IMPACT OF PHONEMIC TRANSCRIPTION ON LEARNERS' SPELLINGS

By

RABIA SARWAT

NATIONAL UNIVERSITY OF MODERN LANGUAGES
ISLAMABAD

July, 2018

Impact of Phonemic Transcription on Learners' Spellings

By

Rabia Sarwat

M.A., National University of Modern Languages, 2009

A THESIS SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF PHILOSOPHY
in English

To

FACULTY OF LANGUAGES

NATIONAL UNIVERSITY OF MODERN LANGUAGES, ISLAMABAD

© Rabia Sarwat, 2018

NATIONAL UNIVERSITY OF MODERN LANGUAGES FACULTY OF LANGUAGES

THESIS AND DEFENSE APPROVAL FORM

The undersigned certify that they have read the following thesis, examined the defense, are satisfied with the overall exam performance, and recommend the thesis to the Faculty of Languages for acceptance:

Thesis Title: Impact of Phonemic Transcription on Learners' Spellings

Submitted By: Rabia Sarwat **Registration #:**1066-M.Phil/Eng/F15

Master of Philosophy
Degree name in full

English Linguistics
Name of Discipline

Prof. Dr. Arshad Mehmood _____
Name of Research Supervisor Signature of Research Supervisor

Prof. Dr. Muhammad Safeer Awan _____
Name of Dean (FoL) Signature of Dean

Brig. Muhammad Ibrahim _____
Name of DG Signature of DG

_____
Date

CANDIDATE'S DECLARATION FORM

I Rabia Sarwat

Daughter of Gulam Jilani

Registration # 1066-M.Phil/Eng/F15

Discipline English Literature

Candidate of **Master of Philosophy** at the National University of Modern Languages do hereby declare that the thesis **Impact of Phonemic Transcription on Learners' Spellings** submitted by me in partial fulfillment of M. Phil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

I also understand that if evidence of plagiarism is found in my thesis/dissertation at any stage, even after the award of a degree, the work may be cancelled and the degree revoked.

_____

Signature of Candidate

Rabia Sarwat

Name of Candidate

_____

Date

ABSTRACT

Thesis Title: Impact of Phonemic Transcription on Learners' Spellings

Learning of Phonetics and Phonology is a troublesome task for foreign language learners. One of the common problems associated with the subject of Phonetics and Phonology is the lack of correspondence between sounds and letters which leads to the confusion between spellings and pronunciation. The subject of Phonetics and Phonology is added in language courses to improve the pronunciation of language learners. For this purpose, phonemic transcription is a tool used for a better pronunciation and identification of sounds. The aim of the present research was to explore the impact of phonemic transcription on English spellings of the English language learners. In order to explore the impact, twenty four Phonemic Passages from each subject, a Post Test and a Focused Group Discussion were used as tools for data collection. The research design selected for this research was Mixed Method Pre Experimental study, conducted at Diploma level at the Functional Courses (FC) Department of NUML, Islamabad. The basic research design was Pre Experimental, One Shot Case Study with the addition of a Focused Group Discussion. The Focused Group Discussion was added in this research in order to triangulate and consolidate the results. Cook's classification of spelling errors was adapted as a model for the categorization of intra lingual spelling errors committed under the impact of phonemic transcription. The findings reveal that with continuous practice, certain consonantal sounds like /ð/, /ʃ/, /tʃ/,/s/, /k/, /z/, /f/, /w/ and vowel sounds like /i:/, /i/, /æ/, /ʊ/, /ɒ/, /ʌ/, /ə/ showed the negative impact of sounds on spellings. While in case of diphthongs only two sounds like /aɪ/, and /eɪ/presented the impact of sounds on spellings. Based on the findings of the research it is recommended that the subject of Phonetics and Phonology be integrated with reading or writing skills.

Key words: phonemic transcription, spellings, consonants, vowels, errors

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGEMENT

First of all, I am thankful to Allah Almighty, who gave the strength and capability to compete this dissertation. Then I would like to thank our Holy Prophet, Muhammad (peace be upon Him) whose teachings enable us to recognize our creator.

I would like to express my gratitude to my research supervisor Professor Dr. Arshad Mahmood for his precious time, valuable insights, expert guidance, very special patience, encouragement and faith on my abilities that motivated me and to grow as a researcher and to complete this thesis.

I also want to acknowledge the role and support of my parents, my Husband Asif Rasool, my sister Sadia Rasool, my brother Aqeel Anjum and my friends and colleagues specially Mam Kishwar, Mam Afsheen and Mam Asmat who encouraged and helped me to accomplish my task despite of many difficulties and challenges.

DEDICATION

I dedicate this thesis work to my beloved mother.

CHAPTER 1

INTRODUCTION

This chapter presents the importance of English language learning in Pakistan as an effective source of communication and education. The details provided in this chapter are helpful for developing the background of mal pronunciation in English and the effectiveness of *International Phonetic Alphabet* (IPA) for the better pronunciation of language learners. It also explains the requirement and effectiveness of teaching of Phonetics and Phonology in Pakistani scenario with problem statement, research objectives, and research questions. At the end, the significance, delimitation and research methodology of the study are given to explicate the dimension of this research.

1.1 Importance of English

Language is an effective mode of communication among people of different cultures. Globalization has made learning of foreign language a necessity of contemporary time. Among all dominant languages, English possesses a higher status. De Swan (2001) named it *hyper central language* that connects the entire world as a single source of communication. In view of the domination of English over the world languages, it is acknowledged as a lingua franca, a common means of communication used by different nationals. Speaking English has become a common practice across the urban world. In an article, Mahu (2012) mentions a sum total of 380 million native and 300 million non-native speakers who speak it as a second language. An additional 100 million people use it as a foreign language. According to him, it is either an official or co-official language in 45 countries and where it does not have any such status, it is still used widely. By keeping this view in mind, non-native learners from different backgrounds are eager to bring proficiency in use of the language. The language learners are also becoming the part of learning this lingua franca for the sake of acceleration in the field of business, trade, and education.

Utility of the English language pertaining to its significance is evident in multiple facets. Whether it is about international diplomacy or global affairs by diplomats and higher officials or issues related to immigrants; travelling or destinations guide provided to tourists even in countries which do not converse in English; seeking better job prospects or as a medium of instruction, the use, preference and domination of English over other languages cannot be challenged and is indisputably inevitable. So, in a globalized and interconnected world, the importance of English cannot be understated. Knowing English has paved way for better opportunities of living a successful life and we can move easily anywhere in the world without facing any communication barrier (Reddy, 2016).

1.2 Background of Mal Pronunciation in English

Like any other language, English is also comprised of four skills which in natural order are listening, speaking, reading and writing. In learning a second or foreign language, their importance cannot be ignored. During the learning process, learners encounter a number of problems related to grammar, vocabulary, spellings etc. Learners find it really difficult to learn the exact spellings and there are different reasons behind this (Al-Bereiki & Al-Mekhlafi, 2016). Apart from these skills, knowing and mastering the correct pronunciation of words is equally important as well as demanding.

There are multiple reasons which make English hard to pronounce. One of such fundamental causes is the non-phonetic nature of the language. It means that there is no correspondence between English letters and sounds. Thus, one of the universal problems faced by English language learners is the non-transparent nature of English pronunciation. Khansir and Tajeri (2015) also mention that English spellings are not represented appropriately through English pronunciation. Unlike other languages like *French* and *Urdu,* this lack of coherence between spellings and pronunciation of English words is due to the disparity between the number of sounds and letters in the language. The sound system of English language is composed of 44 sounds vis-à-vis 26 letters (Cook, 2004). This discrepancy between sounds and symbols occurs in various forms. For developing a better understanding of its pronunciation, it is pivotal to know its sounds or phonemes. A phoneme is the smallest unit of any sound system which is responsible for bringing any

discrimination between words, which eventually leads to a change in meanings (Ramesh & Thirupathi, 2011).

The same alphabetical letters can be used to represent different sounds. For example, the letter <s> has /s/ utterance in words like *chase* and *purpose* but the same letter also gives the sound of /z/ in the words *poison* and *always*. Similarly, a combination of letters produces different sounds in different phonetic contexts. For instance, *ch* produces /ʃ/ sound in *machine*, /k/ in *monarch* and /tʃ/ in *chief*. Similarly, a combination of letters like *ough* produces /f/, /u:/ and /ʌ/ different pronunciation in different words like *cough* / kɒf/, *through*/θru:/, *bough*/baʊ/and *thorough*/ˈθʌrə/ respectively, all have the same ending with different pronunciation (Ramesh & Thirupathi, 2011).

Contrary to the prior discussion, the same sound can be produced by different letters or by the combination of letters in English. For example, sound /n/ is produced by different letters like *n* in *men*, *nn* in *funny*, *gn* in *sign* and *pn* in *pneumonia*. There are also many silent letters in the English language which are a source of misconception and hence, are mispronounced by the non-native learners/speakers of English. Due to this disparity between phoneme and letters, pronunciation and spellings are found irregular. Even the native speakers have problem due to this inconsistency between letters and sounds. Cook (2004) also supported the same idea by explaining that English spellings are considered an unavoidable hurdle which further leads to complete failure in reading. This associate with the inconsistent relationship between English grapheme and phonemes. These irregularities in the nature of English language can cause mispronunciation of English words

Historically, this problem happened as a result of major changes in the phonemic structures of English language in different time frames. With the arrival of numerous invaders, the sound system received changes according to foreign influences. But in this context, spellings did not show a lot of transformations. Imbalance alteration between spellings and pronunciation leads to this present form of non-phonetic English language. Through this, it can be determined that English orthography is not the accurate depiction of English pronunciation of words and it is one of the major causes of mispronunciation.

1.3 Introduction of International Phonetic Alphabet (IPA)

In order to reduce the matter of inconsistency between phonemes and letters, International Phonetic Association devised a system of IPA or *International Phonetic Alphabet* in 1888. This system was introduced to arrange an accurate representation of sounds. For non-native speakers, IPA acts as a guide that reduces the confusion between sound-symbol relations. A variety of phonemes are transcribed in English using this system which consists of alphabetical symbols (like /k/ and /n/) and non-alphabetic symbols (like /:/ and /'/) called diacritics. These symbols not only stand for the distinctive sounds but also show other aspects of sounds such as length and intonation. Furthermore, these symbols are essential because graphemes used in writing are not multi-purpose to cover different facets of speech (Pelttari, 2015). Some of the English sound symbols are similar to the English letters in writing but these are used for the representation of sounds, not letters.

1.3.1 Transcription Practice in Language Classes

With the help of these IPA symbols, words are represented in terms of phonetic alphabets or phonemes which is called phonemic transcription. It is a technographic kind of writing used for the representation of speech sounds. With this training, every sound can be identified as a separate phoneme and written with appropriate symbols. About phonemic transcription, Morris-Wilson (2003) states that phonemic transcription is a way for analyzing and improving the wrongly articulated sounds that happen due to pronunciation problems. Being non-phonetic in nature, the pronunciation of English words cannot be guessed; sometimes two or more letters stand for the same sound, sometimes a letter symbolizes many sounds like "c" as in cake /k /, city /s/ and choose / ʧ / and at times, one letter stands for a sequence of two sounds (Ramesh, 2011). So transcription is an instrument which can work as a suitable system for both, the language instructors and learners to discuss problems and issues in pronunciation clearly and unmistakably (Mompean, 2015). Therefore, learners should be able to distinguish each sound to be apt in transcription (Robinson et al., 2011). This will definitely help them to pronounce a newly encountered word accurately without any hesitation**.**

These transcription exercises can be practiced in different forms. In one type, phonemic transcription is practiced through a dictation test, where a student listens to

the recording and transcribes it. In another type,a learner is given a passage in an orthographic form which he is supposed to transcribe into phonemic symbols or he has a phonemically transcribed passage for its conversion into normal spellings. All these transcription exercises are conducted in the language classes for the sake of developing the familiarity with the sounds of English language. This designed practice of sound awareness in the language classroom would assist learners to get rid of pronunciation problems (Stasiak, 2006).

