quantitative features of the study. The chapter then proceeded to explain what constitutes action research and what its functions were in the study. Focus groups formed a critical element of the action research and the composition and purpose of the groups were explained. It also addressed the participants of the study and explained how they had been selected while providing details about their multi-national background. Knowing background information about the students is important in setting them in the wider context of the study. Data collection was outlined and how

the resulting data proceeded through various stages of analysis to produce usable information. Ethical considerations were explored and finally the issue of power.

Action research was used to discover more information about experiences of students at the Institute concerning their opinions relating to technology-aided learning. Following this the practical stages or the heart of the study were discussed. The chapter presented information about the data-gathering stage from the pre- and post-tests which formed an important part of the study, drawn from the action research phases. The second phase concerned conducting the action research cycles involving the strategies used in pronunciation classes. The research cycles comprised three elements: interactive pronunciation learning software, watching a YouTube video clip in class and offering voluntary take-home CDs with cassette tapes. The different research cycles were important in better understanding students' behaviours in the pronunciation setting and determining their engagement. After conducting the study and gathering the data, the final stage was analysing the gathered data. The study also gathered the results from four tests carried out during the action research phase. Normally the Institute does not test its pronunciation class students; however during the study it was necessary to do so to accurately measure any progress. Each of the four tests was different: the pre-test was designed to simply ascertain pre-intervention pronunciation levels in the class and the subsequent three post-tests were designed to measure what had been learnt during the previous weeks. Scores were determined by measuring errors, rather than measuring accuracy.

In the next three chapters (Chapters 5–7), the results from the teachers' focus groups, results from the action research based on my reflective journal, including the pre-test to post-test stages, and results from the students' focus groups will be

presented. The chapters are presented in this order to reflect a logical order to the data collected, not the stages of the research as described in this chapter.

Chapter 5 introduces the teachers then the results of their focus group interviews. Four themes emerged which included: persistence of traditional behaviourist pedagogy, lack of awareness of technology, advantages of integrating technology in educational contexts, and barriers to technology integration in teaching and learning.

Chapter 5:
Teachers' Focus Groups

5.1 Introduction

The chapter presents the findings from the teachers' focus group data. It explains the selection, composition and expectations of the teacher participants before presenting the research results in relation to answering the research question: How is technology currently used in teaching Arabic for non-native speakers at the Institute?

Four themes were identified from the analysis of the two teachers' focus group interviews. The first theme is the persistence of traditional pedagogy which provides the main entry point to other themes. Through analysing this theme further, justification for the continuing dominance of the traditional behaviourist method of teaching can be determined while barriers to replacing it became evident.

The second theme identified from the data is technology use in the learning context of the Institute. The university and Institute's policies are seen as influencing technology. The university and the Institute are viewed as being responsible for all technological needs associated with infrastructure, such as the condition of the buildings and classrooms, provision of technology, and technical and financial support. Technology use by teachers is also linked to their professional development needs and training and the authorised curriculum for pronunciation classes.

The third theme identified relates to teachers' views on the benefits of technology, which according to the participants in the study concerns strengthening the role of technology in pronunciation teaching. They believed the advantages of

integrating technology into their teaching could be associated with catering for individual student needs through the use of diverse teaching methods, improved learning outcomes, encouragement of collaborative learning and saving time.

The final theme identified was the barriers teachers perceived that affect the integration of technology into their teaching. These barriers were students' backgrounds, perceived health issues and resistance to change. While these themes are interconnected, each of them will be considered separately. The following section will examine why traditional pedagogy remains commonly used at the Institute.

5.2 Persistence of traditional pedagogy

This section outlines the pedagogical approach used during the Institute's pronunciation classes, which identifies the persistence of a traditional pedagogy. While teachers expressed some dissatisfaction with this method, traditional behaviourist teaching practices such as the direct method remain popular and indeed are justified for a variety of reasons by some teachers, despite admissions of its inadequacies. The widespread lack of available technology in many Arabic speaking countries also restricted teachers employing other methods, irrespective of whether they are open to more modern approaches.

The main aim of the curriculum is teaching correct Arabic pronunciation, which is a necessary prerequisite for any Muslim aspiring to become an *Imam*; which includes a sizeable proportion of the Institute's students. For teaching purposes 'correctness' is implicitly measured as the accepted pronunciation of classical Arabic. In other words, if pronunciation is incorrect, it will be corrected by the teachers.

The current teaching of pronunciation employs a traditional approach of 'drilling' without using technology and is representative of the direct method of teaching. Abdul-Hakeem, for example, explained his method:

> We always try to use available methods that are prompts and training through repetition, without the use of any technology.

All nine participants characterised their teaching methodology as using traditional methods, primarily using dictation and prompting. For example, Abdul-Kader said: "'Imitation' or 'drilling' is the only available method".

The previous quotes demonstrate that imitation is the main method for teaching at the Institute, which agrees with Jameel (2010) that traditional pedagogies are generally the usual method of teaching Arabic pronunciation as a second language in higher education across the Middle East region. Although all participants used the traditional behaviourist method of 'drilling' to teach pronunciation, there was evidence of personal attempts and initiatives to introduce different strategies for teaching pronunciation. Abdul-Samie reported:

> As a matter of fact I studied how to draw the position of articulation of a particular consonant, and I point to my diagram on the blackboard during a dictation exercise. I try to use all the traditional ways of practising pronunciation of each letter.

Two teachers said they prepared a list of difficult consonants and distributed it to students to stimulate the learning process. One of them, Abdul-Baqi, said:

> I prepare a separate list of consonants for each nationality and use the method of repetition to concentrate on these consonants.

Two other teachers told students to listen to recitations of the Qur'an. One teacher on occasion used and distributed diagrams of the point of articulation for consonants. Abdul-Albadee said:

> I attempt to show the students the consonants that will be problematic for them. I use the method of repetition and also listening to the reading of the Qur'an.

Teachers fully acknowledged the learning target for their students is correctly pronounced classical Arabic, as expected during public recitation of the Qur'an, as laid out in the science of *Tajweed*. While these pronunciation conventions remain unchanged, during interviews teachers showed a stirring of interest in discovering a more systematic pedagogy, than the traditional one currently used, in conveying the pronunciation rules of *Tajweed*.

5.3 Technology use in the learning context

The previous section explained why traditional methods remained dominant despite teachers having reservations about them and believing a better, technology-based alternative existed. This section outlines the factors that teachers believe impact on technology usage at the Institute. Irrespective of the fact that Saudi Arabia's government allocates substantial budgets to the education sector to invest in educational technology, replacing behaviourist methodologies is widely resisted across higher educational institutions (Krieger, 2007).

Teachers unanimously believed there existed a better teaching method than the didactic methodology currently employed, even if they were not exactly certain what it was. Several teachers believed the continued prevalence of didactic methodologies was

linked to the absence of technologies, which they had seen transform the teaching of other subjects elsewhere in academic institutions. Abdul-Hakeem observed:

> Generally speaking, there is no use of any technology in the classroom. There are just the outside screens for general messages. We may as well say that there is no use of technology at all at present.

Others were also frustrated and critical. Abdul-Kader reported "There is not any present use of the technology in the classrooms and I don't use anything". As did Abdul-Samie:

> There is no use of e-learning technology at the Institute except for some uses of technology such as a slide projector or some teaching aids such as images which are not really 'technology'.

The other seven participants of the teachers' focus groups also affirmed that their teaching practice did not incorporate any type of technology. Two teachers mentioned that the most common use of technology was the computer to show images as a teaching aid. Abdul-Wadood reported, "I use my personal laptop when I want to show pictures [of articulation points]". Abdul-Albadee also sometimes did so.

Four other participants used computers, but only for preparing educational materials. Abdul-Ahad said:

> I always use technology but only to prepare syllabus subject material; I don't use it in the teaching process.

From the teachers' responses, factors which influence the use of technology at the Institute during pronunciation teaching emerged and can be grouped within four sub-categories:

(i) university and the Institute policies

(ii) infrastructure

(iii) professional development and training in technology, and

(iv) the curriculum, in particular content and sequencing.

5.3.1 University and the Institute policies

Clear policies and frameworks are integral components of any educational institution (Almalki, 2011). Policies and framework plans and guides strengthen the whole teaching and learning process. Generally policies and framework structures encompass specific short- and long-term goals to achieve the outcomes of any educational institution. However, limitations in these goals will cause gaps and result in negative outcomes. At the Institute, policy includes a planned framework of the university in terms of preparation of language laboratories, training courses and financial support. As with any educational establishment the Institute's needs are prioritised and in many aspects limited by the financial support allocated by the university's administration. Hierarchically speaking, the Institute's administration is subservient to the university so together they share varying degrees of responsibility for the provision of physical services which are available to teachers in fulfilment of their duties.

All teachers pointed to barriers that were related to the wider context of education within the Institute. They noted that there should be leadership towards technology use shown by the Institute. For example, Abdul-Hakeem mentioned:

> If the administration adopts the concept of e-learning, this will help all the teachers to use it; but if it is not adopted then there is an obstacle.

This quote reflects the views of the teachers that the administration departments of other university faculties are playing a role in providing opportunities of technology usage. According to Schiller (2003) administration departments sit at the heart of academic institutions and play a vital role in enhancing the learning environment by

providing technology. Mingaine (2013) similarly found that educational leadership plays a primary role, whether positive or negative, in educational institutions with effective leadership leading to improved engagement by both students and staff.

The teachers attributed weaknesses in policy and practice to different levels of authority: each participant knew of one or more officers responsible for facilitating technology use in particular departments highlighting that relations among the departments also contributed to limited technology use in the Institute. Teachers believed there were five official bodies that exercised varying degrees of responsibility for facilitating the use of technology: the university administration, the administration of the Institute, the College of Information Technology, the Department of Educational Technology, and the Ministry of Planning and Finance.

From my experience as a teacher at the Institute, each department has partial responsibility. For example, the Head of the Department of Educational Technology is responsible for identifying the needs of teachers, such as training courses and educational tools. He submits these requests to the administration of the Institute, which in coordination with the Office of the Dean of Information Technology provides appropriate training opportunities. Ultimately the university administration provides financial support for training and educational tools.

5.3.2 Infrastructure

Participants all believed that inappropriate and needless infrastructure and capital resources were a significant cause of the limited use of technology at the Institute. Abdul-Manan said “If the infrastructure and the preparations are not designed properly, they have to be seen as barriers”. This result is consistent with the argument of Alhawiti (2013) and Alwani and Soomro (2010) that the most common factor

contributing to non-use of technology learning is lack of infrastructure. Figure 5-1 illustrates the neglected condition of the language laboratories. By infrastructure teachers meant (i) the condition of buildings and classrooms; (ii) technical support and maintenance; (iii) age of devices and their suitability; and (iv) the role of financial support.

Figure 5-1 Language laboratory with dust on the computers

5.3.2.1 The condition of buildings and classrooms

Two teachers mentioned that the buildings and classrooms do not support the use of technology in teaching because the buildings are old and inappropriate for the integration of technology (Figure 5-2). Abdul-Hakeem, for example, stated:

> We are still at the old building and all the preparations they are working on now, including the electronic smart classroom, are designed only for the education College of Distance Learning and do not relate to the Institute.

Abdul-Hakeem's comment refers to the construction of another building incorporating modern technology, originally scheduled for a mid-2014 opening. The new building contains 10 fully equipped language laboratories. Thus there are definite signs of movement within the Institute towards technology support in teaching but not for teaching pronunciation.

Figure 5-2 A standard classroom

Omar noted that the Institute had recently developed a new classroom equipped with new technology: this was asmart classroom containing an electronic smartboard (also known as an interactive whiteboard or IWB), printer and several computers. Concerning classroom size, three participants mentioned that it was difficult to accommodate a class of around 30 to 40 students in such a small space. Given the size of the student population at the Institute, Abdul-Hakeem pointed out that the current laboratories do not meet the needs of the numbers of students because the Institute has

more than 2000 students and the current laboratories could not service all students and teachers. So even if pronunciation teachers wanted to use the facilities of the language laboratories they could not.

In total, seven participants noted that administrative support of the university and the Institute is required to establish and develop necessary infrastructure in order to prepare and encourage teachers to use technology in learning theories. For them, an e-learning class would facilitate the learning process if it is developed based on the most updated technology within a well-designed and accessible space. These features have essentially been overlooked in current practice and policy.

5.3.2.2 Age of devices and their suitability

According to the teachers, the lack of availability of technological tools led to the limited or non-use of technology in teaching. Four participants emphasised their needs related to new technologies. For example Abdul-Wadood said "I would not use technology and even doubt it could be used as the computers at our institute are so old and don't work". The age of computers was also mentioned by Omar as a reason for not using the language laboratory.

These results reflect the reality of the laboratories at the Institute and technology facilities in classrooms. All the computers in Laboratory 4 were useless because they were out of date. For example, some computers operated on 256 MB of RAM, supported no Adobe programs and had no sound card.

5.3.2.3 Technical support and maintenance

Participants pointed to the university administration along with the Institute's administration as responsible for the scarcity of resources and for regular monitoring of classroom facilities. According to five participants, old and insufficient devices and

technical support were significant factors that contributed to non-use of ICT in teaching. As Abdul-Hanan reported:

> The main problem that we may face is that there is lack of technical assistance in the Institute, so if the device breaks down completely, the teachers will lose all the saved data and information.

Abdul-Samie summed up the current situation by saying "Yesterday we lost about 30 minutes searching for an electric plug (power cable)".

5.3.2.4 Financial support

Financial support was mentioned as an important factor that teachers believed played a role in limiting technology usage. While other changes, such as pedagogy, do not necessarily carry a monetary cost, actual capital budgets must be spent by the Institute to provide the necessary technological tools. Specific budgets are needed to cover expenses required to make the technology available and accessible to all students and teachers at the Institute and costs related to system maintenance. For these participants the barrier of financial cost was mentioned as a challenge to the Institute in relation to integrating technology into teaching and learning. For example, Abdul-Kader believed "The financial cost is a big problem".

In short, the physical and organisational infrastructure as well as financial and technical support was found to play key roles in the limited use of technology in practice. It was found that the Institute currently lacks basic technological infrastructure and as such has missed, up to this point in time, the opportunity to integrate technology into learning processes to teach pronunciation.

5.3.3 Professional development and training in technology

The previous section outlined teacher perceptions of why technology has not been incorporated into the Institute's pronunciation training. This section describes the third theme from the analysis of the teachers' focus group interviews which considers the current technology skill sets teachers possess and those they believe they need in order to use technology for teaching purposes.

The participants in both teachers' focus groups had varying levels of experience in using technology for teaching during their own studying. Abdul-Manan explained how he no longer had contemporary working knowledge of computer technology:

> I learnt about the technology a very long time ago during my bachelor's degree and I have attended many courses on technology. The Master degree's period was the practical technology learning via additional subjects regarding technology.

Two participants studied technological issues in their PhD course. For example, Abdul-Ahad said:

> I studied uses of technology in teaching during my doctoral course, and afterwards consulted specialist staff at my university.

Abdul-Kader, however, said:

> My studies followed the traditional methods, and I knew nothing about technology until I met a researcher when I began to work at the university.

Table 5-1 records how many technology courses the teachers in each focus group had completed together with their personal frequency of technology usage (i.e. computer), not related to teaching requirements. Results show, with two exceptions, teachers have done a minimum of technology courses while all use computers regularly to varying degrees. This evidence of familiarity with computer usage represented by high daily

personal usage and formal training would suggest that the introduction of technology in education at the Institution would not require extensive retraining and therefore teacher 'resistance' to technology might either not exist or is overstated. As teachers are already using technology, familiarisation courses may bring their skills up to appropriate level.

Table 5-1 Technology usage and professional development of teachers

Teachers' focus group member		Number of technology courses	Use of technology outside the Institute
Focus group 1	Abdul-Hakeem	6	Usually
	Abdul-Samie	2	Always
	Abdul-Manan	1	Often
	Abdul-Ahad	1	Often
Focus group 2	Abdul-Wadood	1	Always
	Abdul-Hanan	1	Always
	Abdul-Kader	1	Always
	Abdul-Baqi	1	Usually
	Abdul-Albadee	1	Always

Despite all of the teachers reporting knowledge of technology to some extent and that they were using computers and technology in their private life (Table 5-1), only one teacher, Abdul-Wadood, mentioned that he used his personal laptop for teaching pronunciation. All teachers reported using technology for communication and some of them used it for research purposes. For example, Abdul-Hakeem described his enthusiasm for technology and the frequency with which he used it in his personal life:

> I use it at about 99% because the devices are easy. In the past decades, people used desktop computers but nowadays the devices are smart, small in size, easy to carry and use in various fields such as shopping, studying, selling.

However, participants acknowledged the importance of training courses being provided through the Institute to increase their knowledge of the new technologies to use in teaching. For example, Abdul-Ahad said: "Certainly I need it (training) because it helps in the development of the teacher's performance". Abdul-Manan elaborated saying:

> Yes, we need these courses but before we commence them we should make sure the exact need for them because in general not all courses suit all the people.

It is interesting to note that the group of teachers with Master's degrees had only attended one course but they usually or always use technology (Table 5-1). They used technology in their daily lives such as social media but they had no core use of it for teaching purposes. Therefore, they needed courses about the use of technology for educational purposes to enrich the teaching and learning experience. In contrast Abdul-Hakeem had attended six courses and he usually uses technology. Hence there appears to be an association between professional development and the use of technology.

Extensive training programs were suggested for teachers in using technology for teaching and learning. Abdul-Samie also stated that:

> Yes, I need continuous courses through a whole year but not like the present ones at our university which are few and short courses.

Integrating technology in schools requires comprehensive training before teachers will feel confident using the technology (Almerich et al., 2011; Zhang et al., 2006).

All participants reported that they had not received adequate training required to make the transition from traditional behaviourist pedagogy to a more constructivist-based one. For example, Abdul-Albadee stated "I have attended only one theoretical course regarding how to construct the electronic curricula".

The teachers were clearly aware of the need for more training about information technologies for their teaching practice, and the need to improve their professional competence. Accordingly all of them reported their present use of technology for teaching and learning to be inadequate. For many teachers in this study, the integration of technology across the curriculum would provide them with opportunities to develop their skill and experience to become more competent and productive users of technology.

5.3.4 The curriculum: Content and sequence

The previous sub-section analysed the technology skills currently possessed by teachers and their expectations for training support to enable them to use technology for teaching. This sub-section will present the data on the fourth theme of the curriculum. The results are particularly related to redesigning the curriculum to take into account technology usage.

A curriculum is a planned series of learning experiences which includes consideration of goals, learning outcomes, technology aids, learning and teaching methods, and evaluation (Saadah & Ibrahim, 2004). As the purpose of the Institute is to promote classical Arabic linguistic excellence in the next generation of Islamic community leaders, including *Imams*, its curriculum emphasises subjects specifically aiming to equip learners with the necessary language skills to meet these expectations, such as grammar and pronunciation. Three participants believed that the authorised

curriculum textbook for pronunciation used by the Institute needed to be redesigned and updated based on recent research on teaching and learning pronunciation, as well as the use of technology. Abdul-Baqi, for example, said:

> The curriculum is a common element between the student and the teacher. So the current traditionally designed curriculum is not appropriate for the use of technology. It is not suitable for e-learning.