1.4 Pattern of Language Programs at University Level

Pakistan is a multilingual country with almost 65 languages but the dominance of English is quite patent in all fields of life (Rahman, 2006). Due to the requirement of English in all fields of life, many universities and institutions have made their separate departments of the English language where various language programs are offered including short courses and degree programs. In every semester a large number of language learners take admission in these English language programs with various requirements.

National University of Modern Languages is one of those universities where a separate department has been established for the English language courses. Here language learners are allocated at different levels according to their performance in tests and interviews. At the beginners' level, learners are placed at Foundation and Certificate levels while the better language users are placed at Diploma and Advanced Diploma levels. In case of Foundation and Certificate levels, course contents comprise basic four language skills that include speaking, listening, reading and writing. While at Diploma level, better language users are placed who receive guidelines regarding the four language skills with an additional subject of Phonetics and Phonology. The subject of Phonetics and Phonology deals with the sound system of the English language and is added in the course content of Diploma for the better pronunciation of English language learners. Minimum criterion for the selection of Diploma students is Intermediate certificate but in some cases, students with higher qualification also apply for Diploma courses. Moreover, their performance in an interview also matters a lot and helps in determining their levels of courses.

These Diploma students have already learnt their alphabetical system without any awareness about the sound system of English. The process of sound awareness is

called Phonemic awareness, an ability to identify distinct sounds in a spoken word which is quite helpful in developing reading skills (Yopp, 1992). In Pakistan, limited schools and colleges are providing phonemic awareness at beginners' level. When these learners are asked to learn sounds after twelve years of formal education, it confuses them. This problem takes place due to the lack of correspondence between English sounds and letters, which leads to spelling difficulties.

In order to teach the subject of Phonetics and Phonology, phonemic transcription is a common practice used in language classes that provides awareness about phonemes in written form. During transcription practice, language learners develop a conflict between the sounds and letters of English as there are 26 letters and 44 sounds. It also happens due to the difference in the training time frame of alphabets and a sound system. Majority of language learners have not received any kind of training at school or college level. As a result, their knowledge of sounds starts overlapping with the knowledge of spellings and they may misspell many common words under the impact of sounds. These spelling errors may be categorized as intralingual errors that occur due to the partial knowledge of sounds under the impact of phonemic transcription. More and more a language learner becomes involved in phonemic transcription, more spelling errors may start appearing in his written script. Though there is no such evidence in the form of a formal inquiry as yet.

1.5 Statement of the Problem

The course of Phonetics and Phonology is offered by some universities now for the better pronunciation of the second/foreign language learners. Studies have shown that language learners from different areas of Pakistan have complicated issues of pronunciation (Mehmood, 2014). This may be because of the reason that in the educational system of Pakistan, pronunciation is not taught at schools. During her teaching tenure at NUML as a phonetics teacher, the researcher had been observing the problems that the Pakistani learners encountered in building normal English spellings while studying English sound system. This ignited her interest in exploring any impact of these sounds on learners' spelling if it exists. Apart from the positive effect of improving pronunciation, certain negative influences of phonemic transcription had also been observed through the classroom teaching practice which appeared after providing phonological awareness. The purpose of this study is to

discover/examine the impact of phonemic transcription on learners' spellings ability at Diploma level.

1.6 Significance of the Study

The present study is significant in many ways. First of all, it has educational significance when it explores the problematic areas of language learners in terms of impact of phonemic transcription on spellings of students, particularly at Diploma level. Commonly, the subject of Phonetics and Phonology is added in language courses to improve the English pronunciation of language learners. For this purpose Phonemic transcription is considered as an effective tool for teaching pronunciation. In this regard, the present research is different in a sense as it finds out how teaching of Phonology (in the form of phonemic transcription) causes spelling errors instead of discussing errors due to the difference between sounds and pronunciation. Secondly, this provides the detail about consonantal and vowel sounds causing spelling errors committed under the impact of Phonemic transcription. It is also helpful to find out which English phonemes are more complicated in this regard as compared to others. Awareness about these sounds is helpful for teachers of Phonetics and Phonology, in order to reduce the confusion between sounds and spellings.

1.7 Delimitation

This research is limited to the Diploma students who were enrolled to learn the English language course offered at FC Department, NUML, Islamabad. Twenty-five students of diploma class were selected for the research purpose. The intent of selecting NUML for this experiment was established due to the reason as NUML is one of those very few universities where the course of Phonetics and Phonology is offered in a detailed manner. The delimitation of course content for the research purpose was based on the teaching of consonants and vowel sounds which include pure vowels and diphthongs while triphthongs were excluded as these were not commonly used speech sounds of English language.

This research has also been delimited to reasonably mature language learners of Diploma with the minimum qualification of Intermediate. Participation of these learners reduced the possibility of already weak spellings which appears as a common complaint by language teachers at Foundation and Certificate levels.

1.8 Research Methodology

The current study is a mixed method Pre-Experimental in nature. As a Pre-Experimental research, it has selected a single group under observation for the purpose of the experiment. The pretest was not possible for these language learners as they did not have any background knowledge of English sounds. Due to the selection of a single group in a pre-experimental design, it is termed as One Shot Case Study. For this, the group has been observed for the period of one semester. In first two months of the semester, subjects were provided with the knowledge and awareness of English sounds which include consonants and vowels. In the remaining two months, the practice sessions were held in which transcription passages were given to the subjects and they were supposed to convert them into normal spellings and vice versa. After the treatment of one semester, a detailed test was planned for the same subjects. Secondly, a Focused Group Discussion was conducted from the six teachers, working in Functional Courses Department (FC), NUML, Islamabad. This Focused Group Discussion, which was analyzed and interpreted qualitatively, was added to research to validate the results of the study.

1.9 Research Questions

- What is the impact of phonemic transcription on English spellings of foreign language learners?
- What type of spelling errors are committed by Pakistani EFL learners due to the knowledge of phonemic alphabet?

This chapter is organized to develop the introduction and background of this study. The subsections of this chapter highlight the background of mal pronunciation and the introduction of IPA for English language learners. All other details added in this chapter are obligatory to explain the nature, mode and the procedure followed for the present study.

CHAPTER 2

LITERATURE REVIEW

This chapter describes the importance of pronunciation in foreign language learning. It has highlighted the significance of accurate pronunciation for the sake of acceleration in any field of life. Later on, the teaching of pronunciation and Phonetics and Phonology are discussed with reference to various researches. The concept of the phonemic and orthographic system of English language has been discussed in detail as the area of research revolves around the relationship between sounds and spellings. The chapter also explains the various kinds of phonological, orthographic and intralingual errors that occur due to the difference between the alphabetic and phonemic training in different time periods. The theoretical background of error analysis and its implementation in English as a Foreign Language (EFL) classroom teaching have been presented in this chapter. Regarding the importance of errors in developing the second language, many studies have been discussed in order to investigate, identify, and analyze students' errors.

2.1 English as a Source of Communication

English is considered as an international language because it is an inclusive source of communication (Mckay, 2002). This status of English is not only based on the majority of native speakers, but also on a huge number of non-native language users. According to the statistical data provided by Crystal (2008), there are around two billion speakers of English around the globe. Among these two billions of English language users, half of the population is using it as a second or foreign language (McKay, 2002). Even in Pakistan, English is dominant in different fields of life, either as an official or second/foreign language. According to Ghani (2003), the English language is an entrance point for achieving a highly regarded position in society. It is assumed as a language of higher education and the status symbol for a particular class of society. The dominant status of English in Pakistan is established due to the historical association of elites and proto elites with this language (Rahman, 2002)

since the time of British Colonization and it is the only reason that language learners from different areas of Pakistan are learning it for their survival in different fields of life.

2.2 Patterns of Learning a New Language

Learning a new language is a complicated phenomenon that requires proper training in the form of major and minor language skills. Learning the major skills of a language is classified into oral and aural skills while sub-skills of a new language deal with the improvement in pronunciation, vocabulary, and grammar. This sequence of learning a new language is considerably different from the natural acquisition of L1 which happens in natural settings. Even at the age of five, a child can convey his/her idea in a fluent manner (Sigurjónsdóttir, 2013).

In Pakistan, the trend of the second/foreign language learning, especially learning of English is inclined towards the perfection of oral skills because it is a marketable skill in practical life. Teaching of oral skills of the language is done in isolation, rather it is learnt side by side with other minor skills like pronunciation and intonation that make communication intelligible for the listener (Zhang & Yin, 2009).

2.2.1 Role of Pronunciation in Foreign Language Learning

The concept of using correct pronunciation in language learning is a diverse kind of learning as compared to the learning of vocabulary and grammar. Commonly in the language classroom, pronunciation is not receiving adequate attention (Derwing& Munro, 2005).

According to Yates (2016), pronunciation is the production of sounds that are used for making meaning. It is an aspect of verbal communication, used by the members of a speech community to convey their ideas effectively. In this scenario, Levis and Grant (2003) emphasized the implementation of systematic instruction program for the better pronunciation of the English language learners. According to their proposed framework, pronunciation needs to be integrated with speaking and listening activities instead of treating it as a single isolated area/skill. Levis (2005) highlighted two extreme approaches involved in teaching pronunciation. These are named as nativist principal and intelligibility principal. Nativist principal believes that native-like pronunciation should be used in the teaching of pronunciation. While the

modern ideology is in favor of intelligibility principal which believes that language should be just intelligible for listeners. According to the second approach, pronunciation teaching should be ignored in language classes. In spite of these two approaches, pronunciation makes an impression and uniqueness of an individual in language usage (Tregujeff, 2013).

2.2.2 Arrival of Phonetic instruction as a Pedagogy

Jespersen (1904) introduced the use of Phonetics and Phonetic transcription in language teaching. It is introduced as one of the advanced pedagogies that bring accuracy in pronunciation if it is implemented at the beginner's level.The *International Phonetic Association* (IPA) is a leading association helping learners improve their pronunciation through phonetic transcription. Saito (2007) explained the effectiveness of phonetic instruction with reference to better pronunciation, specifically in that scenario where language learners are not receiving an opportunity to interact with the native speakers of English language.

Gomes de Matos (2002) presented a list of rights which foreign language learners must avail in their language learning session. According to his claim, learners should be exposed to pronunciation instruction unambiguously and trained to understand transcriptions provided in dictionaries being the vital components of a language learning. Issakainene (2006) documented a report on the basis of an experiment conducted by Halonen and Peltoniemi. For this experimental study, two language teachers were taken as a sample assigned a task of teaching English to immigrants. Findings of the study featured the essential role of sound awareness in comparison to letters. This pattern of language teaching is commonly avoided in Pakistan where English language is taught through the alphabetical system and less emphasis is put on phonemic awareness.

2.3 Phonetics and Phonology

Phonetics and Phonology are the branches of linguistics that deal with the study of human speech sounds. Phonetics is an area of sound study that explains the production of speech sounds. It is a surface demonstration of spoken language which is considered as a disciplinary science, consisting of the four areas. These are Phonetic Transcription, Articulatory Phonetics, Acoustic Phonetics, and Auditory Phonetics. The process of writing words in terms of phonemes is called phonemic

transcription, which is commonly practiced in language courses of Phonetics and Phonology and it is helpful in improving the pronunciation of language learners.