Abdul-Samie also noted that what was needed was design of curriculum content that accommodates technology and uses it properly.

Despite the need to redesign the curriculum to include the integration of technology, no specific ideas emerged in relation to developing the authorised curriculum to achieve this. Abdul-Kader however did suggest that advice could be sought from other international institutes that had adopted technology into their curriculum.

To summarise the results related to technology use in the learning context, the results suggest there was no actual use of technology in teaching practices or by students in their learning of pronunciation. The Institute's teachers attributed leadership support and ultimate responsibility for decisions to the Institute's administration. Many factors were identified that were related to the Institute and influenced the use of technology in practice. These included educational policies within their political context. The second factor was related to infrastructure in terms of the building's condition, technical support and updating of devices. The third factor related to capacity building and professional development necessary to enable the use of technology in education. The last factor was the need to redesign the content of the curriculum to create a context that integrated technology. The focus group interviews highlighted the administration's failure to fulfil its expected responsibility to

implement the use of technology in teaching pronunciation. The following section looks at the opinions of teachers regarding the potential for technology to enhance learner outcomes.

5.4 Advantages of integrating technology in educational contexts

The previous section discussed the reality of technology usage in the Institute's context and the factors that actually prevent its usage. This section further expands on the third theme of teachers' views about how technology can improve educational outcomes. Even though the participating teachers admitted to using traditional methods themselves in teaching pronunciation, as presented in the first theme (section 5.2), they appreciated the use of technology in teaching because they believed technology could help in supporting teaching and learning. All participants pointed to the importance of technology in learning and teaching pronunciation. They identified benefits, attributes and positive features for using technology in the teaching process. These advantages included:

(i) supporting diversity of teaching methods

(ii) considering individual differences

(iii) achieving better learning outcomes

(iv) encouragement of collaborative learning, and

(v) saving time for students and teachers.

The first advantage was flexibility of technology to facilitate a variety of teaching methods. Four participants reported that the use of technology could effectively and appropriately support and enhance different teaching methods. For example, Abdul-Baqi mentioned that technology can help teachers enhance their pedagogical practices

because technology has the potential to expand the pedagogical resources available to teachers via the internet. In addition Abdul-Ahad confirms this opinion by saying "There are a lot of advantages such as the interesting ways and the diversity of the teaching strategies". This finding highlights the importance of technology use in classrooms which have the chance to assist teachers to achieve educational objectives.

The second advantage indicated that technology caters to individual differences which participants reported, especially where there are many nationalities in the classrooms. Teachers stated it could provide easy and equal access to all students regardless of their background. For example, Abdul-Baqi said "I like the excitement factor and taking care of the individual differences" while Abdul-Hanan added that "Because technology saves time, it actually makes it easier to take care of the individual differences".

Due to the diverse backgrounds of the student population, it can be expected that different attitudes to learning and expectations regarding teaching exist amongst classes which may require shaping of the delivery of instructional practice to produce best results (Felder and Brent, 2005). Because of the existing differences and abilities of students, technology provides an excellent opportunity to deliver a form of teaching with sufficient flexibility to enable each student's needs to be accommodated. Teacher-dominated pedagogies by necessity deliver a 'one size fits all' approach which can only partially accommodate individual learning needs; however technology permits students to move at a different pace from each other and therefore has a flexibility absent from other approaches. Technology-dominated learning individualises learning and provides rapid feedback to students (Lee, 2002; Barakat, 2006; Fang, 2012). Constructivist approaches however require the teacher to create the learning

environment from which students will be encouraged to exploit the opportunities afforded by technology (Jonassen et al., 1995).

According to the teachers' responses, it was also noted that technology could play a part in supporting the teaching and learning process, helping students become more knowledgeable, reduce the amount of direct instruction in the classroom and increase the amount of time available for the teachers to have personal interactions with students with special educational and learning needs.

The third advantage was achieving better learning outcomes. Participants believed technology had the potential to improve students' and teachers' understanding of subject content, and help students achieve improved results. Two participants noticed that watching students' progress using technology would be an important factor for teachers. For example, Abdul-Ahad justified technology by saying:

> The outcomes we are eager to achieve in our classes are our main interest in wanting to use technology. After all any teacher hopes to be an effective teacher who can be satisfied with the results of his work.

Abdul-Manan affirmed this by saying:

> Technology is interesting and allows diversity of teaching strategies, so we find a benefit of using technology on the educational outcomes.

One participant, Abdul-Kader, mentioned that technology has the potential to enhance student achievement and teacher learning by encouraging students' attention: "It attracts students' attention because it contains the excitement factor".

The teachers' focus group interview demonstrated that technology could play a part in supporting teaching and learning processes to achieve better learning outcomes for students in pronunciation. The teachers' perspectives were similarly reflected in the

findings of Tsao (2006), Yunus et al. (2009) and AbuSeileek (2007) which were discussed in Chapter 3. Each of these researchers identified technology as a means of improving student learning outcomes.

The fourth advantage was encouragement of collaborative learning. Based on responses of three participants, a potential benefit of using technology in education was identified as the encouragement of collaborative learning among teachers and students. Teachers believed the use of technology in learning could enable enhanced interaction among students themselves as well as between teachers and students. For example, Abdul-Hanan stated:

> Technology allows teachers to communicate with the student anywhere and changes the position of teacher from controller to guide. Moreover, I like technology because it can be considered as a helpful tool for communication with a big number of people and also it's an interesting tool.

Abdul-Ahad also commented on the use of technology in changing student-teacher communication strategies stating:

> There are a lot of advantages of integrating ICTs into education such as the interaction between the student and the teacher.

This result shows that technology can facilitate the interaction between students and teachers. It could mean that adoption of constructivist approaches is an easy way to construct and create effective teaching. This result is consistent with Anwaruddin's (2013) results which found that the introduction of extensive technology usage into a tertiary language teaching class promoted collaborative learning in the classroom environment.

The final advantage of utilising technology which teachers commented on was saving time. Six participants mentioned that new technologies may help students and

teachers save their time and increase their engagement in learning. Saving time was also noted as a potential advantage to help cater for the large number of students. Abdul-Hanan added that "Because technology saves time, it actually makes it easier to take care of the individual differences".

These results point to the benefits of using technology in teaching pronunciation. It would appear that using technology can positively support innovation which may result in other benefits by permitting teaching method diversity. Technology enhances student learning and pronunciation ability by accommodating individual differences while providing teachers with a tool which permits them to individualise the delivery of teaching. Because technology supports and promotes collaborative learning it can save time for both students and teachers. However, in order for technology to be beneficially employed in teaching Arabic pronunciation, barriers preventing its usage must be overcome. The following section discusses these barriers which prevent technology's integration into classroom practice.

5.5 Barriers to technology integration in teaching and learning

This section presents the results of the fourth theme identified which is barriers that teachers in the focus groups identified as influencing technology integration. Despite the teachers' positive views of the use of technology in learning, they also identified a number of barriers apart from those mentioned in the second theme (section 5.3). These barriers related to student background, health issues and resistance to change.

The first barrier that teachers noted was the students' background. According to three participants, the issue of various student backgrounds was a possible barrier they

could face, including those related to their students' ability and approach to technology. The participants mentioned that students' familiarity with advanced educational technologies or procedures could limit the use of technology in learning. For them a class consisted of many students from different backgrounds in terms of language, culture and different levels of technological knowledge which could influence their use of technology. For example, Abdul-Ahad mentioned:

> I can't say these are disadvantages; I call them problems, like technical breakdowns. And the students do not have a consistent level of understanding and use of technology.

Because of differences in students' backgrounds, Abdul-Kader believed that too much reliance on technology made students passive consumers of education instead of being active knowledge gatherers and productive participants in learning activities. Used in this way when viewed from the prevailing direct method approach used at the Institute, Abdul-Kader appears to be predicting that technology effectively replaces the role of the teacher as active dispenser of knowledge to students who are the passive recipients of it.

The second barrier was associated with health issues. For example, Abdul-Baqi and Abdul-Albadee added that there could be some health problems associated with using technology which needs to be taken into consideration at a higher level, without detailing any specific health issues. It is not clear exactly what problems these actually were; however there is a perception that computers are not healthy. For example, people in general can believe computers are harmful to the eyes, neck and back.

There is no doubt that technology is developing rapidly. This results in the necessity to update technological knowledge with refresher training in order to utilise the technology fully. Three participants pointed to attitudes of resistance to change or a

barrier to the use of technology in education and consequently the maintenance of traditional methods in teaching pronunciation. In particular, these teachers reported that the administration department does not believe that the integration of new technologies in teaching can be supported, guided or rewarded. Abdul-Baqi reported:

> The technology does not work efficiently, because the administration may believe that the traditional education is best.

While any educational institution has a definite complexity, change in one area may well imply change somewhere else. Where the administration does not have a complete and viable concept of education, adapting to changes generated by the integration of technology is bound to be problematic. As Abdul-Kader said:

> With technology, you need to understand every new product because technological change is rapid and creative.

In addition teachers themselves may resist technology as Abdul-Kader commented:

> Some teachers are very old and they haven't any desire to learn modern methods. They resist change.

These results indicate that effective integration of technology may require overcoming a lack of student knowledge about using technology inside and outside the Institute. It may mean solving certain health issues and it may mean overcoming the resistance to change shown by some teachers.

5.6 Conclusion

Arabic is the unchanging vehicle through which the Islamic faith is transmitted. Determination to maintain the purity of Arabic language proficiency understandably arouses suspicion from those opposed to challenging traditional language teaching

methods. However, policy decisions relating to education by Saudi Arabia's government are embracing change, through its stated ambition to promote a technology and knowledge-based economy. Such changes have been substantially supported by teachers of classical Arabic who see the advantages of technology. Nevertheless the teachers' focus group discussion documents the university administration's reluctance to accept change and while the teachers support the integration of technology they additionally lack resolve and action. However, this study did not interview administration personnel to gather their opinions concerning technology or pedagogy, so administration was judged on its actions as experienced by the teachers in the focus groups.

From the analysis of the teachers' focus group interviews, four themes were deduced. The first of them related to methods of teaching pronunciation. The results found that teachers continue to use traditional methods with no use, or minimal use of technology for educational practice taking place.

The second theme was technology use in the learning context at the Institute. The teachers mentioned that the administration played a key role in the lack of adoption of the use of technology in educational practices. This lack of support from the Institute's administration was evidenced by their failure to provide infrastructure and their continued support for traditional teaching methods which remain the predominant approach used despite acknowledging better methods are likely to be available.

The third theme was the perceived benefits of technology, which according to the teachers in the study, related to strengthening the role of technology in teaching pronunciation. They believed that integration of technology could empower teachers

and students, promote changes in pedagogy, and foster the development of e-learning, despite an array of obstacles present at the Institute. They were clearly aware of the need for technological inputs in teaching in order to improve their professional competence, and all of them considered their present level of ability in the use of technology inadequate.

The final theme related to barriers that affected the integration of technology into teaching which were identified as students' backgrounds, health issues and resistance to change. It could be argued that teachers noticed that any pedagogic effect stemming from technology use requires an understanding of all contextual factors as well as comprehending the potential impact of technology in learning. The participants saw the Institute's context influencing the integration of technology in teaching.

In Chapter 6, the results of the action research based on my reflective journal are presented. Upon analysis, two major themes were identified. They were changing teacher practices which included pedagogical expectations, learning space and reaction by students, and improving learning which encompassed student needs, curriculum design and learning outcomes.

Chapter 6:
Action Research Phase

6.1 Introduction

The chapter presents the results of the action research recorded in the reflective journal which matches the learning journey that both students and I experienced and concludes with details concerning the pre- and post-test results where student learning outcomes were measured.

During the study I kept a daily reflective journal as a hard copy where I recorded relevant observations, comments and reflections throughout the course of the study. The journal allowed me to describe the participants' perspectives and experiences and also document my own direct participation during the study. The journal required me, in the role of the study's teacher-researcher, to reflect upon my teaching and the learning process in the laboratory class. The journal consequently documented insights into the learning experiences as they happened. I recorded my reflected observations on what was occurring and problems encountered by students and myself during class instruction. I recorded the students' experiences in hard copy form for later analysis and codification in order to determine if and how the interventions had an impact on the overall or individual learning efficacy of students in the laboratory. The reflective journal together with pronunciation tests provided data on the new method of teaching Arabic pronunciation to answer the research questions:

(i) How does a technology-enhanced constructivist learning approach influence students' pronunciation of Arabic?

(ii) What were students' responses to a technology-based constructivist approach to learning Arabic pronunciation?

Five main themes based on the analysis of the journal will be introduced. The first theme is learning space which encompasses pedagogical expectations. The second theme is meeting students' needs and consists of two sub-themes: (i) curriculum design and (ii) student access to technology for learning purposes. The third theme is pedagogical insights which also have two sub-themes: (i) student attention and enthusiasm and (ii) collaborative learning. The fourth theme is students' suggestions for learning pronunciation which is divided into three sub-themes: (i) connecting pronunciation to comprehension, (ii) internet usage for learning and (iii) increasing class frequency. The fifth and last theme is students' test results.

Data from the pre- and post-tests conducted between action research cycles is also included in this chapter because the test cycle was embedded in the action research phase of the study. The results suggest improvements to students' learning outcomes occurred during the implementation of the action research cycles.

In the following section the first action research theme concerning the physical learning space and its corresponding pedagogical expectations will be addressed.

6.2 Learning space

This section discusses issues arising from the physical teaching environment of the classroom which flowed over into pedagogical expectations. Before conducting the study, I had to select the most appropriate laboratory to use. From the four available laboratories laboratory 4 was selected because it had 40 computers as well as an overhead projector. In spite of the avowed importance of technology in the teaching process as outlined in Chapter 3 (Alzu'bi & Sabha, 2013; Levy & Stockwell, 2006; Arnold et al., 2009) a significant challenge for myself was overcoming technical

problems both before commencing the study and during its implementation. Before conducting the study, all the computers in this laboratory needed to be upgraded to enable the installation of the pronunciation software because the laboratories had not been used for many years. For example, the RAM for all computers was only 256 MB, none had Adobe programs installed and there were no sound cards for most computers.

During the intervention of the study, I observed problems for students when they tried to make voice recordings using the microphones and using the headphones because the equipment was old and problematic. I had to replace the old equipment by buying new microphones and headphones. This meant that I had to take responsibility for teaching resources in order to use the technology provided by the Institute, otherwise its use would not have been possible.

The technical problems that emerged during the implementation of the intervention showed that infrastructure and resources at the Institute were insufficient to support a technology-enhanced constructivist approach to teaching and learning. A similar result was found by Alwani and Soomro (2010) who identified the need for leadership from administrators before technology was introduced into teaching. Thus, a lack of infrastructure supports the claim that the administration of the Institute had not fulfilled their responsibility to maintain language laboratories, a fact also noted by the teachers in the focus group interviews (see Chapter 5).

6.2.1 Pedagogical expectations

In terms of pedagogical expectations the analysis of the data from the reflective journal revealed that students initially expected learning to occur in the classroom instead of the language laboratory.

According to my experience as a language teacher and the fact that the language laboratories had effectively become obsolete and consequently rarely, if ever, used I expected the students to be confused regarding attending the laboratory, which indeed proved to be the case. In class 1, I went to the normal classroom to remind students that the class was to be in the language laboratory instead of the classroom because the students were accustomed to studying there and only there. As anticipated none of the students had attended the laboratory and all were present in the normal classroom.

I expected the students to be surprised at using the language laboratories rather than the classroom, and this indeed proved to be the case. Despite being told that all further classes would be held in the laboratory rather than the classroom, for the week 2class a group of students were waiting outside the classroom expecting to be taught there, as 'normal'. Student unfamiliarity with the laboratory learning space and actual expectation that teaching would be in the classroom rather than the laboratory suggested disbelief that teaching could be held anywhere other than a traditional classroom. The group of students' absence from the laboratory was remedied when a student was sent to fetch the absent students, after it was accurately assumed where their missing classmates might be.

It seems possible that the confusion over the classroom location for teaching was due to most students not adequately understanding my instructions at the introduction meeting about the project's aims before conducting the study. Consequently many students may not have understood that they would be studying in the laboratory.

Another possible explanation for the result may be the differences in the students' backgrounds. Some of them seemed to have no knowledge about the

technology because a few of them asked me what a computer was. This indicated that a few students were unfamiliar with using technology for learning which may be a barrier to technology-enhanced learning. Alternatively it is possible that they did not know the term 'computer' or 'laboratory' in Arabic. This interpretation of their question may be explained by the fact that there was a lack of awareness of technology use in the Institute generally and in particular the laboratory. The teachers also mentioned in their focus group that they rarely used technology in their teaching. No student ever mentioned having studied in any laboratory at the Institute, likely because the perpetuation of traditional teaching methods effectively made the existing facilities superfluous.

The following section will explore the second theme of meeting student needs in regard to curriculum design and providing access to technology.

6.3 Meeting students' needs

The previous section outlined the action research journal's first significant theme, that of learning space and how it was a challenge to myself and initially to students. My observations during the intervention showed me that the students' needs were realistic and the resources available meant their needs were actually able to be met. In order for the students to achieve better results, the next section will discuss i) curriculum design and ii) access to technology for pronunciation practice.

6.3.1 Curriculum design

The first sub-theme in improving practices for pronunciation classes to meet students' needs identified in the journal focuses on the design of the curriculum. I observed that students independently went onto other topics that had yet to be introduced during the

teaching and learning action research cycles. For example, students independently studied the topic of sounds of letters which were similar, which was actually a topic taught from week 3 in the action research cycle. While the first and second class were limited to the long and short movements to pronounce the letters, as well as alphabet learning, student familiarity with these meant they moved ahead to other parts of the authorised curriculum as laid out in the textbook to study consonants they knew they had difficulty with. This demonstrated the need to redesign the curriculum because some topics were easy and did not require to be taught because students already had prior knowledge gained from their Islamic background and their basic knowledge of the Arabic language through learning and reading the Qu'ran for devotional purposes.

The sample conversation between the students and myself undertaken in the laboratory demonstrated that they were only focusing on the letters themselves. Moreover the pre-test results showed all mistakes were in difficult letter-sounds and none of them made a mistake in long letters or short letters. The study in-class plan was thus modified and changed to focus more on difficult letters instead of teaching all topics (Table 6-1).

Table 6-1 The study plan

Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
(ʕ-ع) (h-هـ) (s-س) (θ-ث)	(h-هـ) (ħ-ح) (ðˤ-ظ) (Z-ز)	(t-ت) (tˤ-ط) (s-س) (sˤ -ص)	(ʃ -ش)(s-س) (K-ك)(q-ق)	(ɣ -غ)(x-خ) (ʃ -ش)(dʒ -ج)	(dˤ -ض)(d-د)
Class 9	**Class 10**	**Class 11**	**Class 12**	**Class 13**	**Class 14**
(ʕ-ع) (h-هـ) (s-س) (θ-ث)	(h-هـ) (ħ-ح) (ðˤ-ظ) (Z-ز)	(t-ت)(tˤ-ط) (s-س)(sˤ -ص)	(ʃ -ش)(s-س) (K-ك)(q-ق)	(ɣ -غ)(x-خ) (ʃ -ش)(dʒ -ج)	(dˤ -ض)(d-د)

The plan included eight difficult letters of the Arabic language including letters with similar (analogue) pronunciations such as the letters (ق-q) and (ك-k), which in total comprised 15 letters. These two letters between brackets are quite similar in pronunciation since they are produced from the same organs of the tongue. The authorised curriculum was designed based on the similarity of some letters' pronunciation. The last chapter of the authorised curriculum identified these letters and nominated them to be taught together to enable learners to discriminate between similar sounds. Each class concentrated on two letters which were similar in pronunciation. For example (ض-dˤ) and (د-d) were taught in one class because the sound (Dad) was one of the most difficult letters to pronounce because it is quite similar in pronunciation to the sound (Dal). Therefore, the class focused only on these two sounds to give students more time to practise them. Table 6-1 shows which combination of letter-sounds were taught in specific class weeks during the study. Note that the same letter may be covered in more than one class. For example, the letter (هـ/Ha) was covered in classes 3, 4, 9 and 10, because of its similarity to several other letters.

6.3.2 Access to technology for pronunciation practice

The second sub-theme to be identified was access to technology for pronunciation practice, specifically the use of cassette tapes instead of CDs. The nature of the Arabic language course for non-native speakers at the Institute inevitably drew students from a broad range of backgrounds including developed, developing and third world countries. While my original plan was to provide CDs for home practice, my observations revealed that familiarity with current technology was usually dependent on the student's country of origin and his financial background. Some students did not

have computer equipment at home while they did have cassette players so I made all practice lessons available on cassette tapes in addition to CDs. Without the provision of the older technology in the form of cassette tapes from week 11, students without CD players would have been educationally disadvantaged as they would have been prevented from continuing their studies at home while students with CD players could have conducted extra after hours study. As validation that this strategy was effective it was observed that a majority of students did actually take the cassette tapes instead of CDs. In order for the study to achieve its goal of assisting students through technology, it became apparent that the type of technology needed to be accessible for them. Therefore, because many students apparently had varied access to modern technology it was necessary to provide what many would regard as an obsolete aid; that is, cassettes.

In the following section, the third theme of pedagogical insights will be presented focusing on the form of student engagement and collaborative learning opportunities.

6.4 Pedagogical insights

While the previous section dealt with meeting students' needs as a means of facilitating the learning of pronunciation, this section addresses the third theme, pedagogical insights, which involves the two sub-themes of i) students' attention and enthusiasm and ii) collaborative learning.

6.4.1 Attention and enthusiasm

In regard to attention and enthusiasm, upon entering the laboratory students' facial features expressed surprise and pleasure which they displayed by smiling which they

normally did not do. Some students examined the laboratory closely, clearly unfamiliar with the technology, having never used or even seen it before. Despite the age of the computers many students were surprised to be using them for the first time in their lives, which they mentioned in subsequent classes.

Student attention is an important part of managing the classroom with a range of strategies available to maintain student interest and engagement. An example from class 2 supports this claim. At the end of the class I observed that an African student remained sitting, recording and listening to the recorded topics. I observed him taking active responsibility for his own learning. His actions demonstrated his interest in the strategy because he spoke to me enthusiastically about the pronunciation software and said it helped him in his memorisation and improvement of Qur'anic verse recitations by enabling him to endlessly repeat recordings and hear his own pronunciation of them.

The above case gave me a deeply satisfying impression that this student benefited from this strategy and he expressed this feeling also non-verbally by smiling. Furthermore, I discovered the benefit of the software for students, especially for improving their accuracy in pronunciation, their memorisation skills and reading of Qur'anic texts.

The reaction of the students was also observable during the second action research cycle where a YouTube video was utilised to support student learning. Students were silent during the first time it was played. They watched the screen display and no one spoke at all. In addition some students were trying to imitate what they were watching on the screen so as to recognise exactly how to position their mouth and throat to pronounce the letters correctly, as demonstrated during the playing

of the video. Student interaction with the educational video was an example of how technology can lead to improvements in education (Zhang et al., 2006).

Smyrni and Nikopoulos (2010) also found that the use of short video-based lectures was effective as a teaching methodology. Their study showed video improved students' attention during a lecture and encouraged them to focus on class content.

It could be argued that audiovisual technology added a dimension to the learning process that engaged the students' senses of hearing and sight. The students' enthusiasm was represented by their attention. Their focus was on carefully watching the screen and they requested to play the video again at the end of the presentation.

6.4.2 Collaborative learning

Students also reacted to the changes in teaching practices and use of technology by developing and creating their own learning environment which was consistent with their learning needs. I observed many students grouping with each other, as well as those who chose to practise their own pronunciation independently. The groups consisted of either two or three students. Each student in the group recorded their voices and every other student listened to their partner's voice as a collective training for correction. These pronunciation practice activities corresponded with the features of a constructivist classroom which was enhanced through collaborative learning. I observed that students spontaneously undertook studying in groups without me suggesting or urging them to study collaboratively.

During my previous experiences of teaching pronunciation over the years, collaborative learning had not occurred before nor had it ever been student-led. I believe that the independent formation of study circles by students rarely, if ever

occurs during the traditional approach to delivery of the curriculum. While I was primarily focusing on how to deliver the lesson, students themselves spontaneously formed their own informal learning groups, which was evidence of collaborative learning in action. From my experience as a language teacher I believe the formation of these organically formed study groups can be explained in two ways: i) learning and helping each other and ii) overcoming shyness.

In this study collaborative learning provided the opportunity to feel successful through discussion, and to put forward ideas and for students to discover for themselves new ways of learning. Moreover, the collaborative learning environment can assist students who are shy (Ezeanyanike, 2013). Finally from a pedagogical perspective groups facilitate collaborative learning through encouraging interaction between teachers and students and amongst groups of students. In so doing students were not mere recipients of information but assisted in constructing it themselves. Pallof and Pratt (2005) describe how collaborative classrooms promote student interaction as a social path to learning. Students in my class reacted similarly through their own decision about how to learn in the class.

In the following section the next principal theme from my reflective journal on students' suggestions for improving the teaching of pronunciation will be discussed.

6.5 Students' suggestion for learning pronunciation

The previous section discussed the pedagogical insights arising during the intervention and this section deals with the fourth theme of students' suggestions relating to improving learning pronunciation. Students in this study pointed to some significant changes which would possibly help students improve their pronunciation. These

changes were i) connecting pronunciation of words to their learning, ii) using the internet to assist learning and iii) increasing the number of classes.

6.5.1 Connecting pronunciation of words to their learning

Learning a second language is a complex and difficult process which differs from learner to learner (Ipek, 2009) with understanding the meaning of new words part of the process. As a result, it was apparent from the students' questions in all 14 classes that there was a common concern among students to understand the meanings of words, not just reproduce the sounds. In the course of this research there were generally two reasons for students asking that meanings of specific words be explained to them. First, students at the Institute had only been studying for four months so their vocabulary in many cases was understandably limited. Second, an objective of teachers was to expand the vocabulary of learners so educators were strategically pushing the boundaries of current knowledge beyond what was known, thus prompting students to ask for the meaning of new words and unfamiliar phrases.

To address this problem, I provided explanations for the meaning of new words. For example, I explained the word's meaning for students who spoke English by giving them the matching word in their native language. Whereas for the students who were from different language backgrounds, I endeavoured to explain the meaning of 'easy' words as much as possible through body language or sometimes I encouraged students from the same language background to help me with the explanation. As a result during the class students suggested adding pictures to the pronunciation software to clarify a word's meaning. The fact that some students were able to be helped because I and others in the class spoke English, while others, such as the Chinese students were unable to be helped in this way, as I did not speak Chinese, is an

example of students not being on a level playing field or being deprived of educational justice. While diagrams have some advantage, they are not practical as it cannot always be anticipated which words will require explanations and many words cannot be represented visually in an accurate manner, for example ‘weekend’.

6.5.2 Using the internet to assist pronunciation

Many pronunciation teachers are employing internet-based materials as a substitute for traditionally printed materials, such as course information and activities (Hismanoglu & Hismanoglu, 2010). Students in my class also suggested using the internet as a means to enhance their knowledge and experiences. Student access to the internet would help in delivering educational justice, as students would be able to instantly look up unknown Arabic words in their own language, in cases where the teacher could not assist. For example, many students, such as the Chechen student, were the only one from that language group, so were effectively unable to ask anyone for extra help as no one else spoke Chechen. In cases like this, students would be able to refer to information on the internet for assistance.

As previously mentioned, the internet had not been available in the laboratory to assist either students or teachers to solve problems associated with understanding word meanings. This was an important issue because if the internet was available, the students could have accessed online dictionaries. Digital aids such as electronic dictionaries, language texts and YouTube tutorials not only potentially help students quickly overcome learning obstacles but could also promote independent study, particularly outside the classroom and after school hours. The students’ suggestion therefore recognises the flexibility of online learning beyond the classroom because it allows students to study anywhere they want and provides them with additional

opportunities to practise, beyond the limited classroom times allocated by the Institute (Davis, 2013).

6.5.3 Increasing the number of classes

The third suggestion made by students was a request for more than a single pronunciation lesson per week, commenting that this would be beneficial for them. Students stated that given the importance of pronunciation more time should be allocated to this class and urged this matter be taken into account by decision makers. However, the responsibility concerning increasing the number of classes was outside my jurisdiction as the teacher-researcher, as it resides with the Institute's administration.

To summarise, this section presented students' suggestions which included teaching word meaning in conjunction with pronunciation, internet usage for learning and increasing the number of classes. The next section presents information about student progress as measured through their declining number of errors across the four tests.

6.6 Students' test results

The final theme related to the action research phase is described in this section which presents a comparison of students' test results based on their pronunciation errors. The results can assist in determining student progress, and the effectiveness of the intervention.

Prior to the commencement of the study students were tested in order to set a benchmark to gauge their progress and also the effectiveness of the classroom

intervention. Error scores consisted of mispronounced letter-sounds in words presented in the test. The pre-test was made up of students reading a series of words and a short test chosen because they contained the specific difficult to pronounce letter-sounds. For every mistake one error was recorded. Because some words contained several difficult letters it was therefore possible for students to record more than a single mistake from the same word, which did occur.

As anticipated the pre-tests recorded a significant number of student errors and in the three following tests mistakes declined, reflecting improvements in student pronunciation prowess. The number of errors in the pre-test 1 letter-sounds amounted to 104 errors. In comparison, the number of errors in post-test 4, the final test, reduced to 33 mispronounced letters which means a significant decline in the number of errors from 104 to 33. In regard to the paragraph test, the number of errors in pre-test 1 was 76 errors, while post-test 4 revealed a considerable decline in the number of errors to 19. While students recorded collective improvements, individual students also achieved personal improvements in almost every case.

For example, Mohannad's subtotal for errors in the pre-test in the letter-sounds and paragraph reading was 10 errors. After the intervention his errors dropped to only three errors in both parts of the test (Table 6-2).

Table 6-2 Number of errors in pre-test 1 and post-test 4

Student name	Pre-test 1		Post-test 4	
	No. word errors	No. paragraph errors	No. word errors	No. paragraph errors
Abdelkader	1	0	0	0
Abdulaziz	1	0	0	0
Abdul-Jabbar	1	1	1	1

Student name	Pre-test 1		Post-test 4	
	No. word errors	No. paragraph errors	No. word errors	No. paragraph errors
Abdullah	3	3	1	0
Abdulrahman	4	5	1	2
Abu baker	2	2	1	0
Adel	3	2	3	1
Ahmed	4	4	2	1
Ali	5	2	1	1
Ammar	4	3	1	0
Baseel	4	4	3	1
Bassam	0	0	0	0
Bilal	4	2	0	1
Eid	5	5	4	2
Fadi	4	2	0	1
Ghazi	4	3	1	0
Hashem	4	3	0	0
Jassim	2	0	1	0
Khaled	3	4	1	0
Mahmoud	3	5	1	0
Mohammed	3	2	0	2
Mohannad	5	5	2	1
Nabeel	4	4	3	1
Najeeb	3	0	0	0
Nawaf	5	2	2	2
Nayef	4	1	2	0
Noor	3	2	1	0
Omar	4	3	0	1
Othman	3	1	0	0
Saad	1	1	0	0
Salman	4	2	1	1
Samir	4	3	0	0
Totals	**104**	**76**	**33**	**19**

Moreover, the study recorded 44 errors in post-test 2, while the number of errors in post-test 3 reduced to 20 errors in comparison to post-test 2, which indicates the presence of significant improvements. Therefore, in general it could be said that there were explicit differences between the students' errors in the intermediate tests (2 and 3) with five words as demonstrated in Table 6-3.

Table 6-3 Number of errors in post-tests 2 and 3

Student name	Errors in post-test 2	Errors in post-test 3
Abdullah	3	2
Abdulrahman	3	2
Adel	2	1
Ammar	3	1
Baseel	2	2
Bilal	3	0
Eid	4	2
Ghazi	3	1
Mahmoud	3	1
Mohammed	1	0
Nabeel	3	2
Nawaf	3	1
Nayeef	3	2
Noor	3	1
Saad	2	1
Samir	3	1
Total errors	**44**	**20**

However, it has to be acknowledged that improvement in these test results cannot entirely be attributed to the study's intervention or a change in pedagogy. As there was no control group being measured who were taught using traditional behaviourist methods, it is not possible to determine exactly how much of the improved scores were due to the study's approaches. It can be assumed students' learning through traditional

methods also register improved results during the semester, but I believe that this study's approaches exceeded them.

This section described the learning improvements of students based on student pronunciation errors across the action research phase as recorded in four tests. It is a measure of their abilities and a record of their progress.

6.7 Conclusion

This chapter has laid out the main results from the action research phase of the study drawn from my reflective journal which was used to document observations and events relevant to the study and the pre-test/post-test phases of the action research. Five specific themes were identified which were each further divided into sub-themes. The first theme concerned learning space and consequent pedagogical expectations. The second theme identified was associated with meeting students' needs and was further divided into the sub-themes of curriculum design and student access to technology. The third theme of pedagogical insights consisted of the sub-themes students' attention and enthusiasm and collaborative learning. The fourth theme derived from my reflective journal related to students' suggestions which were broken up into the three areas of connecting word meaning to word pronunciation, internet connection for learning purposes and increasing the number of classes. The last of the five themes was the data from the tests which recorded student errors, demonstrating an improvement in their learning outcomes.

In the following chapter the results from the students' focus groups will be presented in order to further provide evidence to answer the research questions of this study.

Chapter 7:
Students' Focus Groups

7.1 Introduction

This chapter presents the findings from the students' focus group data. Data was collected from two focus groups following exposure to technology-based pronunciation teaching during the course of one full 14-week semester. The purpose of the focus group was to gather information aimed at supplying answers to the research questions:

(i) How does a technology-enhanced constructivist learning approach influence students' pronunciation of Arabic?

(ii) What were students' responses to a technology-based constructivist approach to learning Arabic pronunciation?

Four themes were identified from the analysis of the two students' focus group interviews. The first theme related to how technology increased interest and engagement in learning. Through this theme further analysis provided reasons that reinforced students' positive attitudes to learning.

The second theme covered five different areas divided into sub-themes relating to separate student pedagogical insights. The first sub-theme was learner determination to hear authentic classical Arabic speech wherever possible. The second sub-theme was a strong preference for collaborative learning. The third sub-theme was student assertion that technology supports different teaching methods, and in particular that it was ideally suited to meeting individual learning needs. The fourth sub-theme was students believing that their pronunciation performance needed consistent monitoring

and assessment. Finally, the fifth sub-theme concerned student recognition that it was important for teachers to design the learning sequence for pronunciation so that they could work together with the students.

The third theme was students' suggestions for improving learning and teaching, divided into seven categories. Student suggestions fell into the following categories: i) curriculum content adjustment, ii) recruiting more qualified teachers, iii)earlier pronunciation teaching, iv) integration of videos and images, v) practising pronunciation with the Qur'an, vi) asking in-class pronunciation questions on a regular basis and vii) integration of writing with pronunciation learning.

The fourth and final theme identified in the students' focus group interviews related to the availability of technology within the Institute and access to it. In particular this concerned two areas: (i) the Institute's infrastructure and system maintenance; and (ii) student access to technology in the learning environment.

7.2 Technology increases interest and engagement in learning

This section explains the first theme related to technology increasing interest and engagement in learning. According to eight students the technology-based strategies not only improved their pronunciation and helped them achieve learning goals, but it also increased their interest and enthusiasm for learning. This result is consistent with Anwaruddin's (2013) findings. For example, in this study, student Ali indicated that he was happy with the use of technology as a basis for learning pronunciation and stated that "I feel that I'm happy with using technology because it is not boring".

Likewise Ahmed reported:

> Using technology in the laboratory has encouraged me to attend pronunciation classes because it is not boring like traditional class. Even when I am absent from a lecture in a class, technology can help to practise in the laboratory individually. So the activities that are held in the class, I can do them in laboratory without attending a normal class.

All students were consistently positive about the impact of technology on their learning. They reported that the most pronounced impact of technology in teaching and learning activities was that they could understand and discuss the content of the curriculum, course materials and ideas and hence achieve better outcomes. Abdullah stated:

> Learning based on technology is more practical because I have the chance to practise anytime and anywhere even without a teacher being present and that you can repeat the words and learn from your mistakes. Then it becomes easy for you to find out what you really want to know.

Abu Bakr testified to personally benefiting from the pronunciation classes which he enjoyed attending as did Ammar who said:

> This method of learning is very interesting and exciting because the videos have shown us how to pronounce Arabic consonants.

The use of technology in education, in the students' view, clearly had the potential to bring about changes in methods of teaching. They could see that new advances in education technology had made learning Arabic as a second language, specifically with regard to pronunciation and vocabulary, a much more achievable goal. Six students pointed to the positive influence of using various teaching methods in their learning process. For example, Ali mentioned:

> The teaching can be carried out by different methods and we shouldn't concentrate only on one method such as the learning in the classroom.

Half of the students connected their own enthusiasm for technology to its ability to assist them in their learning, particularly in constructivist approaches which share little similarity to the teacher-dominated, textbook-guided traditional approaches which predominate at the Institute. Abdullah summed up a widely shared belief concerning technology's replacement of physical books and its possibilities:

> These days, students tend to be actively engaged in technology. They do not have to carry their books or read books; they prefer using computers because it makes things easier for them. Now by learning how technology works, it is easier for me to pronounce some words in new ways because we get involved in the lesson. If not, I might come out with (kaf ك) instead of (qaf ق).