Phonology, on the other hand, is an abstract system that deals with the organization of sounds with various influences and functions in a given language. Odden (2005, p.2) defines phonology as a detailed study of the sound structure in language. Pennigton (2007) validates it by saying that phonology deals with the sounds of a particular language and the system of sounds followed within the phonological framework of that language.

2.3.1 Sound System of English Language

English is non-phonetic in nature due to the constant inconsistencies between the sounds and letters of English language**.** English phonetic system has 44 phonemes (Roach, 2004). These 44 phonemes of the English are divided into 24 consonants and 20 vowels, which are the basic elements for learning the sound system of English. Consonant sounds are articulated with the partial obstruction of air stream which passes through the mouth. As compared to the vowel sounds the production of consonant sounds is easily comprehensible by the non-native speakers of English language due to some reasons. First of all, a kind of resemblance exists between consonant letters and consonant sounds in English. Secondly, there is only one way to pronounce a consonant sound and once language learners are trained to use various mouth positions for the production of consonant sounds, it is easier to produce these sounds accurately (Silveira, Zimmer & Alves, 2014).

Traditionally, studies related to pronunciation are divided into segmental and suprasegmental features of a language. Segmental features elaborate the phonemic study of language while suprasegmental features deal with stress and intonation patterns of a language (Crystal, 1992). Pennington (2007) defines segmental phonology as the branch of Phonology that studies speech through phonemic chunks. Linguists believe that every language has its own phonemic system. Crystal (2011) claims the number of phonemes in any language varies from the minimum range of just fifteen to as many as eighty, which can function in a particular language.

2.3.1.1 Consonants

English consonants are 24 which are demarcated by their utterance through the obstruction. It means these sounds are produced only when air stream coming from the lungs is blocked at some point in the oral cavity. Depending on the manner of articulation and blocking the flow of air, they are classified as stops, friction, affricates, lateral, nasal and semivowels.

2.3.1.2 Vowels

Remaining sounds of English language are 20 vowel sounds which are divided into twelve pure vowels or monophthongs and eight diphthongs (Hall, 2007). Trask and Scotwell (2007) define vowels as the human speech sounds produced with the least obstruction of articulators. Vowel sounds are subcategorized on the basis of mouth position and height of the tongue involved in the production of sound (Barry, 2008). Another important quality of vowel sounds is voicing that deals with the vibration of vocal cords (Kaye, 1987; Crystal, 1995; Ladefoged, 2001; Collins & Mees, 2003). All vowel sounds are voiced in nature while consonants are the amalgam of voiced and voiceless sounds.

Though vowel sounds are difficult to articulate by non-native speakers, the role that they play in pronunciation is crucial. These English vowel sounds are also diverse and more complicated in articulation due to various regional varieties of the English language that makes it a challenging task for the non-native speakers of English (Zimmer, 2014). Power (2003) highlighted 23 common pronunciation problems of English language learners, where majority of the problems were based on vowel sounds. According to Power (2003), foreign language learners face confusion in the identification of sound /ɪ/ with /i: /, mix up /ɔ/ with /ə /u/, / æ/ with /ei/ and /e/ with /ei/. This complication of vowels occurs due to the inaccurate articulation of language learner which leads to the sound identification problems in a word.

2.3.1.3 Diphthong

A diphthong is a sound made by the combination of two vowel sounds, in a single syllable**.** According to Crystal (2008, p. 146), diphthong is a vowel sound produced with the combination of two vowel sounds. Eight English diphthongs are high frequency sounds in the language. The specific quality of glide in vowel sounds

changes monophthongs into diphthongs. According to Crystal (2008, p.146), the process of monophthongisation is a change in the vowel quality from a diphthong to a monophthong. The rich and versatile use of monophthongs and diphthongs in English sound system makes it a challenging subject for foreign language learners.

Abbas (2011) explained the difficulties associated with the articulation of diphthongs among Pakistani language learners especially the centering diphthongs. This problem appears due to articulators which are trained according to the first language. Then, it becomes difficult to develop phonological accuracy in the target language at later stages. Hassan (2004) states that the major pronunciation problems for Pakistani speakers arise due to the mispronunciation of diphthongs as pure vowels, commonly practiced in Pakistani English named as Paklish.

2.3.2 Phonemic Transcription

In order to minimize the pronunciation problems of foreign language learners, phonetic and phonemic transcriptions are the visual aids used for the teaching of pronunciation in L2 classroom. It is the linear demonstration of phonemic symbols in written form. In language classrooms, transcription practice is anticipated as a better reflection of pronunciation than the normal spelling system specifically in case of notorious languages which retain complicated sound-spelling correspondence (Morris-Wilson, 2004, p.2). Due to the positive role of phonemic transcription, it is considered as a technique through which language learners can identify the phonemes of language accurately. Even though phonemic transcription is labelled as difficult by L2 learners, it is at the same time regarded as essential and helpful in mastering correct pronunciation (Lintunen, 2004, p 35). Moreover, Szypra-Kozlowska (2006) notes that EFL learner perceives transcription practice as an attractive activity. For this, the learner has to ignore learned spelling patterns and discover a novel system of sounds and symbols.

Aro (2004) suggested that the practice of phonemic transcription as a method of teaching precise and accurate pronunciation is effective in two ways. Firstly it provides phonemic awareness and secondly it plays an important role in understanding the orthographic system of the English language. As the relationship between sounds and spellings is unpredictable in nature and the concept of phonemic transcription acts as a moderator to reduce this vagueness of sounds and spellings at

beginners' level.

Nina Kuutti (2009) conducted an experimental study for the use of phonemic transcription as a teaching method in a language classroom. Two groups were selected for this study and treatment was provided to the experimental group in the form of sound awareness. After a specific time period, an oral test was conducted to explore the difference in the performance and interpretation of language learners. Findings of the study revealed that the experimental group paid less attention to the orthography while the controlled group made interpretations according to the orthographic system of the language.

2.3.3 Difference between Phonetic and Phonemic Transcription

Awareness of sounds and its execution as a teaching method is applied differently at different levels. Phonetic transcription is an umbrella term, presenting various kinds of transcriptions, also named as a phonetic script (Lintunene, 2004). In case of foreign language learning, transcription has different functions. The usage of these transcription practices in classroom activities varies according to the requirement of students in these classes.

Phonetic transcription and phonemic transcriptions are commonly adopted transcriptions used in language classes. Phonetic transcription is narrow in nature as it represents how sounds work in the spoken forms. On the other hand, phonemic transcription is a broader area which indicates the sounds solely. The major difference that exists between phonemic and phonetic transcription is that former deals with the sounds only while the latter handle it according to the location of sounds and events (Crystal, 2008). Learning phonemic transcription is effective for the learning of phonetics as it brings accuracy in the pronunciation of foreign language learners (Lintunen, 2004, p .36).

Phonemic transcription is easy in handling as it only explains the phonemic symbols surrounded by slant brackets / /. Symbols used in phonetic transcriptions are enclosed in square brackets [ ], used at the start of a word, sentence or paragraph and close at that place where a sequence of sounds ends. Phonetic transcription is also stated according to the acoustic property of a letter which indicates the variety of sound. For example, the phonetic transcription of "p" sound will be articulated differently in "nip", "pin" and "spin" due to the acoustic variances of sounds. Like

“p” sound in “pin” comes with maximum plosion and it is written as [ph.].The phonetic transcription of “spin “will be totally unpredictable because here weak plosion occurs after “s” sound and before vowel it is transcribed as [b]. According to the phonological perspective, the second language learners face difficulties in Phonetic transcription due to the acoustic properties of sounds. In the form of the broader area of sounds, phonemic transcription is commonly practiced for the second language learners.

These different practices are used to diminish the misunderstanding between sounds and letters which is a common problem observed in language classes. In Pakistan, phonemic transcription is a common kind of transcription practiced though rarely in phonetic classes for the better pronunciation of language learners. It also develops a distinction between sounds and letters in the mind of language learners. According to the educational system followed in Pakistan, the alphabetical system is implemented at beginners' level while the awareness of sounds is introduced at later stages.

2.4 Orthographic System of English Language

Combination of the phonemic and spelling system of language develops the pronunciation pattern of a language. Phonemic system explains the sound system that is used to form the pronunciation of a new word while orthography is the way a language is written.

In the English language, the relationship between phonemes and graphemes is unpredictable. De Francis (1989) admitted that the orthographic system of a language is assessed with reference to the phonetic aspects of the language. De Francis (1989) highlighted various factors, responsible for the lack of correspondence between English phonemes and graphemes. Firstly in the past, English orthography had linear sound-letter correspondence like *Mat* and *Stop*. However, a series of historical changes and the arrival of new invaders brought a new inflow of vocabulary that hailed from various influences like German, Dutch, Latin, Greek, and Spanish. These various impacts added up their own words to the English language. As a result, a straightforward alphabetical system, which was based on linear correspondence between sounds and letters, changed into the current spelling system. Secondly, the standard system of spellings was not in a specified form till the middle of the

eighteenth century. Sproat (2000) commented on the orthographic system that English is one of those few prominent languages whose spellings are not transformed in accordance with the historical reforms.

Susan (2011) suggests that the lack of correspondence between sounds and letters of English language is one of the major cause of spelling errors. In the current scenario, the status of English is non-phonetic because of the difference between the number of letters and number of sounds. English language comprises 44 phonemes which are signified by the 26 letters of the alphabetical system (Van Berkel, 2005, p.109). According to this phenomenon, language orthographies are viewed as deep and shallow orthographies. English is a language of deep orthography due to the inconsistent and opaque relationship between phonemes and graphemes. While in case of shallow orthography, grapheme to phoneme correspondence is guided by simple rules (Cook, 2004).

There are two views of the analysis of English spelling. The broader view of English spelling examines it on the basis of prefixes, suffixes, and word roots. While the narrow view about spellings deals with the phonetic function where sounds must be spelled in accordance with the letters. According to Ehri et al. (2001), there are about 41 phonemes in English. The number of phonemes is greater than the number of letters of the alphabet. A phoneme can be marked with a variety of graphemes, depending on the context, and vice versa. Ziegler (2001) made a recommendation for beginning readers to learn grapheme-phoneme conversion strategies so that they could overcome the problems caused by the non-phonetic nature of English. With this practice, they could develop a better spelling ability and learning process should be more protracted.

2.5 Relationship between Phonology and Orthography

Phonology and orthography are interlinked terms in the English language, playing an important role in determining the grapheme-phoneme sequence within a word (Garcia et al., 2010). According to the phonological aspect, English is a stress-timed language distinct from many other languages like Spanish and Polish which are syllable-timed languages. In English, stress is traced on one or two syllables while the rest of the word or sentence is unstressed. This is the reason that English sounds create confusion for the second language learners. On the other hand, the orthographic

system of English language is not a reliable guide to the current pronunciation system.

In normal settings, language instructors put more emphasis on letters of the English language but the sound system is commonly ignored by L2 users. Sounds are commonly ignored in language classrooms. As a result, various non-native varieties have been generated due to the wrong pronunciation of sounds (Sheikh, 2012).

The sound system of English language contains twenty-four consonants and twenty vowels while the orthographic system is based on twenty-six alphabets which create a conflict between sounds and spellings of English. For example, the word <school> alphabetically starts with three symbols<s+c+h> but in the form of phonemic symbols it starts with two sounds, /s/ and /k/. Similarly, the word <shore> starts with two letters<s+h> but according to the pronunciation, it is represented by only one sound, /ʃ/). Arndt and Forman (2012), confirmed that the number of sounds are linked with each vowel letter and this is the reason why vowels are more often misrepresented in spellings as compared to consonants.

Another complicated phenomenon is the presence of silent letters in English language. Easton (2005) explained the phenomenon of silent letters, causing the problem of mispronunciation for foreign language learners. In this context, the example of /r/and /g/ sounds are quite common (Ladefoged, 2001). Exception in the use of various sounds in various settings creates a problem for foreign language learners like letter *g* which remains silent in certain words like *campaign*, *reign,* and *sign* but it is prominent in certain words like *signal*, *signature,* and *resignation*. Larissa J. Ranbom and Cynthia M. Connie (2011) conducted an experiment to discover the process of mispronunciation detected in various words which have an inconsistent relationship between phonemes and graphemes. This research was intended to investigate the difference between spoken and written lexical representation but findings of the study highlighted the presence of silent letters in a word which are the main cause of misunderstanding for language learners. Finding of this study supported the development of phonological awareness in the spoken form of language. Instead of taking phonemes and graphemes as two different entities, it is more favorable to consider it as an interlinked form of language which will reduce the problem of mispronunciation. Even in Pakistan, English language learners are inclined to pronounce every letter present in the given word. This problem occurs due to the lack of consciousness about the phonemes and graphemes based rules of the

English language.

Secondly, the grapheme representation of words that begin or end with three consonant letters is different in case of phonemes. Like the word <school>, starts with three letters but two sounds are used to represent three letters. Similarly, words ending with three consonants are also represented with two speech sounds. For example, the word<graphs> and <laughs> have three consonant letters at the end which are represented with two speech sounds /f/ and /s/, respectively. This difference between spoken and written forms of English is another cause of making the wrong generalization about the English sound structures, leading to incorrect phonemic transcription (Yule, 2001). Basically, there is no one-to-one association between Standard English letters and sounds (Roca & Johnson, 1999; Skandera & Burleight, 2005; Akmjobi, 2009). Odisho (2005) featured the real cause of confusion between phoneme and grapheme when spoken and written forms both are handled simultaneously (p. 18).Due to these differences, it can be anticipated that phonemes and graphemes are not incorrect but inconsistent in nature.

Skandera and Burleight (2005) reported that 13.7 different spelling per sound and 3.5 sounds per letter in any language explain the discrepancy between spoken and written form of a language. This inconsistency is so prominent in case of English that Roach (1991) suggested learning English pronunciation through the phonemes rather than the letters. Kamhi and Hinton (2000) specified that all conventions of English spellings rely on phonological knowledge. Learners without sound realization and phonological knowledge face difficulties in acquiring orthographic knowledge. Abu–Rabia and Sammour (2013) believed that effective performance in English spelling is only possible through the process of segmenting spoken words into phonemic chunks. Pederson (2013, p.60) argued that lack of coherence between phoneme and graphemes becomes predictable when language learners show the conscious attitude towards the orthographic nature of English because there exists a kind of pattern between sounds and spelling. For example, the phoneme /e/ is commonly denoted by grapheme <ei>, as in rain because of the rule in English where phonological coda often condition the spelling of vowels (Dich & Pedersen, 2013, p. 60). However, Tops (2013) negated this idea and declared that mapping between sounds and letters cannot be estimated every time. In certain conditions prediction between phoneme and graphemes is not always accurate.

2.5.1 Role of Phonemic Awareness in Language Learning

In order to diminish the confusion between sounds and spellings of English language, the concept of providing phonemic awareness appears as an effective dimension. Phonemic awareness is an emerging ability for the identification of each phoneme or sound present in a word (Chapman, 2003). It is the process of understanding sounds in the English language (Pullen & Lloyd, 2007). Through the process of phonemic awareness, a kind of correspondence can be developed between the letters and sounds of the English language (Chappell et al, 2009). Basic intuition involved in this kind of teaching is to provide awareness about sounds and letters which can be helpful for decoding sounds in a word, for better pronunciation and for the prediction about spellings.

Knowledge of phonemic awareness to students is also helpful in learning the alphabetical principle of English (Manyak, 2008). Alphabetic principle starts when students start getting awareness of the sound system of the language (Pullen & Llyod, 2007). Blachman (2000) discussed the positive impact of phonemic awareness among young children that could be beneficial for developing a letter-sound relationship from the beginners' level. Even it can be used in improving other language skills like reading and writing skills. Effective readers use their knowledge of spelling pattern and sound to overcome their lacking in pronunciation and comprehension. In Pakistan, few school systems are working on the concept of providing phonemic and alphabetical principle simultaneously while majority schools start their basic education through the alphabetical system. As a result, the pronunciation of Pakistani language learners is faulty because one basic component of language learning is missing from their teaching.

2.6 History of Errors: Intralingual Errors

The inconsistent relationship between phoneme-grapheme is a major source of pronunciation errors. Errors are considered an essential element of language acquisition. There are many views about errors committed by foreign language learners. In 1950s, the behaviorists proposed a theory of language learning as a habit formation. According to behaviorists, errors hold back the process of language learning and they must be avoided. Contrarily to behaviorists, mentalists considered errors as an unavoidable and a necessary element of language learning. Chomsky

(1988) proved this idea that committing errors is a clear indication that learning is taking place.

Brown (1980) proposed two sources of errors in foreign language learning. First source of error is interference from a native language into the target language. These are named as interlingual or interference errors. Interlingual errors are based on the supposition that the second language forms are alike the first language forms. In this category of errors, learner develops a similarity between the forms of mother tongue and target language. These interference errors and their negative role was discussed by Fries(1945) and Lado (1957). But interference from the first language is not the sole reason for committing errors.

Recent researches explored the role of intralingual errors in foreign language learning (Dulay& Burt, 1974). According to this phenomenon, the partial knowledge of the target language is also the cause of committing errors. Schacter and Celce-Murcia (1977) explained that the difference between intralingual and developmental errors is vague in nature. Brown (1980) described that interlingual errors are explored at earlier stages of language learning but as learners start progressing in their level of language learning, intralingual errors are exhibited in the target language.

Richard (1974) explained the reason for intralingual errors that happen due to the partial exposure to the target language. He classified intralingual errors into four categories that include overgeneralization, ignorance of rules, incomplete application of rules and false concept hypothesized. Touchie (1986) added certain other categories of intralingual error into the classification of errors provided by Richard.

2.6.1 Simplification

Simplification is a kind of intralingual error where learners substitute the simple forms of the target language instead of the complex ones.

2.6.2 Overgeneralization

Overgeneralization deals with inappropriate implementation of language structures learnt through the target language. In this context, Littlewood (1984) presented the example of grammatical rules where a language learner used plural forms with “s” for even all irregular forms.

2.6.3 Hypercorrection

This kind of intralingual errors occurs due to the extra correction and unnecessary consciousness from teachers' side. Hypercorrection and faulty teaching both deal with the faulty teaching material and wrong teaching methodology. Even these induced errors are commonly observed in the phonetics classroom of Pakistani language learners where sound awareness is provided at the adults' level. Hereby providing sound awareness at the adults' level and the exact utilization for correct pronunciation create various kinds of pronunciation errors.

2.6.4 Ignorance of Rule Restrictions and Incomplete Application of Rules

It deals with the idea of applying the partial rules of the target language instead of the complete rules. Another category of intralingual errors proposed by Richard (1974) named as false concept hypothesis deals with the faulty concepts of the target language structure. This incomplete knowledge of the target language rules and false concept hypothesis leads to the incomplete application of rules and inadequate learning that becomes the reason for various intralingual errors.

With reference to intralingual errors, Abi Samra(2003) did an error analysis of Arab English language learners. According to the findings of this study, 35% of errors were interlingual in nature while 64.1% of errors were intralingual errors. Intralingual and developmental errors occur at that stage where learner has acquired the partial knowledge of target language. In this setting, many kinds of researches are conducted on Arabic language learners, who are learning English as a second language. These studies are intended to explore the interlingual nature of spelling errors because of the different nature of English and Arabic, language learners commit various kinds of spelling errors.

In this context of inter and intralingual errors, a two-way analysis of spelling errors was conducted by Mahmoud (2013). The researcher was intended to explore the root cause of error for Arabic students. Data analysis and finding of the study revealed that the 26% errors were interlingual errors while the rest of 74% errors were intralingual spelling errors. These intralingual errors were further categorized into certain other categories that included *addition, omission, substitution, sound based spelling errors, compound errors* and *misspelling based on homophonous words*. Three categories of Insertion, omission, substitution were taken from Cook's model

while *sound based spelling errors* were evaluated on the basis of the correct and incorrect pronunciation of words used in language classrooms. For this research data was gathered from the written composition. These kind of analyses are helpful to facilitate the learning process and essential to explore the spelling difficulties faced by language learners (Alzuoud & Kabilan, 2013). Contrary to the previous researches, present research aims to explore sound based spelling errors which occur on the basis of consistent phonemic transcription practices. Later on, the data were analyzed to find out the impact of sounds on spellings and to what extent teaching of sound has an impact on the orthography of language learners. Here pronunciation is not considered as the main focus.

Another research conducted by Dr Dina El –Dakhs (2012) was relevant to examine the patterns of spelling errors due to intralingual influence. Arab female high school graduates act as a participant of this research who composed a paragraph for the identification of spelling errors. Findings of study explore seven categories of spelling errors; *homophones, misrepresentation of vowel sounds, misrepresentation of consonantsounds, misapplication of spelling rules, silent letters, double letters,* and *mispronunciation*. Analysis of data presented certain sound based errors but remedial strategies are not mentioned in conclusion. Suggestions of this research were effective to bring improvement in spelling instructions and to design another curriculum that could meet the requirement of language learning.

Qiuhua Huang (2016) did an acoustic analysis of vowel sounds produced by Chinese college students through phonetic analysis software. These college students had a lot of problems in pronouncing vowel sounds in spite of proper training and guideline in a classroom. Findings of the study revealed that most of the vowel sound errors were produced due to the wrong use of tongue position and lip shape. This problem of pronouncing vowel sounds can be reduced by following the pronunciation parameters according to the foreign teachers.

2.7 Sound Based Spelling Errors

Generally, language learners face a lot of problems due to phonetic inaccuracies**.** The exact pronunciation is not possible due to the impact of the first language (Yang, 2001). O'Connor (2003) mentioned that the pronunciation errors follows a systematic pattern in its occurring. The main problem that occurs in the pronunciation of non-native speakers is the substitution of sounds. Language learners replace sounds with those which are close to their place of articulation according to their first language as they replace /p/ with /b/, /θ/ with /s/. Liang Enli (2014) examined the pronunciation problems of Mandarin, Chinese students. This study focused on the segmental phonemes of English language which included the analysis of consonants, vowels, and diphthongs produced by Chinese speaker. This sound analysis was based on various segmental sounds which cause pronunciation problems for Chinese language learners. Analysis of data explored consonant sounds causing pronunciation problems due to the reason that Chinese language learners replace English sounds with Chinese sounds. Secondly, they don't have plural forms in Chinese which also affects the pronunciation of English words. The same pattern of the first language influence was also observed in case of vowels and diphthongs. Findings of the study diagnosed that pronunciation errors of Mandarin speakers were interlingual in nature.

Bourassa and Treiman (2001) conducted a research for exploring the sound based spelling errors that occurred in English language due to the lack of phonological awareness. Recently, an area of phonological influences and difficulties has been explored by Ahmad Renaldi (2016). Here the objectives of this study intended to examine the difficult sounds which create a variety of pronunciation errors. For this purpose, learners were asked to pronounce certain words and later on their pronunciation of those sounds was compared with the correct pronunciation of the same sounds. Finding of the study featured that most of the consonant sounds created phonological problems for English language learners.