The reoccurring reason for increased enthusiasm by students was the control it gave them over their own learning processes. Eleven students noted that the curriculum content and course materials were better delivered in a classroom using technology-based learning compared with a traditional one. Mohannad, for example, said:

> Using technology was good in particular during this time because of the availability of technologies and information.

Eid agreed, stating in relation to technology "I feel it is a better strategy than the traditional one".

This belief was also verified during the focus group, as students exhibited greater engagement in learning pronunciation because of the technology introduced during the action research phase. Students enjoyed using the technology which they found 'interesting' and held a universally positive attitude towards it, as displayed in some students suggesting class times should be extended. Students preferred technology usage for pronunciation rather than relying on the authorised textbook and drilling methods which some described as 'boring'.

This section discussed students' rising interest and engagement levels resulting from using technology in class while the following section will discuss the second theme from the analysis of the students' focus group interviews, that of pedagogical insights.

7.3 Pedagogical insights

The previous section recorded that rising student interest and engagement levels were connected to the introduction of technology which they enjoyed using in conjunction with collaborative learning practices. This section addresses pedagogical insights students mentioned which cover the five areas of: i) the desire to hear a 'native' speaker, ii) collaborative learning, iii) technology to support teaching methods, iv) consistent performance monitoring and assessment of pronunciation and v) designing the learning sequence. The section highlights student responses to the intervention, which utilised constructivist approaches, while also retaining elements of behaviourist methods to which students were accustomed.

7.3.1 The desire to hear a 'native' speaker

Classical Arabic, as the language of the Qur'an, is the devotional language of Islam and must be pronounced with exactitude and precision. Omar expressed his belief that it is important to study "With a native speaker who speaks classical Arabic".

There are many varieties of colloquial Arabic, but 11 out of the 12 students interviewed preferred working with native speakers who they believed would enable them to acquire an optimal pronunciation of classical Arabic. Abu Bakr stated:

> It is best to work with a native speaker of Arabic whose classical Arabic will assist me in the correct reading of the Qur'an.

The justification for learning to pronounce classical Arabic with precision may be because the students know that the Arabic language is a devotional language and they know if anyone wants to be an *Imam* in the future he must recite the Qur'an correctly. Quite simply if he does not pronounce the words with a high degree of accuracy he may not be hired; therefore, students are aware of the importance of mastering correct pronunciation and so would prefer to work with a native speaker.

While Eid preferred a native speaker he indicated that most native speakers outside the university do not use classical Arabic. Ammar and Abdullah shared a common view about working with a native speaker with Ammar stating:

> My choice will be the native speaker because Arabic is his first language. So, I benefit from him. But our main problem is that if we learn Arabic from the public people in the street, definitely, we will face the problem of colloquial Arabic.

This problem is common to daily life, for example people employed in customer service and shopping centres are accustomed to speaking with non-native speakers who may make grammatical and pronunciation errors. They understand their customers and may reply in a similar lower level of Arabic sophistication. However, students know there are benefits present in the right language environment and Nawaf stated:

> Every person who wants to learn another language, he/she should live in the language environment and interact with the native speakers in their country.

According to the students, they believed imitating native speakers would assist to improve their pronunciation because native speakers are more familiar with Arabic pronunciation compared with non-natives speakers.

7.3.2 Collaborative learning

All the focus group students believed that collaborative learning would produce positive results for learning pronunciation. For the students, group work versus individual work encouraged learning between them, provided support and resulted in the improvement of learning. In particular, students in this study valued the importance of working cooperatively to learn Arabic pronunciation. They noticed some educational benefits in group work including: the enhancement of student learning, effective utilisation of the teacher's time and higher levels of achievement. For example Ahmed said:

> I preferred to study in groups because there might be a good student in that group from my home country to teach me how to pronounce Arabic well.

However, for Omar, the benefit of working in a group related to academic achievement and he said:

> I would like to study in groups because I benefit from good students in the group and some students feel shyness when he speaks in front of students.

Justifications for studying in groups, according to the students, can be categorised into two areas: (i) learning and helping each other in correcting their mistakes; and (ii) improvement in academic achievement. The result is similar to Pattanpichet's (2011) study that aimed at examining the impact of collaborative learning on tertiary students learning EFL. They found that there were positive results in regard to oral skills in addition to improvement in students' attitudes towards collaborative learning.

Based on the analysis of the students' focus group interviews, collaborative learning was held to be a great benefit in developing students' pronunciation and creating a positive learning environment. It presented an opportunity for students to

feel successful through discussion and interaction, and to put forward ideas and new ways for learning. Moreover, they believed that working in groups assisted students who were shy. According to Ezeanyanike (2013, p. 93): “Shy students will participate more with their peers in small groups than in a large class and they too can be observed”.

This was important as there can be a tendency for students to avoid speaking in front of other students because they are embarrassed about potentially making pronunciation errors. Finally, students reported enthusiastically working in groups which they typically formed on their own initiative. This can be regarded as evidence of organically forming collaborative learning taking place, initiated by the pedagogical change. Despite the move to student-centred teaching, students continued to crave the oversight of an authority figure, in the form of me, the teacher. While students constructed their own knowledge, they simultaneously sought validation and general guidance from a teacher.

These results reflect a positive outcome of collaborative learning based on the application of technology in learning pronunciation. For students in this study, collaborative learning is strengthened by using technology as it encouraged the active engagement of students during group work.

7.3.3 Technology to support teaching methods

The use of technology can achieve positive learning outcomes because students can participate and practise as much as possible (Brenes, 2006). Moreover, technology can provide individualised learning and rapid feedback for students (Nadeem et al., 2012). Thus, to gain these benefits it is essential for language teachers to become proficient in the use of technology (Hashmi, 2013).

Shifting to technology-based teaching seemed to underpin and expand teaching methods for this study's participating students. Students mentioned that there were significant differences between their study in classes without technology versus their study in the laboratory, particularly in terms of the teaching method.

For students, technology can be incorporated to provide flexibility of teaching methods which provides a variety of learning strategies which can better meet individual student learning needs by catering for individual differences. Abu Bakr reported that:

> If technology is used effectively and appropriately they can support and enhance diverse teaching methods and learning styles.

Nawaf added:

> The use of technology in the class fits more into 'individual learning and teaching activities' than the traditional mode of teaching and as such can help students learn pronunciation and clarify their mistakes.

The results show that the application of technology in the classroom provides teachers with an opportunity to use different teaching methods to support students' learning.

7.3.4 Consistent performance monitoring and pronunciation assessment

Student progress monitoring is a practice that helps teachers interact with students to follow their progress (Hashim, Alam & Yusoff, 2014). The students' focus groups found it likely that monitoring students' progress would produce positive results for learning pronunciation.

Two students relied on their self-assessment to improve the quality of their performance when listening to or watching pronunciation materials, without being assessed by teachers through testing. As such, some students reported that having

regular assessment by pronunciation teachers could improve their work and encourage them to practise more effectively. Students wanted to be given an 'official' graded pronunciation test because they felt they were improving their performance and wanted their progress recognised by an authority figure; that is, the teacher. For example, Abdullah stated:

> Although the students show interest in coming to this class, pronunciation should be examined.

Furthermore Nawaf said:

> The students take care of this subject because the pronunciation has a relation with other study materials such as reading, so the test should be held.

While constructivist pedagogy promoted independent learning, students also wanted assessment from me to confirm their progress. Students were aware pronunciation errors could be fossilised through repetition and would then be hard to 'unlearn'. A student needs analysis and testing was suggested as a strategy to bring such potential errors to light. While students enjoyed their independence they also craved affirmation, supervision and monitoring. The degree of independence constructivist pronunciation learning created was clearly unfamiliar to many students, who while enjoying it also craved monitoring. Monitoring provided students with reassurance, similar to a life guard at the swimming pool who only intervenes when something is going wrong but his presence reassures everyone there.

7.3.5 Designing the learning sequence

The collaborative relationship between students and teachers assisted in curriculum decision-making matched students' learning styles. The students themselves suggested dividing the lesson into two phases. The suggested first phase would involve an

explanation by the teacher while the second would use a technology application in learning and teaching practices. In this way the teacher, even though using a behaviourist practice of drilling, would provide supportive feedback to correct student errors and the students themselves would then apply technology to practise correct responses. Ahmed stated:

> I believe that the teachers should explain and show how to pronounce words and then we can practise this in the computer laboratory.

The results demonstrate that the use of technology in education is able to fill gaps in student learning that may not be met by traditional teaching. They also suggest the considerable potential for justifying technology in education. As several student participants pointed out, the use of technology in the classroom was a way of complementing other methods of teaching.

During this section pedagogical insights were discussed while in the following section the third theme arising from the analysis of the students' focus group interviews of the suggestions students made about how to improve learning and teaching outcomes for themselves and teachers are presented.

7.4 Students' suggestions for improving learning and teaching

This section presents the suggestions students mentioned relating to influential factors resulting from the application of pedagogical methods based on technology which would possibly help teachers improve their teaching of pronunciation. This theme includes suggestions about: i) curriculum content adjustment, ii) recruiting more qualified teachers, iii) earlier pronunciation teaching, iv) integration of video and images, v) practising pronunciation with the Qur'an, vi) asking in-class pronunciation

questions on a regular basis, vii) integration of writing with pronunciation learning and viii) extra classes.

7.4.1 Curriculum content adjustment

Many suggestions reported by students mainly centred on broadening the curriculum's content by including in the scope of the pronunciation class subjects which they felt overlapped: vocabulary, speaking, reading and writing skills. Several students suggested this could be integrated through increased practice tests, quizzes and vocabulary exercises.

Seven students had positive attitudes about the intervention program as a whole in terms of delivering the curriculum content. They noted that educational technology supported their efforts to make sense out of information. Mohammed reported:

> The current content of the curriculum is better suited to the use of technology. The curriculum can be presented effectively through well-designed technology, and applying technology to the current curriculum can achieve this.

Several students made suggestions, which if followed would increase the topics to cover in class, such as vocabulary-related subjects. Although this could be considered an example of weak classification as advocated by Bernstein (1971, 1975) it is a little off-topic and could potentially result in not covering difficult letter-sounds in sufficient detail. One solution could be to design the use of technology to support students to cover different amounts of content at their own pace. In this way, the introduction of technology within the required curriculum content may be adjusted by students in order for them to 'pick and choose' what things they want/need to learn. Students could jump ahead to study the difficult letters which the authorised curriculum covered

in the later weeks or connected subjects such as vocabulary, thus reinforcing a constructivist style of learning.

By adjusting the curriculum to permit a weakening classification of subject areas (Bernstein, 1971, 1975), students taking charge of their own learning priorities will be able to concentrate on the area of learning most relevant to their needs.

7.4.2 Recruiting more qualified teachers

One of the students' suggestions which sparked the attention of others was the employment of qualified teachers. Students suggested recruiting more qualified teachers and focusing on teachers' qualifications and knowledge as well as their existing pedagogical methods. Three students suggested improving current teaching methods through hiring knowledgeable and well-qualified teachers. For example Omar pointed this out by saying "The best teachers are the oldest ones because they have great experiences".

Mohammed also supported the idea of more qualified teachers well informed about educational methods and tools. He mentioned that "Some teachers teach courses which are not in their field of specialisation". Consistent with this, Ahmed mentioned that:

> Teachers need to increase their knowledge of and skills in educational technologies to make them more fruitful for their students.

Ahmed also expressed the view that the teacher's quality is considered as one of the main factors related to success for students. He added that:

> A teacher's qualifications would benefit his students and as such he should be master of technology in many ways.

The results show that the Institute currently has a limited number of qualified teachers with an ability to use technology, as reported by the participants. From the perspective of students, teachers possessing familiarity with technology have the greatest potential to facilitate students' learning.

7.4.3 Earlier pronunciation teaching

In the early stages of learning a second language, pronunciation accuracy is quite important from the learners' point of view. Three students suggested that pronunciation skills should be taught from the beginning of the student's study at the Institute; that is from the first level. Currently, the structure of the course at the Institute begins with teaching grammar, reading, and writing at the first level and teaching pronunciation along with other subjects at the second level (see overview in Chapter 2). This reflects the extent to which the study plan in the Institute's program was constructed on the basis of strong classification (Bernstein, 1971, 1975) which places emphasis on segmentation among the levels of the study and subject areas.

7.4.4 Integration of video and images

Integration of technology that utilises pictorial illustrations, in-text images, audiovisual devices, video-tapes, voice-recorders or computerised programs have the potential to reinforce students' learning (Davies & Hewer, 2012; Allam & Mahmud, 2004).

Students in this study noticed that the application of technology in education inspired them to actively participate in the learning process even though at times it was not an easy task. Four students pointed to the integration of educational tools such as videos or pictures in the learning process which helped improve students' understanding of the lesson. For example, Mohannad said:

> The teacher has to explain his lesson proficiently in particular if he uses the symbols or pictures so as to transfer the necessary information quickly to the students. For example, if the teacher talks about a mobile phone the students will recognise it well even though they don't know what it looks like exactly, but if the teacher shows a picture of it the students will recognise the information very quickly. Therefore, if the teacher uses the computer while describing something it will help his students understand that more effectively.

Othman also stated that:

> Using video-based instruction and learning has the potential to help students know how to pronounce a word correctly.

The results reflect that educational tools for pronunciation approaches, techniques and activities may help and encourage students to develop their Arabic pronunciation skills.

7.4.5 Practising pronunciation by reciting the Qur'an

The use of the Qur'an to focus on correcting exit letters and pronouncing the words correctly was another student suggestion for improving teaching and learning. The Qur'an requires the correct recitation of all its verses. Two students indicated their interest in learning pronunciation by frequently listening to the words of the Qur'an while a native speaking *Imam* or Sheikh was reciting Qur'anic text either in the class or in mosques. This method is popular in teaching the Qur'an especially in mosques and is known as *halagat*. *Halagat* consists of a group of students with an *Imam* or a teacher of the Qur'an, and the function of this teacher is to teach students how to pronounce Qur'anic texts correctly (Elhadj, 2010). This is a traditional behaviourist method of learning and is particularly popular with non-academic learners. No technology, book or writing aid is needed and mosque-based recitations are free for the public to attend at their leisure with no pressure.

For example, Othman suggested:

> A good way is listening many times to the Qur'an being recited and we could also bring a good reader of the Qur'an to watch how he articulates during his reading.

7.4.6 Asking in-class pronunciation questions on a regular basis

Students expressed positive attitudes to teachers' pronunciation questions which were periodically posed to the class in various formats, including as a quiz. Several students requested more such questioning sessions. One mentioned that for effective questioning, teachers should really ask pronunciation questions in the classroom instead of making it voluntary. For example, Abdulaziz mentioned that:

> Teachers should ask students questions to encourage them instead of just saying, do you understand? At times, students don't participate in such activities because they feel shy.

The result shows that effective and regular questioning in the classroom may be a useful tool for teachers to assess the progress of their students and should not be overlooked.

7.4.7 Integration of writing along with pronunciation learning

Students pointed out how integrating the study of writing with the pronunciation of individual consonants and whole words would facilitate learning. Four students saw this integrative, complementary approach as particularly beneficial because when words were pronounced incorrectly, second language learners might try to write in the way they speak. Nawaf's spontaneous comment is an important insight:

> We have to integrate pronunciation with writing skill because some students learn how to say things that they do not know how to write.

Abdulaziz broadened the concept a step further:

> Just as it is useful to use video to show how to pronounce words also learning the pronunciation with the writing skill could be useful because writing is a type of practice.

Because students often write phonetically, if they are pronouncing incorrectly, they may write incorrectly. Consequently correct pronunciation flows over into the spelling component of the curriculum. Additionally in Arabic there are multiple letters that have similar sounds, so it is often natural for students when they hear an unfamiliar word to want to write it down to see if they have accurately established the spelling. By encouraging this practice, this is another example of weak classification between curriculum subjects benefiting both the pronunciation and writing classes.

7.4.8 Extra classes

Students suggested that given the importance of pronunciation in language learning, that extra classes should be given. Currently in a four-semester course spanning two years, pronunciation classes are taught in only the second semester and only once a week. Students pointed out a number of factors which they felt would improve their learning outcomes. For example, Abdulaziz stated his concerns:

> The amount of information, type of information, level of difficulty and the amount of new vocabulary is just too much to be covered in a 55-minute lesson. The class time needs to be extended.

While the decision to add further pronunciation classes to the course may have merit, this decision lies entirely with the Institute's administration.

The results presented in this section covered suggestions made by students to improve the teaching and learning of Arabic pronunciation, which in themselves represent a sign of the enthusiasm engendered by a technology-enhanced constructivist approach, implemented during the action research phase of the study which motivated

changes to learning. The following section outlines the final theme to emerge from the analysis of the students' focus group interviews, that of access and availability of technology.

7.5 Access and availability of technology

The previous section consisted of a range of student-initiated suggestions. This section presents the fourth theme to be identified from the students' focus group data which was access and availability of technology. This theme is further divided into two sub-themes: i) Institute infrastructure and system maintenance and ii) access to technology in the learning environment.

7.5.1 Institute infrastructure and system maintenance

Evidence from a variety of researchers in Chapter 3 such as Bingimlas (2009) and Alturise and Alojaiman (2013) showed that the lack of educational infrastructure is a major barrier towards utilising technology in learning.

Technical issues associated with computer performance were also a concern for the students. Although seven students reported having no problem with using computers in the laboratory, five others pointed to at least one (technical) problem while using technology. For example, the majority of students reported that the main source of problems associated with the use of technology in learning activities had been the headphones and voice recorders which were not working properly. Student responses expressed similar concerns to those of the teachers about the limited maintenance of the hardware and lack of technical support across the Institute.

The positive results students achieved during this study, using the limited available technology indicates that student use of technology can contribute to their learning; however the technology needed to be updated and maintained. Further, it revealed that without physical and financial infrastructural support little can be done to strengthen the integration of technology into the teaching and learning of Arabic pronunciation.

7.5.2 Access to technology in the learning environment

Technology, such as computers, internet or other related technologies, provides beneficial tools for extending educational opportunities both for teachers and students. Three students raised equity issues in relation to access to technology across the Institute. They noted that technology should be made available and accessible to all students and teachers because it would possibly support learning and students would improve their learning outcomes. For example, Abdullah said:"Personally, I like to study in a learning environment that enables me to access e-learning resources but we don't have it here".

Nawaf supported his view by saying:

> The laboratory should be open all the time and the internet as well. So, when I want any information I can find it because there is no internet in my home and if I want to go outside it is expensive.

This result is consistent with Al-salem's (2005) study that examined the impact of the internet on Saudi Arabian EFL female students. The study found that internet use had broadened their knowledge in addition to developing their writing skills.

Abdullah also stated:

> I guess the introduction of technology and computers into education makes it easier for us to learn Arabic. It helps us improve our attainment and capacity to learn and at the same time we can maintain our communication with the teachers either directly or indirectly.