Sailaja (2009) discussed the Indian variety of English which influences the spellings of language learners due to the lack of coherence between spellings and pronunciation. Learners sometimes don't even look up the spellings of the words, they spell the words according to the pronunciation they hear in their environment.

Another common thread among the types of spelling errors is a large number of homophonous words in the language. Spelling is known to have an influence on learners' pronunciation and pronunciation can also similarly affect the way learners spell words. Mukesh Kumar's research (2013) discussed the orthographic errors at the undergraduate level in Bihar. He also discussed spelling errors due to pronunciation but he also discussed Indian English not the Standard English. Indian English comes in the category of a variety of the English language where there is a possibility of having the first language influences as well. While the present research is focusing on the teaching of Standard English sounds and its impact on learners' spellings.

Al Jarf (2009) conducted a research about the spelling problems of a foreign language learner that occur due to the lack of coherence between sounds and letters. It was a kind of dictation test practiced through listening. Analysis of data displayed various kinds of spelling errors where phonological and orthographical errors were the prominent one. Phonological errors included the inability to differentiate and hear all phonemes in a word while orthographic errors include the problems of doubling consonant, silent vowels, and homophones. Moat (1996) declared that phonological misinterpretation is one of the major cause of poor spellings.

One of the recent studies conducted by Al-Bereiki (2016) is quite effective in exploring the causes of spelling errors and possible remedies for the treatment of misspelling. The findings of the study explored various responsible factors for spelling errors of language students. Here highly rated causes of the misspellings were the complexity of the English spelling system, lack of correspondence between spellings and letters, poor reading proficiency and carelessness of students. In the light of the findings of this study, recommendations are made for proper teacher's training and curriculum development.

In the context of phonological difficulties, Han (2004) declared that adults are not able to get perfection over the phonology of a foreign language. These phonological errors turn into permanent errors that no teaching can correct. Wei (2008) explained the term phonological fossilization as the repetition of phonological errors that occur due to an incorrect acquisition of L2 pronunciation. Many of the above mentioned researches, based on sound spelling errors are referring to the pronunciation problems under the impact of sounds of English while the present research is dealing with sound based spelling error that happens due to the

relationship between sounds and spellings.

2.8 Orthographic Errors

Spelling is a vital element of written script and errors in spellings cause misinterpretation of the written text (Kuwaileh & Al Shoumali, 2000). Protopas (2013) made a claim about spelling errors and spelling ability of a foreign language learner. According to the findings of his study orthographic system of a language is responsible for various kinds of spelling errors and secondly, the spelling ability of learner relies on the individual level of competence. Na-ngam (2005) negated the idea of misspelling found at beginners' level, it also existed at a higher level. According to Yanyan (2015, p. 1629) spelling errors fall into two categories, that is *Typographic errors,* and *cognitive errors*. Typographic errors were same as mentioned in *Cook's classification of spelling errors, letter addition, letter insertion, letter omission, and transposition* while the cognitive errors occur due to the phonetic similarities between letters.

Ali Alsawi (2015) conducted a research on the spelling errors of Arab language learners. Findings of this experimental study featured the impact of L1 in learning of L2. By analyzing the data the commonly found spelling errors were consonant doubling, silent letters, final [e] and errors due to the vowel letters. This research was intended to examine the interlingual errors of Arabic speakers that occurred due to the impact of Arabic sounds on the English language. Similarly, Asma Al-Oudat (2017) made an analysis of spelling errors committed by English major students at BAU. Total 65 students were taken as a sample for this research who was studying the course of technical writing. Texts were taken from the technical writing course and data was analyzed according to *Cook's classification of spelling errors* that includes *addition, insertion,* t*ransposition,* and *omission* of spellings. In a broader sense, this study was established on the error analysis of L2 language learners. Findings of the study discovered the differences between English and Arabic language causing interlingual error.

Contrary to previous interlingual based researches, Eid M Alhaisoni (2015) conducted a research for exploring the type of spelling errors committed by Saudi EFL learners enrolled in an intensive English language program. *Cook's classification of spelling errors* was used as a model for categorizing the spelling errors of Saudi

language learners. Analysis of written text revealed the highest proportion of *letter omission errors* in comparison of other categories. Findings of the study revealed that Saudi language learners used the wrong combination of vowel and consonant letters according to the English pronunciation leading to the spelling error. The outcomes of the study suggested the interlingual and intralingual source of spelling errors. By using the same model of Cook, Al-Jabri (2006) analyzed the spelling errors for the fifth grade students of Oman. Findings of this study presented the highest proportion of *omission* and *substitution* errors while *transposition* and *insertion* errors were less in number.

Al-zuoud and Kabilan (2013) made a research on the spelling errors of 43 Jordanian university students, through the collection of written composition in 43 written paper. The analysis of data highlighted 228 spelling errors which were classified according to *Cook's classification of spelling errors*. Findings of the study indicated the highest frequency of *substitution* and *omission* error. Franklin Thambijose (2014) made a research on sophomore students to explore various kinds of orthographic errors. Findings of the study revealed various categories of errors that included, *addition, deletion, vowel changes* and *substitution of uncommon words due to the confusion of phonemes*. Apparently, this research was based on orthographic errors but findings of the study showed that orthography and phonology of the English language are interlinked and it is not possible to analyze it separately.

A new area spelling errors were explored by Asif (2016) to investigate the spelling mistakes committed by online students of Virtual University Pakistan. It is a common observation that spell checking software is effective to reduce the spelling mistakes of students. But finding of the study revealed various categories of mistakes, like keyboard adjacency errors, space inaccuracy errors, vowel substitution, consonant substitution, vowel omission, inflectional endings, tense mistakes, and letter reversal. Few of these mistakes were typing mistakes while major spelling mistakes were based on lack of awareness and inappropriate guideline regarding the spelling and morphological system of English language. By taking an element of inter and intralingual errors, the present research is different because it explores spelling errors under the impact of phonemic transcription that is intralingual in nature committed by Pakistani language learners of Diploma Level.

2.9 Pronunciation Problems Faced by Pakistani Language Learners

Pronunciation is one of the major problems that become a hurdle on the way of communicative efficiency. Griffiths (2008, p.205) believes that pronunciation is an essential aspect of language learning and ignoring this feature spoils the real spirit of the language. In different settings courses of Phonetics and Phonology are designed to explore the pronunciation problems of foreign language learners. There are numerous factors that are responsible for the problem of mispronunciation on the part of foreign language learners.

2.9.1 First Language Interference

The most important difference in pronunciation appears due to the training of auditory perception and control of vocal organs. Vocal organs of every language learners are shaped according to the sounds and structure of their first language. When these language learners are exposed to another linguistic system, it creates an element of interference from the first language. Interference from the first language causes various kinds of pronunciation errors. In this context, Fleg (2005) presented the Merge Hypothesis which declared that in learning of a new language merging occurs between the phonetic properties of L1 and L2 which have adverse effects not on the newly learned language but also on the native language. This interference in pronunciation can occur due to the insufficient knowledge of L2 or in some cases it happens due to L1 that leads to the various kinds of errors in language learning process. Here in the process of learning a new language, there are three open possibilities. First, they can secure their L1 but the idea of achieving native-like fluency in L2 is not possible in this situation. In second case, they do a lot of effort in learning of a new language and improve their pronunciation like a native speaker but there is a drawback in this improvement. With excessive practice in L2, they lose their command in the first language. Third option is commonly observed where native-like pronunciation is not possible in both languages neither in L1 nor in L2.

This problem of first language interference is also dependent upon the age of language learner. Larsen-Freeman and Long (1991) declared that age is an important phenomenon that affects the pattern of a new language learning. According to the Critical Period Hypothesis (Lenneberg, 1967), a child can achieve native-like fluency in the learning of new languages till puberty. If a child is learning both languages in

childhood then the ratio of interference from the first language will below and he can achieve native-like pronunciation in both language. While in case of adults situation will be different. McLaughlin (as cited in Nemati & Taghizade, 2013, p.2477) suggests that the ideal way to learn a second language is to learn two languages simultaneously till puberty. Brown (2000) explored that in adulthood second language learners find more difficulties due to the interference of L1 into L2 and it is a major source of making errors by second language learners.

Sobkowiak (2009) conducted a study about the pronunciation problems and described that interference is the main source of mispronunciation. Ladefoged (2001) explained that mother tongue has a direct impact on the learning of L2 pronunciation. His findings proved that interference in pronunciation occurs due to various causes. Sometimes wrong pronunciation happens by relating spellings to sound rules of L1 or in some situations learners overgeneralize the target language rules.

In Pakistani context impact of the first language is quite high in learning of L2. Sounds of English and Urdu language are certainly different from each other but a Pakistani language learner tries to shape his speech organs according to the sounds of Urdu language. While the sections selected for the sound production is different in both languages. English language sounds are produced from the different sections of mouth like lips, tongue, and jaws but Urdu sounds are uttered from the natural position of the oral cavity. Secondly when language learners from the different part of the country come to learn the English language, it appears as their third and fourth language that leads to the major problem of pronunciation. Like Pashto speakers pronounce /f/ sound with “ph.” Here wrong pronunciation occurs because of the mother tongue influence and due to the flexibility problem in speech organs. Present research is not intended to explore interlingual influences of L1. Here intralingual impacts are explored in the learning of phonology and to explore its impact on the orthographic system of English language.

2.9.2 Overgeneralization of Target Language Rules

Richards (1985) explained the phenomenon of overgeneralization in the target language. It happens in that situation when learners generate a deviant structure on the basis of other learned structures in the target language. It also happens at that time when language learners have acquired an incomplete knowledge of the target language (Fromkin et al., 2011). Overgeneralizations in the pronunciation of foreign language produce various kinds of intralingual errors. It happens due to various reasons. Mostly it happens due to the negative attitude of the learner. In Pakistani context overgeneralization in pronunciation happens due to an alphabetical system and sound system. Due to this, learners create confusion between the rules of the phonemic system and rules of the alphabetical system and then implement it wrong.

2.10 Theoretical Framework

A theoretical framework encompasses the concept which develops the foundation of a particular study. One of the main reasons for selecting a theoretical framework is to develop a logical relationship between variables and other factors related to research problems (Sekaran, 2000). The present research is associated with the lack of correspondence between sounds and spellings of the English language and how it becomes the cause of various kinds of spelling errors. The pathway selected for this research is the phonemic awareness provided through the subject of Phonetics and Phonology. By providing phonemic awareness at the adult level, a kind of confusion and overlapping takes place between the alphabetic and phonemic knowledge of language learners. In order to investigate this problem, *Cook's Classification of Spelling Error* (1997) was adapted as a model for the research. This classification has been used by various researchers for exploring interlingual and intralingual causes of spelling errors.

Alhaisoni (2015) used the cook's classification of spelling error and explored that spelling errors are not only interlingual but also intralingual in nature. According to the finding of his research spelling errors are committed due to the difference between spelling and pronunciation of English language. The current research is intended to explore the intralingual impact that leads to spelling errors. Intralingual errors occur due to the partial or incomplete knowledge of target language rules. Here the impact of continuous phonemic transcription is used as an independent variable that causes intralingual errors in the spellings of Diploma students. *Cook's classification of spelling*

errors is based on four major categories of spelling errors that include *letter omission errors*, *letter insertion errors*, *letter substitution errors,* and *transposition errors.* These categories of spellings have been used in different researches to explore the pronunciation based spelling errors. For the present study, researcher adapted this model for investigating the spelling errors committed due to phonemic transcription.

According to Cook, *letter omission errors* is the first category that deals with the omission of one letter from the exact spellings of a word. This category describes spelling errors due to *consonant cluster, consonant pairs,* and *silent letters*. In case of *silent letters, letter omission errors* happen in the presence of final <e> as a silent letter causes spelling errors of second language learner (Cook, 1997, pp. 483-484). In the present study, the absence of silent letters from phonemic transcription also caused *letter omission errors* by adding two more categories which are the categories of *double letter omission* and *sound based omission* under the impact of phonemic transcription.

Letter insertion is the second category of spelling error given by Cook (1997) which explains the addition of a letter in the correct spellings. Within letter insertion, *consonant doubling* and *sound letter correspondence* were the subcategories. *Consonant doubling errors* occur commonly in English spelling system and are considered as "one of the complex areas of English spelling system" (Cook, 1997, p. 483). Another kind of letter insertion occurs due to the misinterpretation with reference to *sound letter correspondence* causing spelling errors. For example the letter insertion of <e> and <i> occurs because the corresponding sound /ai/ causes spelling errors in a word (Cook, 1997, p. 484). In present study the subcategory of *consonant doubling* is replaced with the category of *double letter insertion* that includes both consonant and vowel letters while the category of *sound letter correspondence* is used in the same form as given by Cook with the addition of a third category which is a *sound based insertion.*

According to Cook (1997), letter substitution is a third type of spelling error which deals with the replacement of a single letter in a word and in certain cases it covers the *substitution of multiple letters* in a word. Cook (1997) claims that common kind of substitution occurs in vowel letter <a>, <e> and <i> causing confusion in spellings and leading to the *letter substitution errors*. He also gave the reason for these vowel substitution errors as nearly half of them were pronounced as schwa /ə/

which caused difficulty in the exact identification of these letters in a word. Cook (1997) also mentioned the category of *consonant substitution* that causes spelling errors in the presence of consonant letters like <s>, <c>,<z> and <t> responsible for misspellings committed by the second language learner. Within *letter substitution errors* present study also deals with the subcategory of *single letter substitution, multiple letters substitution* with the addition of a third category *sound substitution.*

Transposition error is the fourth category of the spelling error, as discussed in Cook's classification of spelling errors. This kind of error occurs when two consecutive letters change place. Cook (1997) claims that common kind of *transposition errors* occurs between consecutive letter <e> and <i>. Secondly, *transposition errors* occur in *homophones*, causing confusion for second language learners (Cook, 1997, p. 485). In the current study, *transposition errors* were used as a single category without adding any subcategory. While *homophonic errors* and *past form errors* were used as a separate major category.

This chapter presented researches related to the relation between English letters and sounds causing various kinds of spellings errors. Area of Phonetics and Phonology is discussed with various researches about the sounds of English while sound based spelling errors are discussed with reference to the problems associated with spellings and pronunciation. The researcher has tried to equip the chapter with the recent researches findings along with some inevitable studies of historical importance. These studies are helpful to associate the existing body of literature with reference to the impact of phonemic transcription on spelling ability of Pakistani learners. The subsequent chapter will throw light on the research methodology, research design, and research procedure in detail to explain the line of action vividly.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter provides a detailed explanation of the selected research design and research sample. It also explains the research procedure and research tools for the collection and interpretation of the collected data.

3.1 Research Design

Research Design in any research is a strategy that is complete in its nature and implemented to incorporate the various study components with a rationale. According to Kothari (2004), research design is a way that is used to answer the research questions in an apt and accurate manner. For the present study, research design is Pre-Experimental in nature. In an experimental research, the researcher manipulates at least one variable, controls the other relevant variable and observes the effect on one or more dependent variables. Generally, an experimental study involves the comparison of two groups, although some experimental studies have a single group or even three or more groups. For the present study, an experiment was conducted on one group and later on a focused group discussion was added for the consolidation of the problem. The addition of focused group discussion with pre-experimental study makes it a Mixed Method Pre- Experimental study. It is the combination of qualitative and quantitative approaches for exploring the underlying phenomenon at different stages of research (Tashakkori & Teddlie, 2008). It provides an in-depth analysis of a problem. In a Mixed Method study, the researcher can give priority to the qualitative or quantitative aspect of research. For the present study, pre-experimental design takes the priority in research while focused group discussion was used as a valuable tool for the substantiation of the research problem.

3.1.1 Pre-Experimental Design

The Pre-Experimental Design follows the basic steps of experimental research in the absence of a control group. It is one of the most suitable design for research in

natural settings(Campbell, 2015).The independent variable involved in an experimental study is called the treatment, causal or experimental variable, while the dependent variable, also called the criterion, is the outcome of the study. The change or difference in the outcome of groups occurs because of the independent variable. The dependent variable may be measured by a test or some other quantitative measure. In educational research, independent variables, that are frequently manipulated, include methods of instruction, types of reinforcement, arrangement of learning environment, types of learning materials, and length of the treatment.

Pre-Experimental Research Design is further divided into three types which are One-shot Case Study Design, One-Group Pretest-Posttest Design, and Static-Group Comparison. Out of these three types, this study is One-Shot Case Study Design. In this type of design, the treatment is provided to a single group called experimental group, for a specific time period and observations are made at the end of that treatment. This design here only possesses an experimental group and no control group, which receives treatment that has been presumed to have caused changes. So, there is no concept and need of pretests in this research design. After receiving the intervention, the outcome of the treatment is gathered and analyzed in the form of post-test. Observations collected through post-test, are helpful to assess the effect of treatment provided to the subjects of the experimental group. Pre-tests have not been conducted in the current study since the subjects did not have any background knowledge about phonemes and phonemic transcription that could be evaluated through a pre-test. The data collected through the treatment phase and the result of post-test has been used for the present study. Then, the outcome of variables has been measured for the identification of the specific cause. For the present study, selection of research topic is derived through the teaching experience of Phonetics and Phonology. According to Gay (2012), daily classroom experiences and the effect of teaching practices on students' outcomes is the start of action research in educational settings.

Like any other research design, the present study may also have certain validity threats due to the intervening variables which affect the performance of the dependent variable. These criteria are referred as internal validity and external validity. Internal validity is the degree to which observed differences are a direct result of manipulation of the independent variable, not because of some other variable. While the external

validity, also called ecological validity, is the degree to which the study results are applicable, to groups and environments outside the experimental setting (Gay, 2012). Carefully claiming, the nature of the present study was unique in a way that it had as its independent variable a rather unusual variable that is phonemic transcription which countered the conventional issues of validity (both internal and external) as well as maturation. But each threat is a potential threat only—it may not be a problem in a particular study (Cohen, 2012)

In other words, the observed difference in the form of incorrect spellings of reasonably common words was the direct result of impact of the causal/ experimental variable (phonemic transcription) as there seems to be no other variable which could be held responsible for such widespread change. As regards the issue of External validity, it would not be wrong to claim that any carefully carried out experimental study, no matter what research design it selects, would bear the similar results. Moreover, the selection of research design, carefully a single instance is compared with other events observed in classroom. Much research in education today conforms to a design in which a single group is studied only once, subsequent to some agent or treatment presumed to cause change (Campbell, 2015). Commonly the concept of pre-test is embedded in the mind of research workers but according to Campbell (2015), there exist many problems for which pre-test are unavailable and inconvenient. Same is the situation in current research where the pre-test was not possible due to the lack of knowledge about the subject of Phonetics and Phonology. The study subjects have not been equipped with the background knowledge of Phonemes and phonemic transcription before this treatment. Due to unawareness of phonemic literacy, the true experimental design, by taking pre-test first and then post-test, was not possible.

As for Maturation, it would not happen as it does in other experimental researches where it (maturation) challenges the results caused by experimental variable or treatment. In case of the present study, no other variable could possibly cause maturation due to the nature of the independent variable In other words, due to the limited practice of the subject of Phonetics and Phonology, these study subjects have not been taking any kind of coaching classes of phonemic transcription from other sources; as in Pakistan, this subject is not taught at a college or even at academy level. Therefore, the role of maturation effect, if any, with reference to phonemic transcription strengthens the argument of the impact of phonemic transcription on

learners' spellings.

While discussing the interest rate of the study subjects, their regularity in classes could be considered as a condition for measuring their motivational level because seventy percent attendance criterion is followed strictly in the Functional Courses Department, NUML Islamabad. Otherwise, measuring the interest rate of the study subjects has not been the domain of this study.

3.1.2 Population

The population for this study comprised of all the English language learners enrolled at the Diploma level. In NUML FC department, around 100 students are enrolled at Diploma level every semester, although this number varies slightly in spring and fall semesters. The present study was conducted in the fall semester and the population was 95 students of Diploma level. These students belonging to the different areas of Pakistan are enrolled with Intermediate qualification criteria. The whole strength at Diploma level was divided into three sections and out of these three Diploma B2 was selected as a sample for this study.

3.2 Sample

The sample selected for this Pre-Experimental study consisted of twenty- five Diploma students of Functional Courses Department (FC), NUML Islamabad. These language learners were enrolled in Diploma course on the basis of their Intermediate qualification and after an interview which was conducted by the faculty members of English FC Department. Commonly Diploma students belong to different provinces and are enrolled at Diploma level on the basis of their linguistic competence and similar qualification criteria of Intermediate.

According to the norms of Functional courses department, Diploma students are divided into three sections. Out of these three sections, Diploma B2 which comprised twenty-five students were selected as the sample for this study. These students were selected for the treatment on the basis of the convenient sampling technique. This technique of data collection is also called availability sampling where the sample is selected per ease and access. For the present study convenient sampling was used as Diploma B2 was the section allotted from the FC department which the researcher was to teach for a whole semester. It was a homogenous group of language

learners where all student were having the age limit of twenty to twenty-five years with no background knowledge about phonemes and phonemic transcription.

3.3 Data Collection Tools

1. Phonemic Transcription Passages
2. Post-Test
3. Focused Group Discussion

3.3.1 Phonemic Transcription Passages

It was the first research tool used to collect the data. Phonemic transcription passages (Annexure A) were practiced in the classroom after the detailed teaching of speech sounds and the verbal practice in the classroom for eight weeks. The research subjects were asked to convert phonemic passages into normal spellings. These transcribed passages were constructed according to the vocabulary status of Diploma students. Within the time period of one semester, every individual was exposed to twenty-four transcribed passages which were supposed to be converted into normal spellings. Through these conversion practices, the researcher intended to evaluate the impact of sounds on the spellings of the study subjects. In addition to it, the issue of already weak spellings was also discussed through an informal discussion in the classroom where five students out of twenty-five reported that their spellings were already weak. By keeping in mind, the weak spelling status of five study subjects, their samples were excluded from the collected data and the phonemic passages of twenty students were used for the data analysis. Resultantly, after checking these phonemic passages, actual data of twenty-five students were reduced to twenty subjects with twenty-four samples from each subject.

These transcriptions were marked by the researcher. It helped the researcher to make various categories of spelling errors which appeared at the surface. Frequencies of these errors were presented in a tabulated form. Analysis of the data in tabulated form was helpful to explore various commonly occurring errors with their responsible factors and also those sounds were highlighted which created more spelling based issues.

3.3.2 Use of Phonemic Transcription as a Measuring Instrument

Transcription is generally perceived as a tool which is of great importance for linguistic analysis. It is also defined as "a consistent coding system" (Sobkowiak, 2008), which explicitly visualizes direct pronunciation of sounds, words, phrases, and whole utterances. It is not only used as a research tool but also a teaching aid. In the current study, phonemic transcription was used as a measuring instrument to explore its impact on the spelling ability of language learners that basically reflects the newness of the current study. The manipulation of an independent variable is the primary characteristics of an experimental design, which is practiced in the form of phonemic passages. According to the domain of the present study, just measuring the spelling errors of language learners was not the requirement, rather it focused on the intralingual impact of phonemic transcription, which caused various kinds of spelling errors.