Four students commented that one of the prominent advantages of technology was that it was available anytime and anywhere and they could access technology on a regular basis. For example, Mohannad reported:

> These days technologies are very useful; they are available and accessible everywhere and anytime, they help us access learning materials e.g. they provide us with information on how to articulate the letters properly. In my case, I can use technology at my home and take advantage of it because the teacher is not with me all the time.

Othman also elaborated that:"With technology you can communicate with your teacher anytime when s/he travels".

All students pointed out the uniqueness of using technology in pronunciation classes in comparison to other classes noting that no other teachers currently integrated technology into their teaching practice. Eid and Mohammed emphasised the importance of teachers using technology for learning with Eid mirroring Mohammed by stating:

> As we are in the year 2013, they have to use it immediately but unfortunately, there are some teachers unable to use the technology.

These comments indicate the educational potential of technology in learning which enabled students to study at the time and place of their choosing. Technologies like computers can facilitate learning pronunciation. It is also important to note that the learning process should not be limited to in-class activities but rather it can be extended beyond the class walls. It is also possible that the use of technology in

learning and teaching can help students maintain their interactions with their classmates and teachers, and both may benefit from such exchanges.

Students were mindful of the Institute's limited provision of computer infrastructure and were realistic about the need for computers to be provided in tandem with supporting infrastructure including buildings, cabling and computer hardware. The students were also aware of the requirement for computer maintenance to permit its efficient operation and were critical of how the Institute was lagging behind in this aspect.

This section covered the last theme mentioned in the data from the focus group interview of students; that of access and availability of technology which concerned physical infrastructure and its maintenance and student access to it. The following section concludes the chapter by summarising all points.

7.6 Conclusion

In this chapter students confirmed the positive value of a constructivist approach. They spontaneously introduced their own learning strategies and specifically called on the teachers to optimise learning through an emphasis on technology. Students' focus group data centred on four themes.

The first theme related to how technology increases the interest and the engagement of students demonstrated in their positive attitude to it, recognising it expands their avenues of learning. The students showed that the use of technology in education has potential pedagogical implications. Student enthusiasm for the use of technology helped stimulate enthusiasm for the subject, extending to prompting students to study topics ahead of the syllabus timetable and outside the scope of the

pronunciation class. Their comments reflect an appreciation for weaker classification. While such suggestions were admirable, they were not necessarily practical. It must be remembered that the pronunciation class consists of a single 55-minute weekly period and that any addition to the topic covered has the potential of reducing part of the topics being covered. Therefore, the focus of concentrating on difficult sounding letters may be needlessly diluted if students focus too much on subjects not related to pronunciation. Some overlapping is good, but too much may even negate the necessity of the class. As there is only a single weekly class, if students concentrate on overlapping subject matter, they may be doing so at the expense of actually practising correct pronunciation.

The second theme concerning pedagogical insights comprised five categories: a desire to hear native Arabic speakers, collaborative learning, an observation that technology supports different teaching strategies, monitoring and assessment of pronunciation and designing the learning sequence are enabled by technology. Students inevitably believed they would acquire better pronunciation of classical Arabic from a native speaker than from a non-native and wanted more native speakers involved in their teaching. Some of the suggestions were similarly not practical. Bringing a guest speaker in the form of an *Imam* to demonstrate correct speech is not a wise idea. First, if students wish to hear an *Imam* they can visit a mosque in their own time where free *halagat* sessions are conducted. Second, a majority of *Imams* use highly behaviourist practices and would be unlikely to share their time with computers, thus potentially cancelling the benefits of using technology.

Another aspect of the second theme was the classroom collaborative learning which organically emerged. It particularly occurred along first language lines where

students with the same first language gravitated together to help each other. Students also spontaneously developed their own ways of using the technology to suit themselves. Technology enabled students to jump ahead, repeat or stray from the authorised curriculum.

The third theme of student suggestions comprised eight categories: a need for current content adjustment, the need to hire qualified teachers, a request to introduce pronunciation teaching earlier in the course, a request to integrate video and images into classes, a desire to practise pronunciation through Qur'anic recitation, eagerness for more frequent class questioning sessions, an integration of the writing and pronunciation subjects, and extra classes. Students' eagerness to offer suggestions was evidence of interest and engagement resulting from fully embracing both technology and pedagogy. Again not all their suggestions were practical, for example teachers demonstrating words through images. First, teachers could not necessarily anticipate which words may need images, so would be unable to prepare images in advance and second, if the teacher was to search for images online in class time, this would take up precious time on something which is off-topic. It must be remembered that this subject is only taught in a single weekly class of 55 minutes in only one of four semesters, so time is scarce. In-class access to the internet however could allow students individually to search for unfamiliar words themselves online, rather than the teacher doing so. Furthermore the suggestion for extra classes is outside the scope of any single teacher and is a decision to be made by the Institute's administration.

The fourth theme, access and availability of computers, comprised two categories: the need for adequate infrastructure and its maintenance. Despite the obsolete technology available in the language laboratory, it was made serviceable.

However, for the Institute to fully embrace the possibilities of technology it was obviously apparent that a need to invest in and maintain the infrastructure existed. Nevertheless students all appreciated the available technology which proved a useful tool in their studies and requested it be extended, such as after hours access to the language laboratories and further connection to the internet. Such suggestions were exciting evidence of increased engagement and enthusiasm to learn.

The next chapter, Chapter 8, will examine the three principal findings of the research. These include: i) drawing upon the theoretical frameworks of power and control (Foucault, 1972,1977,1987), ii) classification and framing of knowledge (Bernstein 1971, 1975) and the promotion of student learning aided by technology utilising constructivist approaches, and iii) in the final section, the significant obstacles to technology integration at the Institute.

Chapter 8:
Discussion

8.1 Introduction

As outlined in Chapter 2 classical Arabic retains contemporary relevance because it is the language of the Qur'an, used daily in Islamic prayer (*salat*) and for Muslims to gain a fuller understanding of the Prophet Mohammed's teachings, necessary to enable reading books of *hadith* in their original form. As the Institute is dedicated to training future leaders of the Islamic community, modernising teaching methods to improve student outcomes and engagement with learning is a high priority. This thesis has investigated a technology-assisted constructivist approach to teaching and learning Arabic pronunciation as a means to improve pedagogical practices at the Institute. It also considered the complexities that students encounter while learning a new and difficult language and the role technology can play in smoothing the learning process. The research also highlighted the impediments to change which have until now obstructed greater use of technology at the Institute's pronunciation classes.

The chapter will discuss the findings in relation to Bernstein's (1971, 1975) concepts of classification and framing and Foucault's concept of power (1972, 1977, 1987). It will discuss the pedagogical shift witnessed which occurred through the introduction and use of technology in teaching classical Arabic pronunciation during this study. The pedagogical shift in terms of power and control related to a move from teacher-centred to student-centred learning resulting from the introduction of technology- based pedagogy; a necessity to match pedagogy to the needs of technology, in this case the adoption of a constructivist approach.

Within the area of ICT in teaching Arabic to non-native speakers, especially with reference to pronunciation skills, this chapter also discusses the results with respect to addresses the three specific research questions embedded in the sections on pedagogical insights promoting student learning with technology, and barriers to using technology. In the pedagogical insights section, the chapter discusses the pedagogical shift in terms of student control and power over their pronunciation studies, and also power relations between the teachers and the Institute with regard to curriculum reform. The results with regard to both the pedagogical shift and power relations contribute to effectively providing evidence foranswer Research Question 2 (RQ2):, on How does a technology-enhanced constructivist learning approach influences students' pronunciation of Arabic pronunciation, and Research Question 3 (RQ3): How does a technology-enhanced constructivist learning approach influence students' pronunciation of Arabic? , on students' responses to that approach. Similarly, Research Question 2RQ2 is also addressed by in the section on promoting student learning with technology findings on the promotion of student learning through technology. Finally Discussion of evidence related to Research Question 1 (RQ1), How is technology currently used in teaching Arabic to non-native speakers at the Institute? on the use of technology in teaching Arabic, is addressed provided by in the sub-section on the Institute's power relations and the section findings on critical barriers to the integration of using technology. However, it is important to note that while the research questions provided the direction for the study, the conceptual findings presented in this chapter also relate to pedagogy as I was investigating my own teaching practice.

8.2 Pedagogical insights

Addressing Research Questions RQ 2 and RQ 3, the section discusses the pedagogical insights in pronunciation that resulted from the introduction of technology in training. It examines how technology usage within a constructivist context necessitates redesigning the current pedagogy to take account of the different manner in which students acquire their knowledge. Rather than receiving it directly from teachers through traditional teacher-centred approaches, students construct it themselves, aided by technology. This section addresses the pedagogical shift that occurred by changing from a teacher-centred to student-centred approach by adopting a constructivist teaching pedagogy based on technology in conjunction with a weakened framing and classification (Bernstein, 1971,1975). Following this, power relationships at the Institute are discussed which relates to answering RQ1. Finally, this section points to the need for reconsidering the nature of the current curriculum to better suit the needs of students.

8.2.1 Power and control in pedagogy

The student-centred approach which lies at the heart of this study provided an insight into understanding how constructivist approaches based on technology adoption increased students' power and control in the learning process. This finding reflects the students' locus of control. Technology according to Jonassen et al. (1995, 1998, 2003) played an important role in designing a constructivist learning environment. As outlined in Chapter 3 technology can play an important role in developing learning and teaching practices at the Institute.

Collaborative learning is a strategy that enables students to take control over their studies by weakening framing and providing students with more power

(Bernstein, 1971) in the direction of their learning goals through social interaction (Pallof & Pratt, 2005; Hussain, 2012). The educational value of interaction and collaborative learning amongst the students due to the constructivist approach, based on technology, was a recognised result of the approach taken in this study. Working in groups provided more freedom for students in knowledge construction as the majority of students preferred to study pronunciation in groups for many reasons such as helping each other and overcoming psychological problems such as shyness, as presented in Chapter 7.

During this study the teacher's relaxation of the rigid subject boundaries within the curriculum represented what Bernstein (1971) would recognise as reduced framing. In tandem with this students worked together in order to achieve target goals which equated to constructing knowledge through learning activities and social interactions (Tobias & Duffy, 2009; Yang & Wilson, 2006). Simultaneously the teacher became a facilitator of the learning process, largely acting as an autonomous facilitator mediating student interaction with technological teaching aids. This situation supports McCabe (2003) who argued that the teacher should create an appropriate environment for students to allow them to study with each other. The student-centred approach observed in this study was contrary to authoritative style teacher-centred pedagogies which aim at transmitting information to students (Maphosa & Wadesango, 2014).

Examples of students exercising greater power and control, as preferred by Foucault (1977), were facilitated by the teacher delegating authority to technology which resulted in a weaker framing in the learning environment (Bernstein, 1971). Students made suggestions in class, such as two students who asked that pronunciation software be uploaded to the internet to enable them to extend their study time outside

the language laboratory; a positive suggestion if it proves possible to implement (Alharbi, 2012). In addition as the teacher I noted that students independently went onto other topics that had yet to be formerly introduced as a part of the curriculum. This occurred because curriculum integration resulted from the learning independence that technology gave the students. As a result this study supported Bernstein's weakened framing and integrated curriculum classification. During the study's intervention both occurred as a result of the constructivist approach being applied in tandem with technology, while adopting Foucault's classroom power balance of delegating to students from teachers.

Fairclough (1989) observed that the willing incorporation of participants into apparatuses of control, rather than through coercion, tends to result in optimal adoption of ideology and exercise of power. The constructivist approach together with the introduction of technology to students, in this study, gave them power which they did not possess under the prevailing traditional teacher model. This resulted in a pedagogical shift which showed that the teacher power structure was capable of change through the introduction of technology, coupled with an alternative pedagogical model and a flexible and determined attitude of the teacher. Consequently there was a rebalance of power in the classroom at the expense of the traditional teacher role. Embracing two adaptations, technology and a constructivist approach, the power structure inevitably changed, reflecting the changing role of the teacher.

For this, it could be said that the student-centred approach provided the conditions and a suitable environment for students because the learning was constructed by students (Ford & Lott, 2015; Perkins, 1991). It was at this interface that this study showed that constructivist approaches with technology integration brought

about conceptual changes in pedagogy. This was characterised by the reduced role and domination of the teacher in the classroom as described by Pagán (2006). Thereby, the weakened framing involved more freedom and control over how students constructed their learning. Meanwhile the teacher's primary function changed to essentially planning the employment of available learning means to convey information to the class, or to stimulate and enthuse students in order to engage with that information (Plomp et al., 2007).

8.2.1.1 Weakening curriculum classification

According to Bernstein's theory, a strong division between areas of learning exists when strong classification exists alongside strong teacher power. In this research I as the teacher-researcher had previous experience using traditional behaviourist approaches, such as direct methods to teach pronunciation (Batool et al., 2015), which I believed provided insufficient time to stray from the authorised curriculum, even to help weaker students. The traditional approach involved the one-way transmission of knowledge (Richards & Rogers, 2001; Mart, 2013) which according to Günther (2006) is contrary to the Islamic principles of knowledge transmission which places emphasis on thinking to discover. What was needed was the opportunity for students to use technology as a liberating factor to help them with their own learning and their interaction with each other, and with the teacher. The constructivist approach however also led to a weakened classification with heightened student power and weakening of the division between areas of learning.

The action research in Chapter 6 demonstrated a characteristic preoccupation with a common weak point for students; the meaning of particular words used as examples for pronunciation, to which some students suggested the use of visual aids.

Such comments are potentially valuable for the formation of an integrated curriculum coordinating various related subjects, where student learning could proceed at an optimal pace with clearly set out lexical meanings provided (Yunus et al., 2009; Mahmoud, Sahrir & Osman, 2013)

The success of the constructivist-based approach using technology was shown visually as an African student, Salim, smiled as he sat in the language laboratory practising pronunciation which gave him an opportunity to not merely learn pronunciation but also to think about how to take advantage of the technology which encouraged him to devise a strategy in the development of other skills, such as memorising Qur'anic verses. In Bernstein's terms this connection of pronunciation to other areas of learning represents the concept of weak classification and movement towards an integrated curriculum (Bernstein 1971, 1975).

It could be argued, based on what occurred during this study, that technology usage within a learning environment based on constructivist approaches was specifically responsible for transferring control over learning to the students themselves. In order for this occur it was necessary to substitute the restrictive teacher-centred behaviourist methodologies previously followed, with student-centred constructivist based approaches more conducive to permitting the available technology to be fully and freely exploited. It was evident that without prompting or specific instruction to do so, students themselves wanted to connect pronunciation with the other curriculum areas such as writing, reading and vocabulary. The strategies this study followed to promote technology usage in teaching enhanced students' pronunciation and vocabulary abilities, which mirrored the findings in Yunus et al.'s (2009) study.

8.2.2 The Institute's power relationships

This sub-section addresses the power relations in the Institute between teachers and students and between administration and teachers. Foucault (1978, p. 93) believed that power is rooted in every situation. The relevancy of studying power relations, to this research, lays in understanding how power is directed and exercised at different institutional sites, and how it affects individuals. Power over students is different from power to implement decisions which affect student learning, such as shaping curriculum delivery.

Teachers are able to exercise power over students through their roles as models of correct pronunciation in class, through following the curriculum and through assessing student performance in the regulated educational environment (Moss, 2002). Teacher-dominated power structures in the classroom may be good, even essential, such as when a teacher usefully structures a student's learning, or alternatively it may be detrimental, such as where rote learning suppresses critical judgment. Shifting between strong and weak framing according to the needs of students and classroom knowledge resulted in increased student-to-student interaction and increased initiative shown by students to decide how to use their time with the available technology (RQ2). This study witnessed student power increasing with the changed role of the teacher and introduction of technology. This occurred as a direct result of the study because I effectively relaxed the curriculum in week 3 to reduce the teacher's power in order to permit student power to increase as a consequence. The relaxation of teacher power permitted the emergence of collaborative learning amongst students. Jamieson and Thomas (1974) found that strong teacher power can cause a negative reaction amongst students which flows over into a negative attitude towards learning. Similarly,

Jackman (2014) found that classroom discourses are most successful when teachers adeptly wielded knowledge and were less successful when exercising power as a teacher. In my study power was shifted to students and attitudes and engagement towards learning remained positive from the start, partly because students enjoyed the new learning environment.

Teachers are unable to achieve the objectives of the Ministry of Education because of the reluctance of the university's administration to implement their policy objectives to incorporate technology within education. Despite reservations relating to their technological expertise, the teachers in the focus group were supportive of technology use in principle which they acknowledged would necessitate curriculum redrafting (RQ1). Teacher Abdul-Samie, for example, believed the Institute needed "curriculum content that accommodates technology and uses it properly". All the teachers' focus group participants believed the Institute's administration was responsible to provide opportunities and expertise for the use of technology.

According to Mingaine (2013), Schiller (2003) and Webb (2011), administration plays a central role in creating a valid educational environment. Teacher perception (RQ1) was that a major reason for the continued use of the traditional method in teaching was financial considerations. Teachers believed the Institute's administration used insufficient financing as an excuse to justify their lack of enthusiasm about replacing the traditional teaching methods with more positive educational environments. While a majority of teachers believed the Institute's administration was responsible for failing to introduce technology in teaching, one teacher mentioned that the Ministry of Planning and Finance is responsible for providing technology in the Institute, so they shared the blame. Nevertheless Abdul-

Hakeem mentioned that the university is involved in the process of constructing a new building for the Institute with comprehensive modern technology.

Where analysis of the phenomenon of power in the Institute differs from Foucault's picture is in the attitude of the students, who did not have to challenge the learning environment. In fact they aspire to membership of that system, as can be seen by the pattern of their prospective career paths, often striving to become an *Imam*. Yet it could be argued that in effect they are challenging the role of the teachers because the teachers' didactic methodologies were not helping them to improve their learning outcomes significantly, while the constructivist approach based on technology taught in a collaborative learning environment encouraged them to take control over their knowledge goals.

8.2.3 Redesign of curriculum

Correcting pronunciation errors is the primary objective of the Institute's pronunciation class. With regard to pronunciation, the Institute's curriculum is very detailed regarding phonetic issues as they relate to reading and grammar as well as regarding articulation and also *Tajweed*. The existing curriculum, by necessity, incorporates a substantial amount of material and there remains the pressing need to ensure that sufficient time is allocated to each subject according to its importance and relevancy to the course (Al-Otaibi, 2006; Chen, 2012; Alnjar & Asleem, 2008). However, the limitation imposed by a single 55-minute weekly pronunciation class, together with the classroom size, is a limiting factor to the potential this subject can realistically achieve.

As a result of the pressure placed on teachers to deliver a sizeable curriculum in a limited space of time to students who potentially resist the aims of the class, teachers

focus on delivering the content of the curriculum without analytically focusing on difficult letter-sounds or even discerning if students are benefiting from the class. Prior to the study I also followed this practice of prioritising the curriculum.

Hmelo-Silver, Duncan and Chinn (2007) argue that problem-based learning and inquiry learning are powerful approaches where scaffolding in fact reduces cognitive load in learning. As a result, technology-based constructivist approaches in this study provided me with a chance to determine difficult sounds for students rather than make them study other information.