3.3.3 Post-Test

This study is a one-shot case study and pretest was not possible in this scenario. A post-test was conducted at the end of the semester after the continuous practice of phonemic passages for two months. In the form of post-test, subjects were given a detailed passage consisting of five hundred phonemically transcribed words (Annexure B). The subjects were supposed to convert it into normal spellings. Through this post-test, the researcher intended to find out whether the continuous conversion of phonemic passages had an impact on spellings of language learners or the students developed a separate system of sounds and spellings.

3.3.4 Focused Group Discussion

Focused Group Discussion is a qualitative form of research tool used as a second tool by a researcher for an in-depth analysis of the phenomenon. It comprises an experienced group of people who share knowledge related to a specific problem. Their experience in a specific field is helpful to validate the information. For analyzing the impact of sounds on spellings, this focused group discussion was arranged with the experienced teachers of F.C department who had been teaching Phonetics and Phonology for the last few years. Six teachers were selected for this purpose. Among these language teachers, two native English teachers were there, who

have been serving in FC department for a couple of years. This discussion consisted of eight questions based on their teaching experience and the general responses from students' side related to sound awareness. Time period for this discussion was forty-five minutes where the researcher acted as a moderator. These questions were designed to validate the information gathered through the phonemic passages and to share the opinion of experts that how they perceive this phenomenon**.**

3.4 Research Procedure

The present study dealt with the teaching of Phonetics and Phonology where phonemic transcription passages were used as a tool for data collection. Commonly, phonemic transcription is used by different researchers as a method of teaching pronunciation to foreign language learners. While in present study phonemically transcribe passages were used for exploring the impact of sounds on spellings.

For this purpose, two months (at the beginning of the fall semester that is September and October) were consumed in teaching English speech sounds and a number of theoretical aspects of English pronunciation. According to the course outline provided by FC Department, the course of Phonetics and Phonology basically deals with segmental and supra segmental features of RP. For the current study, supra segmental features were excluded as it was not the domain of the research and the researcher focused only on the segmental features of English that included the awareness about sounds. Along with the segmental features, certain sounds based rules were also added to the introductory session of two months. It included the rules of plural forms, past forms, rules of /r/ and /l/ because these rules made certain exceptional changes in phonemic transcription.

After providing the awareness of sounds for two months, the focus of the study was centered on the phonemic transcription and practice. In the first two months, the subjects started transcribing words and sentences and in the third month, they were assigned to do phonemic transcription of the paragraphs provided by the researcher. Afterward, the subjects were given phonemic passages on the daily basis which they had to convert into normal English spellings. The subjects were supposed to convert one phonemic passage every day, but sometimes in case of lengthy passages, it took two classes as well. This process continued till twenty- four phonemic passages were gathered from each subject. These phonemic passages

consisted of simple words selection for the convenience of language learners so that they could recognize phonemes and their spellings in an easy way.

At the end of this practice, the subjects were given the final test (Post-test) to convert a lengthy phonemic passage which was based on the phonemic transcription of four common fables like, *the dog and the shadow, the wolf and the lamb, the farmer and his four sons* and *the wolf and the crane*. The purpose of selecting these fables was to add simple and common words in the post-test so that the subjects may not get confused in complicated pronunciations and spellings rather explore the impact of sounds on the spelling status of the subjects. These study subjects had already been exposed to the alphabetical system in their twelve years of formal education but here for the first time they had an opportunity of learning sound system of the English language as well.

The last step of the research was a focused group discussion as mentioned in Annexure D. This step was taken by the researcher for the validation of the problem from other teachers who have an ample experience in this field.

CHAPTER 4

DATA ANALYSIS

This chapter presents the analysis of data accumulated through the conversion of phonemic passages into spellings and through a focused group discussion. The researcher has analyzed the data collected from twenty subjects learning Phonetics and Phonology at Diploma level at FC (Functional course) Department NUML, Islamabad. The collected data has been analyzed in the light of *Cook's classification of spelling errors* and presented in tabulated form. Four sample errors from each major category of spelling errors have been discussed in detail and complete lists of those errors given in Annexure (C).

Twenty-four phonemic passages have been collected from each subject including the sample of post-test. Six major categories of errors have been assembled based on errors committed by the subjects. These major categories include *letter omission errors, letter insertion errors, letter substitution errors,* and *transposition errors* taken from *Cook's classification of spelling errors,* while the category of *past form errors* and *homophonic errors* have been added by the researcher. All these categories have been presented and analyzed in the form of tables. The percentage of each category has also been explained at the start of the chapter in order to explain excessively found errors committed under the impact of phonemic transcription.

Table 1: Frequency of Spelling Errors

S. No	Types of Spelling errors	Frequency	Percentages
1.	Letter omission errors	47	22.59%
2.	Letter insertion errors	26	12.5%
3.	Letters substitution errors	119	57.21%
4.	Transposition errors	2	.96%

5.	Past form errors	4	1.92%
6.	Homophonic errors	10	4.80%
	Total errors	208	

The analysis of data indicates the distribution of spelling errors in six major categories. By using *Cook's classification of spelling errors* (1997), four categories named as *letter omission errors, letter insertion errors, letter substitution errors,* and *transposition errors* along with the categories named *past form errors* and *homophonic errors* have been found and analyzed. In terms of percentage, *letter substitution* contains the highest percentage 57.21% while the second largest category *letter omission* comprises 29.59% of the whole data. Following these two major classifications, *letter insertion* is the third excessively found error category, which has 12.5% of the total number of errors. According to *Cook's classification of spelling errors, transposition errors* are found, though minimum in number. The category of *transposition errors* includes only two errors comprises of .96% of the total errors, while two more categories *past form errors* and *homophonic errors* are added by the researcher, containing 1.92% and 4.80% of the total numbers, respectively. Inside these major categories, few subcategories introduced by the researcher are also analyzed in the following tables.

Table 2: Omission Errors

S.No	Subcategories of letter omission	Frequency	Percentages
1	Omission due to double letters	22	46.80%
2	Silent letter's omission	23	48.93%
3	Sound based omission	2	4.25%
	Total errors	47	

Letter Omission Error is a major category of spelling errors, as mentioned in *Cook's classification of spelling errors*. It deals with the omission of a letter from the exact spellings of a word. According to *Cook's classification of spelling errors* (1997), this category is divided into *consonant pairs, consonant cluster,* and *silent*

letters. These categories are adapted according to the data gathered through phonemic passages. By analyzing the data, *letter omission* is divided into three subcategories, including *omission due to double letters, silent letter's omission,* and *sound based omission*. After marking the data, the subcategory of *silent letter omission* contains the highest percentage of 48.93% of the total error. The second subcategory of *double letters* contains almost equal percentage 46.80% of *letter omission errors* while the third subcategory *sound based omission* comprises 4.25% of the total omission errors. In the following section, these subcategories are analyzed separately by adding four examples from each category, presented in form of tables but in the category of *sound based omission,* only two examples are mentioned as errors found in this category are limited in number.

Table 3: Omission due to Double Letters

S. No	Phonemic Transcription	Correct spelling	Spelling error	Frequency
1	| əˈtendɪŋ	Attending	*Atending*	5
2	mɪs |	Miss	*Mis*	3
3	spel |	Spell	*Spel*	7
4	tɪl |	Till	*Til*	2

Words with the double letters are frequently found in English spellings. These words contain one set of letters repeated twice for the production of a specific sound. English has specific rules for double letters but commonly in Pakistan, language learners have little awareness about these rules which leads to spelling errors. According to *Cook's classification of spelling errors*, *letter omission errors* are subcategorized into *consonant cluster, consonant pair* and *silent letters*. After marking the data of phonemic passages, *omission due to double letters* is introduced as a new category, as mentioned in Table 2.1.

By analyzing the data, certain examples of misspellings are found as mentioned in Table 2.1 where subjects have composed words with a single letter instead of double letters. In this regard, an example of word *attending* can be added

which is misspelled by five subjects as **atending.* Similarly, the examples of *miss, spell* and *till* are also the *omission errors,* misspelled by the subjects as **mis, *spel* and **til.* In the presence of phonemic transcription, these spelling errors appear as the reflection of phonemic transcription into spellings that leads to the letter omission. These examples might fall in the category of sound based spelling errors as the impact of sounds in the form of phonemic transcription which dominates the spellings and causes spelling errors.

Table 4: Silent Letter's Omission

S. No	Phonemic Transcription	Correct Spellings	Spelling Errors	Frequency
1	ˈfɔːkɑːst |	Forecast	*Forcast*	9
2	məˈnɪpjʊleɪt |	Manipulate	*Maniplate*	5
3	əˈkweɪntɪd |	Acquainted	*Aquainted*	7
4	dʒenəˈreɪʃn̩ |	Generation	*Genration*	3

In English alphabetic writing, silent letters do not correspond to any sound in pronunciation but they exist in spellings. These letters are difficult for native as well as non-native language learners. As a result, it is observed that mispronunciations and misspellings are made by second language learners. According to *Cook's classification of spelling errors*, *silent letter's omission* is a major cause of misspellings. He has mentioned that the maximum number of *omission errors* occur due to silent letter <e>.

In analysis of the data, featured number of *omission errors* which have been mentioned in Table 2.2 are committed due to the silent letters. Here, one commonly occurring error is the word *forecast,* misspelled by nine subjects as **forcast* by the omission of silent <e> from the exact spellings. This omission of silent letter <e> is also present in the word *generation* which has been misspelled by three subjects as **genration.* These examples are close to the *Cook's classification* of *silent letter omission*. Another example of misspelling occurred in word *manipulate* where five subjects out of twenty have written it as **maniplate* by omitting silent <u>, from the accurate spellings of the word. According to the above mentioned examples, *silent letter's omission* does not show any significant impact of phonemic transcription,

rather it explains the lack of correspondence between spellings and pronunciation of English words. Secondly, these *silent letter omission*s might occur due to vowel letters.

Contrary to the previous examples, misspelling of the word *acquainted* can be considered as an error committed under the impact of phonemic transcription because seven subjects out of twenty have spelt it as **aquainted* by omitting silent letter <c>. This could be added in the category of *sound based spelling error* where the impact of phonemic transcription /əˈkweɪntɪd | and the absence of silent letter <c> also reflects in the spellings as**aquainted*. By analyzing the errors of *silent letter's omission*, maximum errors are related to vowel letters as compared to the omissions of consonant letters.

Table 5: Sound Based Omission

Phonemic transcription	Correct spelling	Spelling errors	Frequency
ɑː |	Are	*A*	6

By analyzing the data of phonemic passages, a new category of sound errors has been explored by the researcher named as *sound based omission*. It explains the letter omission under the impact of phonemic transcription. This subcategory is added in *letter omission error* after the analysis of data which is not mentioned in *Cook's classification of spelling errors*. Here only one frequently occurring error has been found for the word *are* which is misspelled by six subjects as **a*. While converting phonemic passages into spellings, six subjects have misspelled it by transferring the sound /a/ into letter <a>, without focusing on the context provided in the paragraph. It can be due to the difference between American and British English, because of which subjects could not identify this sound properly. On the other hand, if this error is analyzed according to the context provided in the paragraph, the second interpretation can be the letter omission due to phonemic transcription. These kinds of omissions are less in number but the presence of these errors supports the concept given by the researcher.