From a pedagogical perspective this study has shown the value of student-centred learning where teachers facilitate the active construction of meaning and take charge of their own professional development (Vacca, 1994). It could be argued that this sort of learning has the potential to make the teaching of pronunciation of classical Arabic more effective and more meaningful. A constructivist view of curriculum design departed from a traditional concept where a single perception of reality and knowledge is dispensed to students (Cullen et al., 2012). Integration of curriculum was utilised to make teaching and learning activities meaningful.

It could be argued that the success of this study's pedagogical model built on a constructivist approach incorporating technology showed that the Institute's curriculum can be redesigned to create a balance between what students are required to learn, what they need to learn and what they want to learn. However, in order to accurately satisfy students' individual learning needs the curriculum needs to be redesigned to accommodate technology usage in a constructivist learning environment. Such an environment sees power shift, via technology, from the teacher to the student who is capable of exercising a degree of learning independence not possible within

traditional behaviourist learning environments. Consequently to facilitate the power shift, rather than resist it, a complementing curriculum may be required. This focuses attention on students' individual needs. A new curriculum needs to acknowledge the value of weaker lesson classification to connect pronunciation to other curriculum areas and weaker framing to establish student control.

This section has examined a range of pedagogical insights resulting from changing pedagogy and introducing technology, while the following section will look at the precise qualities of technology that ensured improved learner outcomes.

8.3 Promoting student learning with technology

Addressing RQ 2 on the influence of a technology-enhanced constructivist learning approach on learners of Arabic as a second language in the Institute, this section aims to discuss the benefits of using technology in the classroom and it addresses how technology in a constructivist environment played a role in promoting interest and engagement through sustaining student attention in the classroom.

Students valued the ability of technology to access information such as pronunciation software and audio-visual aids because the technological aids proved helpful to them by shifting from abstract to practical knowledge. As the technology can be simply used without the need for extensive training, it proves an efficient teaching aid for both instructors and learners (Hoffler & Leutner, 2007). In the focus groups, students explained that using technology such as videos helped them to understand exactly where articulation points were.

Access to technological instruments in learning pronunciation is frequently raised as an advantage of language learning as presented in Chapter 3 (such as Elimat

and AbuSeileek, 2014; Yunus et al, 2009; Young, 2003). As a result of integrating technology in the pronunciation class conducted in a laboratory, student stimulation by the medium of technology reflected in increased engagement with the pronunciation subject (RQ2). This finding was also reflected in other studies such as Anwaruddin (2013) and Juniu (2006) who also found that integrating technology in learning practices stimulated student interest and engagement as observed in this study. Similar participants in the study thought that the use of technology in teaching had been responsible for enhanced student engagement. Almamun (2014) and Allam and Mahmud (2004) also found that the availability of audio and visual tools via language laboratories supported teaching a second language including pronunciation, similar to this study's results.

Accordingly, the use of technology in this study provided insight into the perception of gaining students' attention (RQ3). The visual teaching aids promoted student attention. Educational videos such as those found on YouTube, in conjunction with the pronunciation software, provided opportunities that promoted student attention towards learning. Smyrni and Nikopoulos (2010, p. 307) found that short video-based lectures were effective as a teaching methodology. In this study video-assisted lessons improved students' attention during the lecture and focused students on the content. With videos, student learning was optimised because they used various senses in the learning process (Robson, 2011). At the time I noted:

> It was unforgettable. Each one of the students sat completely silent during the video. As they sat unmoving the whole time I saw clearly that the eyes of each one of them were fixed on the screen. Not one of them spoke; their lips moved only in silent imitation of the movements of the vocal organs on the screen. This was far beyond interest or even enthusiasm. The whole class of students was transfixed on the articulation of Arabic speech. The students asked me to play the video again.

In the traditional method knowledge seems to be abstract for some students. Because student attention tends to be focused on the teacher's verbal skills while other senses are not engaged. However, this study, contrary to traditional methods of teaching, which only focused on the hearing, involved students watching and listening, understanding points of articulation and the manner of articulation for various consonants, then practising.

Consequently, technology usage enabled the interaction of students in the classroom who imitated what they watched and attempted to reproduce the tongue and mouth postures they saw. Students directly interacted with the technology and requested replaying of the video more than once. Classroom technology use resulted in an increased focus on content, which elevated interest and engagement of the students in the class (RQ2, RQ3). Moreover they came to expect that videos would be included within the lesson's technological material to aid their learning of pronunciation (RQ3). As Othman stated:

> I benefited from the video on how to pronounce consonants in relation to the point of articulation, and then apply this in practice through the pronunciation software.

The positive observations of students enthusiastically engaging with the technology is in stark contrast to Gilbert (1994) who stated that "most pronunciation activities found in course books are based on a behaviorist drill-and-kill paradigm, which inevitably leads to boredom" (Kanellou, 2011, p.16).

As a result, this study found that using technology improves learning outcomes (RQ2), similar to Hoffler and Leutner's (2007) study which found that animation techniques were able to form a bridge between practical and declarative knowledge. Consequently technology had a positive impact on student attention and satisfaction

(RQ3), in line with findings recorded elsewhere (Neri et al., 2002; Anwaruddin, 2013). The engagement with technology flowed over into engagement with the subject matter being taught.

This finding shows that students were more positive about their access to technology which is unsurprising due to substantial differences between the traditional method and the technology-based constructivist approach. The finding also reflects the status of my class in the Institute within Saudi Arabia's higher education system and thus is of direct interest in facilitating the technology-based pedagogy in learning processes, which supports students' learning.

This section touched on the role technology can play in producing improved learning outcomes (RQ2, RQ3) particularly in conjunction with a student-centred constructivist learning environment. The following section looks at obstacles preventing greater technology use in the form of physical and administrative barriers.

8.4 Barriers to using technology

The previous section discussed the benefits that technology can bring through different methods of learning and stimulating interest and engagement. It The present section, responding to Research Question 1 on the way technology is currently used in teaching Arabic as a second language in the Institute, discusses constraints on the use of technology in classrooms, with particular consideration having in mind to the fact that the use of technology in the Saudi Arabian education is a matter of State policy, given technology use in Saudi Arabian education is state policy. This section also provides evidence for RQ1 on the way technology is currently used in teaching Arabic as a

second language at the Institute, The section notes barriers in relation to infrastructure and teacher training.

Although many studies (such as Ghabanchi & Anbarestani, 2008; Neri et al., 2008) pointed out the effectiveness of technology in teaching and learning pronunciation, the use of technology in the Institute is still not well supported.

Teachers criticised the lack of technological infrastructure at the Institute (RQ1). Despite this, in the mid-1990s the Institute invested in creating four language laboratories but no commitment was made to their use and they remained largely unutilised for two decades. The administration has had a record of inaction and delay in introducing technology in teaching pronunciation as well as other areas of Arabic studies. To enable this study to proceed I paid to fix the technology in one language laboratory prior to the implementation of the study. Use of this barely serviceable technology frequently produced voice recordings which were unclear because of faulty microphones, while there were also problems with headphones.

This study demonstrated that the administration has had a record of inaction and delay in introducing technology in teaching pronunciation. Teachers illustrated they had power to make limited changes, including using technology which they were theoretically free to use but were not proactively encouraged to do so. Nevertheless teachers have been using technology themselves and bringing it into the classroom. They attempted to make up for the lack of technology provided by the Institute for teaching by using their own personal laptops to demonstrate points of articulation of consonants (RQ1).

A lack of appropriate infrastructure and a material shortage of technology resources were commonly cited as significant barriers towards realising the full

potential of technology and technology's absence was used to justify the continuing use of traditional methods in teaching. In other studies (Alwani & Soomro, 2010; Bingimlas, 2009) concerning why technology is not used more widely, research found that inappropriate instructional infrastructure significantly contributed to technology's limited use. Therefore, teacher reliance on the provision or non-provision of technology for teaching is an expression of the institutional power over teachers.

Another factor affecting using technology is teachers' training (RQ1). Integrating educational technology in classroom teaching practices necessitates preparing teachers professionally to enable them to use technology in the classroom (Balash, Yong & Bin Abu, 2011). Some teachers actually refused to use technological equipment because of lack of knowledge, lack of confidence and in some cases simply resistance to change (Altodari, 2004; Salehi & Salehi, 2012).

The lack of teacher training in relation to the practical and pedagogical use of educational technology in the classroom was clearly evident in the results. Insufficient teacher training limits the extent to which already available educational technologies can be used in the classroom environment.

Although teachers mostly had not been adventurous in using technology in the classroom, in this study they do have reasons to point to a lack of professional training as well as a lack of technical support. Teachers need to be able to select software and hardware as well as use equipment in class (Alkahtani, 2007). Teachers should be able to assess a practical situation and implement technology-based solutions (Jung, 2005). The varying levels of technical competence of the teachers is a concern, one similarly noted by Alhersh et al. (2010) and Khan & Law (2015). In addition teachers commented on their limited training during their own degrees. While this may imply

that their original degrees did not equip them with sufficient skills for their jobs there is also the view that technology-related training requires ongoing training to keep pace with changes and updates in technology.

Skilled teacher experiences in the use of technology might be an important factor in transforming passive knowledge transfer into active student learning (Bingimlas, 2009; Su, 2009; Kopcha, 2012; Walker & Shepard, 2011).

The teachers saw that technology usage could save them time and effort in learning, but they stressed the need for comprehensive training in the use of technology as well as establishing an appropriate learning environment to enable them to benefit from the advantages of technology in the learning process.

Ultimately, it could be argued that there is a relationship between technology usage in teaching practice and constructivist scenarios because each can benefit the other (Gilakjani et al., 2013). Thus, the successful use of technology within the constructivist framework in the classroom depends on infrastructure such as accessibility together with the availability of technology (Rakes, Fields & Cox, 2006; Nanjappa & Grant, 2003) and teacher training (Alhersh et al., 2010;Alkahtani, 2007).

8.5 Conclusion

This study indicated that a technology-based constructivist approach has significant potential for the development of Saudi Arabian higher education involving shifting from traditional behaviourist teacher-centred methods to constructivist student-centred methods. While traditional behaviourist pedagogies are widely recognised as unsatisfactory for both teachers and students, substituting this approach for a constructivist pedagogy inspired by Bernstein's preference for an integrated

classification and weak framing in curriculum in tandem with Foucault's advocacy for a classroom power shift from teachers to students has been shown in the course of this study, to produce impressive learning outcomes while stimulating student engagement with the subject.

The theoretical benefits of a shift in the centre of power from the teacher to the students were evident in the study. The dynamic of a technology-based pedagogy permitted the emergence of constructivist learning to occur. The teacher essentially ceased to be the centre of classroom power, with the technology taking over some of this position; consequently students experienced a degree of learning autonomy by being able to access this technology on their own. Furthermore the technology provider in the course promoted learning to continue outside class hours without any direct involvement of the teacher. The benefits of technology within a constructivist environment were immediately recognised by students who visibly looked pleased to be using it and expressed their support by requesting technology use in other classes and asking for even further assess, such as through the internet.

The physical and technical aspects of the technology provided students with extra learning opportunities which could not be delivered in traditional classes. As a consequence of personal access to computers and technology, which students actually enjoyed using, their engagement levels remained persistently high. Students mentioned they did not find technology boring and because they connected with the technology they engaged with the subject matter.

The use of technology, particularly in a constructivist framework, means the curriculum needs redesigning. This draws attention to the current inadequacies of the curriculum which centre around two points. First, teachers prioritise meeting the needs

of delivering the syllabus in a short timeframe and second, the curriculum allocates equal time to each letter-sound, despite the fact students only find some letters difficult. Consequently the curriculum needs to be updated to reflect that independent learning opportunities mean students will automatically move towards subjects they prefer, which in this case are the most difficult to pronounce sounds. Technology therefore causes a breakdown in the highly segregated framework of the current pedagogy. Technology permits students to focus on complicated consonants which draws attention to the need that the authorised curriculum itself should only address these difficult sounds. Given the fact the subject is covered in only a single weekly class, the curriculum cannot afford the luxury of covering knowledge that all the students already know.

The next chapter, Chapter 9, provides a conclusion to the thesis which summarises the chapters of the thesis. It also addresses the strengths of the study and the study's limitations. The chapter reflects on this study's significance and finishes with recommendations.

Chapter 9:
Conclusion

9.1 Introduction

This study asserts that technology-based constructivist learning has the potential to offer excellent learning experiences to students of Arabic in Saudi Arabia. The majority of the students expressed positive attitudes towards their learning experience. From the perspective of the students, a technology-based constructivist environment offered them the flexibility to construct their own learning. Therefore, technology-based constructivist learning is clearly a practical solution for non-native Arabic students.

It is anticipated that the results of this study will have a tangible impact on the learning environment in the Institute especially on the willingness of teachers and their desire to enhance their teaching pedagogy. However, I cannot anticipate how fast the adoption of using technologies in learning will change or influence the expansion of the learning environment because it demands much work to lay the foundations for a new learning environment.

This thesis has documented my research into applying a technology-based constructivist approach to the study of classical Arabic pronunciation at a language Institute in Saudi Arabia. It has demonstrated that access to technology in learning classical Arabic as a second language empowered students to learn efficiently by themselves, enabling them to learn pronunciation without sole dependence on the teacher. In order to investigate the teaching of Arabic proficiency to non-native Arabic speakers this thesis sought to demonstrate that a technology-based learning

environment utilising constructivist approaches would deliver a favourable outcome in terms of measurable learning improvements.

An intervention was conducted using an experimental technology-based approach during a single semester for a single class in order to answer the following research questions:

1. How is technology currently used in teaching Arabic to non-native speakers at the Institute?
2. How does a technology-enhanced constructivist learning approach influence students' pronunciation of Arabic?
3. What were students' responses to a technology-based constructivist approach to learning Arabic pronunciation?

The Institute, and others like it, offer pronunciation training for classical Arabic because Saudi Arabia awards free scholarships to international students in order to develop their understanding of a shared Islamic faith. Despite Islam's ancient origins, modern day Saudi Arabia only dates back to 1932 but is home to Islam's two most holiest sites: the pilgrimage city of Makkah, and Medina, the final resting place of the Prophet Mohammed and 'capital' of the first Muslim Caliphate in the 8th century. While there are 32 countries which speak Arabic as an official language, Saudi Arabia has effectively taken charge of promoting the preservation of the version of Arabic used in the Qur'an: classical Arabic. Aided by the income from oil Saudi Arabia's Ministry of Education has established a number of educational institutions whose aims are specifically to encourage Islamic learning. A part of any such course of study includes accurate Arabic language pronunciation. Unlike some world religions, Islam does not encourage innovation and change. In fact quite the opposite situation exists. Muslims believe that Islam was perfected by the time of the Prophet Mohammed's

demise, so any innovation would represent a deviation from perfection. However, while Islamic practice is not open to change, methods of learning and spreading Islam's knowledge are not bound by such restrictions. Therefore, pedagogies and the use of technology in learning which has seen significant changes in other fields of academia may theoretically apply to Islamic teaching and Arabic pronunciation in particular. Nevertheless, traditional behaviourist pedagogies continue to predominate and little use of technology in language training has been made. This is the background to why this thesis sought to investigate an alternative pedagogy.

The literature review particularly focused on the work of Bernstein (1977) and Foucault (1971) whose approaches, when combined, produce a pedagogy which has a weak boundary between curriculum subjects, shifts power from teachers to students and leads organically to collaborative learning. Behaviourist approaches are ill-suited to technology learning so to maximise the potential of computer-aided learning, a new pedagogy is needed. During this study an intervention was carried out in an Islamic language institute using technology in combination with a collaborative student-centred pedagogy. One pre-existing but out-of-date language laboratory was made serviceable for this purpose and during one semester 32 students experienced this new learning environment for their once a week 55-minute long Arabic pronunciation class. Results were measured through a series of four tests: one pre-test to determine pre-intervention pronunciation skills, a main post-test (post-test 4) to measure the students' final progress and two intermediate tests. The thesis presented the results from focus groups conducted separately with teachers and students, and discussed findings and the concluding recommendations resulting from both these findings and my own observations.

Essentially this research has been undertaken because a significant number of educationists convincingly affirm that constructivist learning approaches are able to enhance students'learning of pronunciation particularly in conjunction with technology usage, while at the same time there is considerable dissatisfaction with traditional teaching approaches. The foreign students at the Institute have shown, by coming to Saudi Arabia to study classical Arabic, a strong desire to learn. To support their desire to learn Arabic, a favourable learning environment can promote improved learning outcomes and engagement in learning, which in this study was created through the development of a constructivist learning environment. During the 14 weeks of a single semester in 2012 just such an environment was initiated for students by temporarily upgrading one disused language laboratory, making its computer equipment serviceable and conducting classes using a modified curriculum employing weak framing within a constructivist learning environment.

In this thesis technology represents computer hardware, language learning software and individual audio equipment such as recording devices, CDs and even cassettes. Creating favourable learning environments in which to utilise technology was shown to stimulate learning and students enjoyed using the technology.

Employing a constructivist learning approach while incorporating technology in teaching strategies reflects a natural and mutually supportive combination. A technology-based constructivist approach also includes the use of technological teaching aids such as visual charts, video material and the language laboratory itself. Constructivist-based technology supports a weakening of the power and control of the teacher, so that student engagement can be unleashed, which in this study occurred with impressive results. The pedagogic shift from a teacher-centred pedagogy to a

student-centred pedagogical approach, took place during the study guided by me as the teacher-researcher. Learning outcomes documented in results from the data collected justify the claim that a viable alternative to existing teaching methods is available and feasible for employment in the Institute's pronunciation classes.

9.2 Strengths of the study

This research is a rare example of academic research into teaching Arabic as a second language. While a plethora of research has been conducted into teaching English as a second language, far fewer studies have investigated the unique aspects of learning Arabic by non-native speakers. Thus, this is the first study that took place in Saudi Arabia summarising and portraying teachers' and students' perceptions of technology application in the classroom to enhance Arabic pronunciation.

Additionally this study involved primarily religiously oriented male students undertaking study for essentially devotional purposes. They had a desire to learn to pronounce Arabic perfectly especially to read the Qur'an aloud. As a result this study's subjects were highly enthusiastic 'volunteers' while comparable studies frequently involved secondary school students whose studies were accompanied by a degree of compulsion which may influence their (lower) level of engagement.

Furthermore, studies conducted at secular tertiary institutions may also involve students whose interest levels are lower than those prompted by a sense of religious duty, as students at the Institute theoretically are. In addition, this study involved students who were striving to reach a level of excellence in pronunciation that students learning Arabic for commercial or secular employment purposes may not be so determined to reach.

This study may also represent an academic first by being the only current study which has employed an action research methodology into investigating the teaching of Arabic to non-native speakers. While numerous observational studies have been undertaken, this study's replacement of the prevailing behaviourist pedagogy with another pedagogy during the course of one complete semester does appear to be unique in the field. Throughout the Arabic speaking world, traditional behaviourist pedagogies prevail yet are widely acknowledged amongst academia as being outdated, including as Jameel (2010) confirmed, in the Middle East where they continue to dominate teaching. However, impediments to replacing these older approaches appear to exist not only in Saudi Arabia but apparently in most, if not all, countries in the Arabic speaking world. During this study, teachers' focus groups, participants expressed beliefs that better pedagogies existed, yet were unable to precisely identify exactly which ones they might be. Therefore, this study is able to provide guidance for enacting pedagogical change in the form of a constructivist student-centred technology-based pedagogy which has been shown to be both popular with students while also competently delivering similar, if not better, student learning outcomes.

The study has demonstrated that a pedagogical shift occurs when pronunciation classes are taught through a technology-enhanced class within a constructivist approach. The use of technology facilitates change in classroom teaching environments from teacher-centred to student-centred situations. In traditional pedagogies the teacher is the centre of learning with students physically facing him and following his direction. However, teaching utilising technology means students are physically interacting with technology which becomes their focus of learning or focused on the sound being produced on a cassette tape in order to practise their pronunciation.

Depending on the software available students are primarily interacting with the computer and are likely to progress at their own pace and can potentially learn in a different sequence to what the teacher had planned. Computer-aided learning also permits students to cherry pick what they wish to learn. In the case of Arabic pronunciation training, it was observed that students jumped ahead and automatically moved to the specific difficult letter-sounds that were challenging to them. Learning correct Arabic pronunciation by non-native speakers centres around mastering eight difficult letter-sounds which students inevitably realise are difficult for them. This thesis is distinguished by its focus on the learning of eight Arabic consonants that are particularly difficult for students of Arabic as a second language. Therefore, with technology students intuitively focus their attention on these letters. However, some students may not find all eight letters difficult, so they may pick different letters to study comparative to other students. Technology enables differentiation of curriculum according to the needs of students. The independent learning options technology makes possible effectively ensures it is virtually impossible for traditional pedagogies to be maintained when the learning is in the hands of students who can pick and choose what they wish to study. Consequently technology makes possible the power shift from teachers to students which Foucault (1972, 1977, 1987) and Bernstein (1971, 1975) would recommend. By adopting a constructivist framework developed out of the thinking of Bernstein and Foucault, this study has established a unique approach to the learning of Arabic pronunciation, and this contributes to the literature on teaching Arabic as a second language.

Because Saudi Arabian tertiary education remains attached to teacher-dominated traditional pedagogies there is little opportunity for collaborative learning

amongst students to emerge. During this study clear evidence of the potential that collaborative learning possesses was seen during classes. In this study's action research the power which students exercised in deciding how and what learning they wished to focus upon saw students intuitively gravitate together to help each other, particularly among first language groups. Students from the same first languages typically encountered the same pronunciation difficulties, usually because the unfamiliar Arabic sounds are not present in their first language. Students therefore sought help from each other to overcome shared difficulties. Because students already possessed a high level of interest and enthusiasm, organic learning group formation occurred because of the power shift which resulted in students exercising greater freedom.

9.3 Limitations of the study

This section discusses the study's limitations. While test results recorded continuous improvements in student results which would seem to indicate success for the thesis's main premise, the study's tests could have been conducted differently and the participation of the administration would also have provided more information on which to make decisions and recommendations.

To measure student progress or potential lack of progress during the action research this study conducted four tests among students in the class with a pre-test with all 32 participating students, two intermediate tests with 16 students each and a final post-test with all 32 students. In retrospect all students should also have been invited to participate in the two intermediate tests. This would have improved the veracity of the scores without placing any extra burden on either me, the teacher-research, or the

participating students who actually enjoyed the tests. Students were as eager as I was to see their learning progress manifested in actual numerical results.

Another shortcoming of the tests was the lack of a control group. While the four tests did in fact show a significant improvement both individually and collectively it was impossible to ascertain how much better students who took part in the action research intervention phase were in comparison to their colleagues in other classes where teaching employed only traditional methods. Therefore, it would have been helpful to conduct the same tests with at least one other class as a control group. Theoretically the different scores between the intervention group and the control group could be attributed to the different pedagogy which used technology in teaching pronunciation and promoted students' ownership of their learning. Because no such control group existed, claims that the approaches taken in this study are transferable to other contexts are not possible.

A further limitation of the research was the fact that the curriculum limits pronunciation classes to only one per week. Consequently all research was based on a single 55-minute weekly class which was possibly too short and also too infrequent to document significant improvements in students' learning outcomes.

Students made the suggestion that the pronunciation class should have a writing component. While this is a good example of weakening curriculum boundaries as purported by Bernstein (1975), it is also a very practical idea because it is a general observation that language learners do actually write as they hear, phonetically. The software program developed specifically for the action research did not have a writing or typing component; however it could be added without placing an extra burden on the class time. With this addition, I as the teacher would have also been able to utilise

this data to discern student perceptions of which difficult sounds they thought they were hearing.

A further limitation of the study relates to the lack of inclusion of the Institute's administration in a focus group similar to that of the teachers of pronunciation in order to seek their opinions. Both students and teachers, but particularly teachers, made statements about the administration which essentially went unverified. Had the administration been invited to participate by offering their opinions, further evidence to support or challenge teachers' claims could have been made. Many staff believed the administration was effectively to blame for the Institute's slow or non-existent move towards embracing technology, but this study's findings do not have an alternative explanation to consider from the perspective of the administration. Because the administration was not involved it is difficult to determine the extent to which policy or conservatism as well as technical or financial constraints may have influenced the administration in relation to the effective introduction of technology in education.

9.4 Recommendations

In this section recommendations based on the findings of the research together with my own observations made during this study will be offered. Recommendations fit into two broad areas: ones relating to pedagogy and those relating to policy. Falling within the domain of pedagogy are suggestions for extra classes or moving pronunciation classes to a different semester together with greater access to the language laboratories. Recommendations within the policy sphere include a need for

teacher training in technology usage and an invitation for the administration to lead the move towards technology rather than resist such a move.

Several students requested more pronunciation classes than the single 55-minute period currently offered in only the second semester of the student's two-year, four-semester course. Given the importance of accurate pronunciation this is something the Institute's administration should consider. However, it is recognised that one extra pronunciation class is likely to mean one less class for another subject. If an additional class were added the recommendation would be to place it in the first semester. Alternatively the existing pronunciation class could be moved to the first semester, from the second. There are two reasons for this recommendation. First, students are potentially learning incorrect pronunciation during their first semester in other subjects which may require 'un-learning' and second, imperfect pronunciation may actually be reinforced during the first semester. All students, because they are practising Muslims, have some Arabic knowledge yet many made mistakes in *SuratAl-Fatihah* (as shown in the pre-test). This indicates that some mispronunciation is already 'rusted on' or fossilised (Intercultural Communication Center, 2012). Consequently the earlier incorrect pronunciation is recognised the earlier it can be corrected through practice. There seems no logical reason to justify why pronunciation classes are located in the second semester rather than the first, given its importance to all other curriculum subjects.

Teachers should have access to descriptions in Arabic of the scientifically analysed phonological structure of the language. To be able to use such resources to see their language from the point of view of a foreign learner would be of considerable value to them as teachers and so to their students. Such descriptive works could

expand the structural analysis already and giving scientific terms in Arabic to describe the place and manner of articulation of each consonant. To prepare such work would be a relatively small task for English-speaking linguists, and given the long history of phonetics in Islamic culture it would not be a difficult translation task. Yet it would enable many students to see the overall structure of the language and not just the details of a series of difficult consonants.

If the Institute's administration can be persuaded that technology-aided learning offers benefits for students, the administration itself should be leading the move towards utilising technology. This research project has clearly demonstrated that even obsolete equipment could be made serviceable with some relatively inexpensive basic maintenance. Furthermore a student suggestion that language laboratories should be connected to the internet and that classrooms be available after hours could be taken up without much extra cost. If the available technology was capable of connecting to the internet, then the benefits to students would far outweigh the initial cost of cabling and wi-fi and the cost of maintenance. Also keeping classrooms open after hours would seemingly not be an expensive move either.

In the event of technology actually being introduced at the Institute, it is essential that teachers be provided with professional development on how to use it in their teaching. Not only do they physically need to understand how to get the maximum benefit from it, they also need to demonstrate in front of their pupils that they are competent in its usage.

In keeping with Bernstein's (1975) weakener classification, curriculum coordination between the subjects of pronunciation, grammar and vocabulary may improve learning in all three subjects as there is considerable overlapping of

boundaries. The aim is for the student to relate each letter to its place in the text, to relate the pronunciation of each consonant to its place in the flow of speech, and to relate comprehensive understanding to purposeful practice.

Although this research project and this thesis have concentrated on technology-enhanced constructivist learning, the fact remains that the introduction of technology will only be as successful as the effectiveness of its integration into the educational system. Such systemic change will depend heavily on the rational inclusion of technological solutions in the curriculum. To achieve a solution at the Institute and in other places where classical Arabic is taught, curricula needs to be created that depends more on understanding of student learning and less on repetitive, unorganised drill sessions.

I would urge the Ministry of Education to formulate a holistic policy regarding the delivery of curriculum through the use of technology. Such a policy could incorporate framework flexibility to permit it to be implemented in stages connected to the actual technology being used. Each stage could be related to a specific type of technology.

As elevating the level of computer literacy amongst the general population of Saudi Arabia is a government objective, in order to see this ambition fulfilled, there will be a continuing and growing need for additional material and human resources to see it occur. Therefore, training within the education sector amongst both academic and administration personnel is required. Effectively the trainers need to be trained in technology before the considerable resources the government has committed to technology can be fully exploited. This is imperative for two reasons: first, without it universities will be unable to fulfil the rightful role of building computer capacity and

leadership for a growing technology sector and second, tertiary faculty members need to both retain and build on their own technology skills in order to deliver adequate teaching services to their students, otherwise there exists the distinct possibility many students' technology knowledge will exceed that of their teachers.

9.5 Suggestions for further research

Based on the study and the scope of the literature review, it was recognised that there was a shortage of studies into Arabic language learning, indicating a need for further research. In particular, the shortage of Arabic resources in teaching Arabic pronunciation to non-native speakers emphasises the need for continuous development of materials and resources and research into the impact of learning and pedagogy in the Arabic context. Studies could be undertaken to determine what resources used for teaching English, for example, could be adapted to Arabic, and which resources could not be.

During the course of this study both teachers and students expressed beliefs that traditional teaching methods were outdated and should be replaced. All teachers who participated in the focus group had studied overseas, mostly in Western institutions where constructivist pedagogies were employed, so their opinions were based on actual experience. Many students also expressed opinions that better teaching methods existed based mostly on their perceptions rather than actual experience. While both teachers and students believed alternative pedagogies, based on technology, existed, they could not precisely specify what pedagogical approach would be most suitable for their institution, or more widely for the Saudi Arabian context. Therefore, I believe further studies should be undertaken about pedagogical approaches that would improve

both Arabic language acquisition in Saudi Arabian education broadly and Arabic pronunciation training more specifically. Western academic institutions did not replace their inherited behaviourist pedagogies from former decades instantly, and the same expectation cannot be made of Saudi Arabia. However, by studying the precise needs that exist in Saudi Arabia, particularly in Arabic language learning, and then deciding on the best pedagogies using experiences of other countries who have made this transition as a guide, would be helpful.

Despite apparent widespread support amongst teachers for change, little pedagogical change is actually taking place. Further investigations into determining why traditional teaching methods remain entrenched could be beneficial. If it can be convincingly demonstrated that improved learning outcomes for both students and teachers are the fruits of student-centred constructivist learning approaches, this will go a long way in supporting the necessary changer. It may be possible to challenge the roadblocks to widespread use of technology in education with a pedagogy that supports its use. Exploring the perceptions of teachers in Saudi Arabia in other language institutes towards the impact of the constructivist approaches on traditional teaching strategies would enrich the discussions about constructivist approaches in Saudi Arabian higher education and may help bring about a process of updating pedagogy.

Because this study was conducted with a single class over one semester without a control group using the prevailing pedagogy, further studies to reconfirm, reinforce or expand the findings would be desirable. Any such further study should contrast the results from students using behaviourist methodologies without technology with ones similar to this study. If results consistently show collaborative learning pedagogies

deliver improved learner outcomes in comparison to behaviourist approaches, then this ought to encourage educationalists throughout the Arabic speaking world, where behaviourist approaches predominate, to re-think their strategy. Therefore, further research at both tertiary and secondary levels would be helpful.

The university has a clear mission to see its graduates become competent professionals ready for leadership positions, yet there persists a disconnect between students and teachers. Not all comprehend or share the vision of the university. One means of connecting students and teachers to fulfil the needs of the authorised curriculum could be extensive use of online applications. Therefore, further research could be undertaken to discover whether the adoption of blended learning would improve the connection between students and teachers. Furthermore, an investigation of students' performance in blended courses using quantitative and confirmatory studies is recommended.

Finally, there is very little literature on the use of Bernstein's (1971, 1975) concept of classification and framing which can be a beneficial area for Arabic language studies. So, further empirical investigations utilising this work are recommended.

9.6 My personal reflection

Studying for a Master's degree in Jordan in 2002, I became aware of an exciting new philosophy in Western education: the constructivist approach. It seemed to contain elements of the old and new, social and individual and it suited me very well in setting my own learning goals and methods. In my doctoral research, as I focused on the uses of technology in teaching classical Arabic to foreign students, I could see that a

constructivist emphasis could help in enabling student learning. There was no need to fear the extending of knowledge. In '*tawhid'*, the broad scope of knowledge comprises '*naqliyat'*: traditional transmitted knowledge or the deductive logic of Islam on the one hand, and on the other '*aqliyat*: the rationally derived knowledge of the world, as shown in the inductively reasoned scientific knowledge of Islam's Golden Age.

Islamic education started from the mosque of the Prophet Mohammed as the first place or the centre of learning which continued to be the centre of education even after the Prophet Mohammed's death, starting from the Qur'an, *Hadith*, *Tafseer* (the interpretation of the Qur'an) and so on through time. These Islamic concepts created a generation of educated lovers of science because they were grown on the foundations charted by the Prophet Mohammed. By taking a look backwards, I find many examples how the early Muslim scholars contributed to the enrichment of knowledge in all areas of life including medicine, mathematics, astronomy etc. For example, Ibn Roshd and Ibn Sina reintroduced the work of Aristotle to Europe in the 12th century AD providing an example of how the minds of Islamic scholars creatively discovered new phenomena and ways of thought in an expanding world of knowledge. So I saw that it was an honour and my duty to attempt to introduce a more effective learning approach to breathe life into the study of the most significant vehicle of Islamic teaching the language of classical Arabic itself.

Saudi Arabia's economy has long been at the "mercy of commodity price volatility" (Alarabiya, 2016) and is a hostage to the oil price. With King Salman succeeding to the throne in 2015 many citizens have become excited about his plans for the country outlined in Vision Saudi Arabia 2030, a policy blueprint outlining the way forward to a non-oil dominated economic future. Part of the country's new vision

is economic diversity and support to develop the ambition and potential of the people. The country's growth depends on the development of its citizens' talents and capabilities. Part of the Vision 2030 (Vision2030, 2016) project is a commitment to update society with technology and support for the digital age. This, together with a pledge to cut bureaucracy, has implications for education. Bureaucratic obstruction at administration level has held back educational institutions across Saudi Arabia from embracing technology. A failure to exploit technology to its fullest in education has helped perpetuate traditional pedagogies. In education it is possible to build a better tomorrow by bringing pedagogical approaches into the 21st century, which I hope to play a part in doing. I enthusiastically support the King's vision for Saudi Arabia and aim to help fulfil it through improving classical Arabic pronunciation training. By upgrading the quality of language training in Saudi Arabia, this will not only reward individual students, but also make a contribution to the global Muslim community when graduated students return to their home countries. It is my wish to see students perform better in the studies and in life, because of an improved technology-based pedagogy. As many students plan to pursue positions of leadership, and can be expected to win such positions, if I can help them by imparting more knowledge through better learning techniques, technology and pedagogy then I feel my efforts will have been amply rewarded.

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Appendices

Appendix A: Pre-test

اختبار تحديد المستوى

المستوى الثاني

العام الدراسي 2012م /1433هـ

الاسم:..... الرقم الجامعي:.....

الكلمة	لا يوجد	إبدال
مضار		
صوت		
حامد		
طريق		
ظلال		
عمارة		
خبز		
غلب		

1. بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ(1) الْحَمْدُ لِلَّهِ رَبِّ الْعَالَمِينَ (2) الرَّحْمَنِ الرَّحِيمِ (3) مَالِكِ يَوْمِ الدِّينِ (4) إِيَّاكَ نَعْبُدُ وَإِيَّاكَ نَسْتَعِينُ (5) اهدِنَا الصِّرَاطَ الْمُسْتَقِيمَ (6) صِرَاطَ الَّذِينَ أَنْعَمْتَ عَلَيْهِمْ غَيْرِ الْمَغْضُوبِ عَلَيْهِمْ وَلاَ الضَّالِّينَ (7)

عدد الأخطاء في السورة:

Appendix B: Post-test

اختبار تحديد المستوى

المستوى الثاني

العام الدراسي 2012م /1433هـ

الاسم:..... الرقم الجامعي:.....

الكلمة	لا يوجد	إبدال
ضرب		
صابر		
حليب		
طلعة		
ظلمة		
عابد		
خزان		
غمز		

1. سافر معاذ بن جبل رضي الله عنه إلى اليمن داعيا إلى الله تعالى وقاضيا بين الناس بأمر من الرسول صلى الله عليه وسلم فقضى هنالك بالكتاب والسنة كما كان يجتهد في حل بعض المسائل

عدد الأخطاء في السورة:

Appendix C: Student information and consent forms

Human Research Ethics Committee

Office of Research Services

Participant Consent Form

This is a project specific consent form. It restricts the use of the data collected to the named project by the named investigators.

Note: If not all of the text in the row is visible please 'click your cursor' anywhere on the page to expand the row. To view guidance on what is required in each section 'hover your cursor' over the bold text.

Project Title: Teaching of Arabic Language proficiency (Pronunciation) to non native speaker. Designing interventions using ICT.

1- Age

2- Nationality

3- First language

4- Other language do you speak

5- Do you use information and communication technology in daily life

I ……, consent to participate in the research project titled Teaching of Arabic Language proficiency (Pronunciation) to non native speaker. Designing interventions using ICT.
I acknowledge that:

I have read the participant information sheet and have been given the opportunity to discuss the information and my involvement in the project with the researcher.

The procedures required for the project and the time involved have been explained to me, and any questions I have about the project have been answered to my satisfaction.

I consent to a one hour audio taping of an interview with the researcher and I am willing to participate in this research, knowing that I can withdraw from the study at any time, without affecting my relationship with the researcher/s now or in the future.

I understand that my involvement is confidential and that the information gained during the study may be published but no information about me will be used in any way that reveals my identity.

The researcher has the right to retrieve record at any time.

Signed:

Name:

Date:

Return Address: The university *******

This study has been approved by the University of Western Sydney Human Research Ethics Committee.

The Approval number is:

If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of Research Services on Tel +61 2 4736 0229 Fax +61 2 4736 0013 or email humanethics@uws.edu.au. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

WESTERN SYDNEY UNIVERSITY

Human Research Ethics Committee
Office of Research Services

Participant Information Sheet (General)

An information sheet, which is tailored in format and language appropriate for the category of participant - adult, child, young adult, should be developed.
Participant Information Sheet (General) Note: If not all of the text in the row is visible please 'click your cursor' anywhere on the page to expand the row. To view guidance on what is required in each section 'hover your cursor' over the bold text. Further instructions are on the last page of this form.

Project Title: Teaching of Arabic language proficiency (pronunciation) to non native speaker. Designing interventions using ICT.

Who is carrying out the study?

You are invited to participate in a study conducted by Sultan Almelhes, PhD candidate, Centre for Educational Research, University of Western Sydney under the supervisors of Dr Katina Zammit and Assoc Prof Carol Reid.

What is the study about?

The goal of this study is to determine the effectiveness of using ICT in teaching Arabic pronunciation.

What does the study involve?

This study seeks to identify effectiveness of ICT in learning pronunciation. thus, this study involves two phases. The first phase is, make pre-test for all students who agree to participate in conducting this study. Then students will study pronunciation via ICT for one semester. After that the researcher will conduct posttest to all participant students.

The second and last phase is doing focus group interviews with students who conducted posttest. In this step, the research will ask them questions about their own experience about study via ICT and what they found what likely difficulties that encountered them. What are their opinions in regards a new teaching method.

How much time will the study take?
The study will take one semester for teaching. As for the focus group interviews will take approximately 60 minutes to complete them.

Will the study benefit me?
The benefit for you, it will provide you new methods in learning that will assist you in developing and treatment of pronunciation difficulties.

Will the study involve any discomfort for me?
There should be no discomfort for you. Also it will provide the teaching and learning process for the study of pronunciation.

How is this study being paid for?
The study is being sponsored by Saudi Arabian Higher Education which has provided funding for a PhD scholarship.

Will anyone else know the results? How will the results be disseminated?
All aspects of the study, including results, will be confidential and only the researcher and my supervisors will have access to information on participants. The results will be disseminated through the completion of my PhD thesis, seminars, conference presentation and journal article.

Can I withdraw from the study?
Participation is entirely voluntary: you are not obliged to be involved and if you do participate -you can withdraw at any time without giving any reason and without any sanction or consequences.

Can I tell other people about the study?
Yes, you can tell other people about the study by providing them with the chief investigator's contactdetails. They can contact the chief investigator to discuss their participation in the research project andobtain an information sheet.

What if I require further information?
When you have read this information, you can contact Sultan, mobile number 056*******or via e-mail: 16735978@student.uws.edu.au if you wish to discuss it further and answer any questions you may have. If you would like to know more at any stage, please feel free to contact me or my supervisors Dr Katina ZammitK.Zammit@uws.edu.au and Associate Professor Carol Reid by e-mail c.Reid@uws.edu.au

WESTERN SYDNEY UNIVERSITY

لجنة أخلاقيات البحث البشري

مكتب خدمات البحث

ورقة: معلومات المشارك (عامة)

عنوان المشروع: تعليم إجادة اللغة العربية نطقا لغير الناطقين باللغة العربية، تصميم التدخلات باستخدام تكنولوجيا المعلومات والاتصالاتICT

من الذي يقوم بتنفيذ المشروع؟

أنت مدعو لتشارك في الدراسة التي يجريها : سلطان الملحس، والمرشح لنيل درجة الدكتوراه بمركز البحث التربوي بجامعة غرب سيدني تحت إشراف الدكتورة / كاتينازاميت والأستاذ المشارك / كارول ريد

حول ماذا تقتصر الدراسة؟

هدف هذه الدراسة تحديد فعالية استخدام تكنولوجيا المعلومات والاتصالات فيتدريس النطق.

على ماذا تتضمن الدراسة؟

تتضمن هذه الدراسة على تحديد فعالية تكنولوجيا المعلومات والاتصالات في تعليم النطق. لذلك تشتمل الدراسة على مرحلتين تتكون المرحلة الأولى على إجراء اختبار أولي لكل الطلاب الذين يوافقون على المشاركة فيإجراء هذه الدراسة ومن ثم سوف يدرس الطلاب عير تكنولوجيا المعلومات والاتصالات لمدة فصل دراسي واحد. وبعد ذلك سيقوم الباحث بإجراء اختبار بعدي الذي يجرى بعد إجراء التجربة لكل الطلاب المشاركين. في المرحلة الأخيرة سيتم إجراء مقابلات على شكل مجموعات والتي تهدف إلى معرفة أرائهم حول البحث من الطلاب الذين يقومون بأداء الاختبار البعدي. وفى هذه الخطوة ، سوف يطرح عليهم أسئلة تتعلق بخبرتهم الذاتية حول الدراسة عن طريق تكنولوجيا المعلومات والاتصالات وعما اكتشفوه والصعوبات المتوقعةالتي واجهتهم والاستفسار عنأرائهم المتعلقة بطريقة التدريس الحديثة.

ما هوطول المدة الزمنية التي سوف تأخذها الدراسة؟

سوف تأخذ الدراسة فصلا دراسيا واحدا بشأن التدريس. أما بالنسبة للمقابلات فسوف تأخذ تقريبا 60 دقيقة.

هل الدراسة سوف تفيدني؟

تنحصر الفائدة لديك بأنها سوف تزودك بطرق التعليم الحديثة التي تساعدك في تطوير ومعالجة صعوبات النطق.

هل تتضمن الدراسة أي مصدر إزعاج لي؟

ينبغيأنلايكون هناك مصدر إزعاج لك

كيف يتم تسديد رسوم هذه الدراسة؟

تتكفل وزارة التعليم العالي بالمملكة العربية السعودية بكامل النفقات.

هل سوف يعلم أي شخص آخر بنتائج الدراسة؟ كيف سيتم نشر النتائج؟

كلأوجه الدراسة بما فيها النتائج في غاية السرية، فقط الباحث والمشرفين هم من لديهم الحق في الوصول للمعلومات المتعلقة بالمشاركين وسوف يتم تشر النتائج خلال إكمال دراستيللدكتوراه عن طريق عرض المؤتمرات والمقالة الصحفية.

هل أستطيع أن انسحب من هذه الدراسة؟

المشاركة بالكامل سوف تكون تطوعية ولا تلزمك بـأن تشارك ويمكنك الانسحاب فيأيوقت بدون أن تقدم أي سبب للانسحاب ولن يكون هناك أي عقاب أوجزاء.

هل استطيع أن اخبر الناس الآخرين عن الدراسة؟

نعم، تستطيع فعل ذلك وإخبار الناس عن الدراسة وإعطائهم تفاصيل عن الباحث الرئيسي ويمكنهم الاتصال على المحقق الرئيسي لمناقشة مشاركتهم في المشروع والحصول على ورقة معلومات.

ماذا لو أريدأن أتعرف على المزيد من المعلومات ؟

، أماإذا رغبت في مزيد من 05XXXXXXXعند قراءتك لهذه المعلومات تستطيع الاتصال على سلطان رقم النقاش والإجابة على أسئلة تجول بخاطرك أو لو أنك أحببت معرفة الكثير من الأمورفي أية مرحلة من المراحل فلك كامل الاختيارفي الاتصال بسلطانأو على مشرفتي الدكتورة / كاتينازاميت عن طريق البريد الالكتروني K.Zammit@uws.edu.auأو على الأستاذ المشارك c.Reid@uws.edu.au

ماهي الخطوات التي أتبعها لو كان لدي شكوى؟

. ولو H9689تم اعتماد هذه الدراسة من قبل لجنة أخلاقيات البحث البشري بجامعة غرب سيدني تحت رقم الأخلاقي لهذا البحث عليك الاتصال بلجنة الأخلاقيات عبر مكتب كان لديك شكاوي أو تحفظات تجاه المسلك أو عبر الإيميل61247360013 + والفاكس 0229 4736 2 61+خدمات البحث على الهاتف humanethics@uws.edu.au

عند طرحك لأية قضية سيتم التعامل معها بثقة وتحر كامل وبالتالي يتم إعلامك بالنتيجة.

مشارك. الموافقة على نموذج التوقيع منك يطلب الدراسة،قد هذه في على المشاركة وافقت إذا

Appendix D: Example of reflective journal

Class 8

So far, there was always at least one student absent each day. But today everyone was present. One of the students told me that there was a reading examination the next day and they wanted more practice. Some of them in fact asked me to let them read out sentences to focus on correct pronunciation. Furthermore, students continued to ask about the meaning of certain words, and so I realised that word meanings was a common issue, and this was confirmed in focus group sessions also. A teacher in charge of pronunciation teaching to another class came to the laboratory and said one of his students had told him about my teaching method. He asked if he could sit in on the class. Hearing about this student/teacher dialogue was of course very gratifying. It served to consolidate my belief in an audiovisual approach to learning pronunciation combined with the need to ensure the acquisition of the words that embody pronunciation in the use of Arabic.

Appendix E: Student's focus group questions

1. What do you think about the amount of information included in technology?
2. Tell me about any problems you had while using technology?
3. What would you suggest to improve this program?
4. In your opinion, what were the advantages of using technology during Arabic language teaching classes?
5. What are suitable methods of learning pronunciation?
6. Do you like to work in a group or individually in learning Arabic pronunciation and why?
7. Did you prefer to work with a native speaker in learning Arabic pronunciation or not? Why?
8. What might you suggest to the staff regarding more effective teaching methods?
9. What strategies did you find most effective in helping you to improve your pronunciation?
10. How did you feel about the teaching strategies used?
11. What strategies improved you motivation as a student?
12. Did teachers use any kind of technologies in classroom teaching?.

Appendix F: Teacher information and consent forms

WESTERN SYDNEY UNIVERSITY

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Office of Research Services

Participant Consent Form

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Note: If not all of the text in the row is visible please 'click your cursor' anywhere on the page to expand the row. To view guidance on what is required in each section 'hover your cursor' over the bold text.

Project Title: Teaching of Arabic Language proficiency (Pronunciation) to non native speaker. Designing interventions using ICT.

1- Age:.....

2- Nationality:.....

3- What is the extent of your using of ICT: please tick one of them

Always ( )

Usually ( )

Often ( )

I do not use ( )

4 - Qualification:.....

5- other languages do you speak: .....

6- Have you ever got the e-learning courses : If the answer is yes, please mention:.....

I ……, consent to participate in the research project titled Teaching of Arabic Language proficiency (Pronunciation) to non native speaker. Designing interventions using ICT.
I acknowledge that:

I have read the participant information sheet and have been given the opportunity to discuss the information and my involvement in the project with the researcher.

The procedures required for the project and the time involved have been explained to me, and any questions I have about the project have been answered to my satisfaction.

I consent to a one hour audio taping of an interview with the researcher and I am willing to participate in this research, knowing that I can withdraw from the study at any time, without affecting my relationship with the researcher/s now or in the future.

I understand that my involvement is confidential and that the information gained during the study may be published but no information about me will be used in any way that reveals my identity.

The researcher has the right to retrieve record at any time.

Signed:

Name:

Date:

Return Address: The university *******

This study has been approved by the University of Western Sydney Human Research Ethics Committee.

The Approval number is:

If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of Research Services on Tel +61 2 4736 0229 Fax +61 2 4736 0013 or email humanethics@uws.edu.au. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Appendix G: Teachers' focus group questions

1. How is e-learning currently used at the Institute of Arabic Language for Non-Native Speakers at the university?

2. How do you use technology in your teaching practice?

3. What types of technology do you use in your teaching practice?

4. To what extent do you rely on technology in your teaching practice?

5. How are you currently trying to solve problems you encounter with students in regard to them mastering correct pronunciation?

6. What do you think are the most important factors that promote using technology in your teaching practice?

7. What hinders using technology in your teaching practice?

8. Do you think the use of technology by teachers is adequate? And way?

9. How did you learn about using technology for teaching?

10. Do you think that you need to complete several courses to know how to use technology in teaching? What courses have you done?

11. Who is responsible for facilitating the use of technology in the institute? How do they fulfil policy concerning promoting technology in teaching?

Appendix H: Coding process

Excerpt	Preliminary code(s)	Common themes or issues	Sub-category	Category	Theme
If the administration adopts the concept of e-learning, this will help all the teachers to use it; but if it is not adopted then there is an obstacle. University departments should be responsible for facilitating and providing technology in the institute.	Adoption of E-learning in educational context by university Building an integrated structure Responsibility of university departments in preparing technology	Highlights the use of technology if the university accepts it University departments play a key role in facilitating the use of technology	University administration	University and Institute policies	Technology use in the learning context
There should be a rule towards technology use at the institute.	Mandates or rules to use technology	Contextual initiatives which results in technology use	Context of education within the institute	University and Institute policies	Technology use in the learning context
Current curriculum and educational policies regarding technology use in the classrooms or laboratories are not active.	Deactivated content of current curriculum about technology use	Changes in the educational policies impose challenges for teachers to integrate technology in education Enforceable technology policies in the curriculum	Educational policies, procedures and guidelines	University and Institute policies	Technology use in the learning context
We are still at the old building and all the preparations which they are working on now, including electronic smart class room, are designed only for the education college for distance – learning and don't relate to the institute.	Old building Inappropriate building	Current buildings do not support the use of ICT in learning. Current laboratories do not meet the learning needs of the students	Condition of buildings and classrooms	Infrastructure	

Excerpt	Preliminary code(s)	Common themes or issues	Sub-category	Category	Theme
We can agree, obviously, the basic structure is very important. If it is just not there or if there is not complete preparation in terms of equipment and technology, this is obstacle. The main problem that we may face is that if there is lack of technical assistance in the Institute, so if the device breaks down completely, the teachers will lose all the saved data and information.	In complete preparation Availability of technology when it is needed	Technical support contributes to the limited use of technology in teaching and learning Ongoing maintenance	Technical support and maintenance		
The number of students compared to classroom size at the institute is a problem.	Physical size of the classrooms Old and insufficient devices	Size of the classroom and laboratories contribute to technology use. Insufficient and outdated technologies.	Age of devices and their suitability		
Financial cost is a big problem.	Costs involved in using technology	Financial support facilitates the provision of technology	Financial support		
Certainly I need it (training courses) because it helps in the development of the teacher's performance. I need continuous courses through a whole year because the technology is updating.	Attending training courses for use of technology	Training programs encourage teachers in using technology for teaching and learning Training for teachers enable them to use technology in teaching	Need for ongoing training about use of technology	Professional development in technology	

Excerpt	Preliminary code(s)	Common themes or issues	Sub-category	Category	Theme
I am focusing on the current curriculum because the curriculum is a common element between the student and the teacher. So, the current curriculum which was designed using a traditional methods, is not appropriate to the use of ICT. The current curriculum which has been designed by a traditional way does not match the aims of technology and hence is not appropriate to use for e-learning.	Inappropriate content of curriculum for technology use Out of date content curriculum Use of traditional curriculum	The current curriculum is old enough to warrant use of technology in learning Traditional content of current curriculum hinders the use of technology in practice	Need to update educational content	The need to redesign the content and its sequence of the curriculum	

Example of the coding process for student focus groups

Meaning unit (Excerpts from interviews illustrating the code)	Preliminary code(s)	Common themes identified	Sub-category	Category	Theme
It is best to work with a native speaker of Arabic whose Classical Arabic will assist me in the correct reading of the holy Qur'an. My choice will be the native speaker because Arabic is his first language. So, I benefit from him. But our main problem is that if we learn Arabic from the public people in the street, definitely, we will face the problem of the colloquial Arabic. Every person who wants to learn another language, he/she should live in the language environment and interact with the native speakers in their country.	Use of classical language Difficulty with learning in the absence of native speakers Living in the real environment Interacting with local speakers	Choice of a native speaker as an Arabic language expert to help them with pronunciation The correction of mistakes by a native speaker as a benefit Emphasizing interaction with native speakers in the real world	Interaction with native speakers Living in real social world (with Arabic context)	The desire to hear native speaker	Pedagogical insights
I preferred to study in groups because there might be a good student in that group from my home country to teach me how to pronounce Arabic well. I would like to study in groups because I benefit from good students in the group and some students feel shyness when he speaks in front of students.	Preferring group efforts towards learning Willingness to study in group Overcoming shyness through group activities	ICT-based collaborative learning would produce positive learning outcomes Group work and mutual activities encourage learning Working cooperatively reduces the feeling of shyness in class	Group learning activities and teamwork Working together towards improved learning	Collaborative learning	
If technology is used effectively and appropriately they can support and enhance diverse teaching methods and learning styles. The use of technology in the class fit more into individual learning and teaching activities than the traditional mode of teaching and as such can help students learn pronunciation and clarify their mistakes.	Using technology in different teaching ways More fitting of the technology in learning than traditional ways	ICT would shift teaching strategies away from traditional one to more technology-based ones and in favour of both students and teachers, and move learning	Efficient use of ICT in diverse teaching modes Useful application of technology in the classroom relative to traditional mode of teaching/learning	Technology supports different teaching strategy	

Meaning unit (Excerpts from interviews illustrating the code)	Preliminary code(s)	Common themes identified	Sub-category	Category	Theme
Although the students show interest in coming to this class, pronunciation should be examined. The students take care of this subject because the pronunciation has a relation with other study materials such as reading, so the test should be held.	Using technology to monitor and evaluate pronunciation skills by students	Students wanted do a pronunciation test because they felt they were improving their performance and wanted to be officially recognized	Using ICT as a self-assessing tool	Consistent performance monitoring and assessment of pronunciation	
I believe that the teachers should explain and show how to pronounce words and then we can practice this in the computer laboratory.	Receiving support and feedback from teachers Applying technology after receiving feedback from teachers	The use of ICT in education can fill gaps in student learning that may not be met by traditional teaching	Potential for the expansion of technology in education	Different approach to learning	

Example of the coding process for the reflective journal

Meaning unit (Observations from interventions/ fields)	Preliminary code(s)	Common themes identified	Sub-category	Category	Theme
The choice of laboratory for teaching was a big challenge for me both before commencing the study and during its implementation. Not all the four laboratories were equipped by up-to-date technologies. All the computers in the laboratories needed to be upgraded to enable the installation of the pronunciation software because the laboratories had not been used for many years.	Getting started	Selection of laboratory Lack of technical support	Update of computers	Establishing the learning environment	Learning space
During the first class session, I went to the normal classroom instead of the laboratory because the students were accustomed to studying in the classrooms, to remind students that the class was to be in the language laboratory instead. As anticipated none of the students had attended the laboratory and all were in the normal classroom.	Unfamiliarity	Students; confusion	Students' expected learning to occur in the classroom	Pedagogical expectations	