Table 6: Letter Insertion Errors

S.No	Subcategories of letter insertion	Frequency	Percentages
1	Double letter insertion	6	23.07%
2	Sound based insertion	2	7.69%
3	Sound letter correspondence	18	69.23%
	Total errors	26	

Letter insertion is the second major category of spelling errors as explained in *Cook's classification of spelling errors.* It deals with the insertion of letters in the exact spellings of the words. According to Cook (1997), *letter insertion errors* are divided into *consonant doubling* and *sound letter correspondence*. By analyzing the data, a category of *sound letter correspondence* has been found in the data while *double letter insertion* and *sound based insertions* are the new additions in the category of *letter insertion errors*. Here the highest percentage of 69.23% is found in *sound letter correspondence,* which has been discussed with reference to phonemic sounds individually in the following section. As a second subcategory, *double letter insertion errors* contains the percentage of 23.07% while the *sound based insertion* only comprises 7.69% of the total *letter insertion errors*. These three categories of *letter insertion errors* are explained and analyzed in the form of tables along with four examples of each category. Exceptionally limited examples are added in the categories which have few errors.

Table 7: Double Letter's Insertion

S. No	Phonemic Transcription	Correct Spellings	Spelling Errors	Frequency
1	ˈvɪzɪtɪŋ |	Visiting	*Visitting*	2
2	ˈleɪtə |	Later	*Latter*	1
3	dʌbl̩	Double	*Doubble*	2
4	prɪˈfɜː	Prefer	*Preffer*	3

Double letter's insertion is the first subcategory of *letter insertion errors*, dealing with the addition of two similar letters in a single letter word. For example, the word *visiting* mentioned in Table 3.1 has misspelled by two subjects as **visitting* that shows the insertion of letter <t> in spellings. A similar kind of *double letter's insertion* is observed in the spellings of *later*, misspelled as **latter* by adding an extra letter <t>. Another *double letter insertion error* occurred in the spellings of *double* which has been misspelled by two subjects by adding <bb> in the spellings. In the same pattern <ff> is written by three subjects in the spellings of *prefer* by writing it as* *preffer*. These kinds of spelling errors are considered as errors committed due to lack of knowledge but it does not show any kind of phonemic impact on spellings. Secondly, all errors which fall under this category have the doubling of consonant letters that align it with the subcategory of *consonant doubling*, as mentioned in *Cook's classification of spelling errors*. Therefore, it is concluded that none of these errors is a result of vowel letters.

Table 8: Sound Based Insertion

S. No	Transcription	Correct spelling	Spelling errors	Frequency
1	| ˈdjʊərɪŋ |	During	*Djuring*	1
2	ˌɪntrəˈdjuːst |	Introduced	*Introdjuced*	1

According to *Cook's classification of spelling errors*, *letter insertion errors* deal with the addition of an extra letter in spellings with the subcategory of *consonant doubling* and *sound letter correspondence*. From the analysis of phonemic passages, a new category of insertion emerged, named as *sound based insertion* that deals with the insertion of sounds in spelling. In the first example, as mentioned in Table 3.2, one subject has inserted the/*j*/ sound in a word *during* and spelt it as **djuring*. A similar example is also observed in the word *introduced* that is misspelled by one subject as **Introdjuced.* This sound insertion can be considered as the insertion of /*j*/ sound under the impact of phonemic transcription. Although these *insertion errors* are limited in number and committed by few subjects, here the presence of these sound insertions support the concept that the impact of phonemic transcription exists on spellings.

Table 9: Sound Letter Correspondence

S. No	Subcategories of sound letter correspondence	Frequency
1	Insertion due to/ ʃ/ sound	3
2	Insertion due to /dʒ/ sound	2
3	Insertion due to /i:/ sound	3
4	Insertion due to /u: / sound	3
5	Insertion due to /əʊ/ sound	4
6	Insertion due to / aʊ/ sound	1

Sound letter correspondence is the second subcategory of the *letter insertion errors*. Cook (1997) mentioned *letter insertion errors* with the subcategories of *consonant doubling* and *sound letter correspondence*. This category of *sound letter correspondence* explains the insertion of those letters that correspond with sounds. In this type of error, subjects have interpreted the letters of words according to the sounds. This section is categorized with reference to different sounds causing spelling errors due to letter correspondence.

Table 10: Insertion due to / ʃ/ Sound

S. No	Phonemic Transcription	Correct spelling	Spelling error	Frequency
1	| ˈmenʃn̩	Mention	*Mension*	4
2	ɪˈsenʃl̩	Essential	*Esencial*	5
3	səˈfɪʃnt |	Sufficient	*Suffishent*	2

/ʃ/ is a voiced consonant sound which has been analyzed by the researcher in the first example, as mentioned in Table 3.3.1, the word *mention* which is misspelled by four subjects as **mension*. This example shows that under the influence of / ʃ/ sound, four subjects out of twenty have misinterpreted it by corresponding letter <s> instead of <t>. In this error, the subjects have changed the spellings according to the sounds.

Another example which shows the same error explained above analyzed and explored in the word *essential* which has been misspelled by five subjects as **essencial*. This can also be considered as sound based spelling error as subjects interpreted/ ʃ/ sound as letter <c>. While writing the spellings, the subjects have selected the letter which is close to the sound and causes spelling error. A similar kind of error found in a word *sufficient,* misspelled by two subjects as **suffishent.* Here subjects have interpreted the letter<sh> as/ ʃ/ sound. These insertions of / ʃ/ sound, with different corresponding letters, align with Cook's subcategory of *sound letter correspondence.*

Table 11: Insertion due to /dʒ/ Sound

S. No	Phonemic Transcription	Correct spelling	Spelling error	Frequency
1	ˈprɪvəlɪdʒ |	Privilege	*Priviledge*	2
2	ˌenəˈdʒetɪkḷi |	Energetically	*Enerjetically*	2

/dʒ/ is a voiced consonantal sound is mostly wrongly pronounced and written by language learners, because while learning / dʒ/ sound language learners cannot develop a correspondence between sound /dʒ/ and letter <j>. By analyzing the data, two such errors of / dʒ/ sound are mentioned in Table 3.3.2. Here first error is found in the word *privilege,* misspelled by two subjects as **priviledge* with the insertion of sound corresponding letter in spellings. It also shows the impact of phonemic transcription *ˈ/prɪvəlɪdʒ /*on the spellings by adding letter <d> with reference to */dʒ/ sound*. The second insertion error, based on / dʒ/ sound occurs due to the misinterpretation of the corresponding letter. For the transcription of /enəˈdʒetɪkḷi/, correct spellings are *energetically* while two subjects have written it as **enerjectically*. In this error a kind of confusion has seen between corresponding letter <g> and <j>, causing spelling error. These two errors which have been committed under the impact of / dʒ/ sound show the incorrect sound-letter correspondence, as a source of *letter insertion error*.

Table 12: Insertion due to /i: / Sound

S. No	Phonemic Transcription	Correct spelling	Spelling error	Frequency
1	si:t |	Seat	*Seet*	1
2	ti:m |	Team	*Teem*	4
3	| hi |	He	*Hee*	2

Commonly, it has been observed in Phonetics classes that long vowel sounds are easily produced by Pakistani language learners as compared to short vowels. For the articulation of long unrounded vowel /i:/, language learners made the correspondence of sound /i: / with double letter <ee>.

After marking the data, three spelling errors are highlighted due to the *sound letter correspondence*. In this regard, the first kind of spelling error as mentioned in Table 3.3.3 has seen in the word *seat* , misspelled by one subject as **seet.* In a similar way, *team* and *he* were misspelled as the addition of<ee> in the correct spellings of the words. These kinds of errors indicate the correspondence between sound /i:/ and letter <ee> in spellings while the real spellings are different from the sound-letter correspondence.

Table 13: Insertion due to /u: / Sound

S. No	Phonemic transcription	Correct spelling	Spelling errors	Frequency
1	/Ju:/	You	*Yu*	7
2	/ju:/	You	*Yoo*	3
3	/ju:/	You	*Ju*	2

Another long vowel /u: / is also analyzed by the researcher. The subjects have provided different versions of the word *you* in terms of sounds as mentioned in the table above. While converting phonemic transcription into spellings, error of *you* appeared in three different forms. In the first form, seven subjects have written the spellings of *you* as **yu*, the transference of /u: / sound into letter <u>. While in the

second case, three subjects have provided the spellings of *you* as **yoo*, by developing a sound-letter correspondence between sound /u: /and letters <oo>. In the third case, two subjects have spelled *you* as * *ju.* For the first two situations, subjects have made a sound-letter correspondence between /u: / sound by perceiving it as letter <u> and <oo> as discussed in *Cook's classification of spelling errors*. In the third case, spellings are interpreted according to the phonemic transcription causing spelling error. These different interpretations of *you* can be considered as the impact of phonemic transcription on spellings that might occur due to the conversion of phonemic passages into spellings.

It also indicates that long vowel sounds are easily articulated as compared to the short vowels. Moreover, the production of long /u: / sound is generally associated with letter <u> or it refers to the double letter <oo>.

Table 14: Insertion due to /əʊ/ Sound

S. No	Phonemic transcription	Correct spellings	Spelling errors	Frequency
1	| ˈəʊpənɪŋ |	Opening	*Oupening (2)*	2
2	ˈsəʊ |	So	*Sou (1)*	1
3	ˈsməʊkɪŋ |	Smoking	*Smouking (1)*	1
4	ˈsməʊkɪŋ |	Smoking	*Smooking (2)*	2

/əʊ / is a diphthong, also termed as gliding vowel in which the glide moves from /ə/ towards / ʊ/. While analyzing the data, four examples of *sound letter correspondence* have been explored as a subcategory of *letter insertion* discussed in *Cook's classification of spelling errors* (1997). In first three errors, subjects made the correspondence between diphthong /əʊ / with letter <o> and <u>. In this context, misspellings have been committed in the spellings of the words *opening, so,* and *smoking* by inserting letter <o> and <u>. This insertion of letter <o> and <u> can be anticipated as the spelling error, committed under the impact of phonemic transcription. In the fourth kind of spelling error, two subjects have written / əʊ / sound by converting it into letter <oo>. Here subjects have developed a wrong correspondence between diphthong / əʊ / with double letter <oo>, causing spelling error. This kind of letter insertion is due to sound-letter correspondence which is

considered as an impact of phonemic transcription further leading to the spellings errors.

Table 15: Insertion due to / aʊ/ Sound

S. No	Phonemic Transcription	Correct spelling	Spelling error	Frequency
1	əˈraʊnd |	Around	*araound*	2

The/ aʊ/sound is produced by the glide moving from vowel / a / towards /ʊ/. This diphthong can be easily produced by language learners due to the prominent gliding tone. By analyzing the data, only one spelling issue is highlighted as mentioned in Table 3.3.6. From the sample of twenty, two subjects have made a spelling error of word *around* by writing it as* *araound*. Here subjects have made the sound-letter correspondence between sound / *aʊ/* with letter <a> and <o>. This kind of insertion could occur due to the impact of sounds on spellings because in the presence of sound*/ aʊ/* the subjects have inserted the sound corresponding letter in a word which causes spelling errors.

Table 16: Substitution Errors

S. No	Subcategories of letter substitution error	Frequency	Percentages
1	Single letter substitution	34	28.57%
2	Multiple letter substitution	27	22.68%
3	Sound substitution	58	48.73%
	Total errors	119	

Letter substitution error is the third major category of spelling errors as described in *Cook's classification of spelling errors*. In this form of error, language learners replace the exact letter with an incorrect one. According to Cook (1997), the category of *letter substitution* includes *single letter substitution, multiple letter substitution, substitution due to vowel letter* and *substitution due to consonant letter*. While according to the analyzed data, the present research has explored a new category of *sound substitution* with the categories of *single letter substitution* and *multiple letter substitution* emerged. Cook (1997) has mentioned the subcategory of

vowel and consonant letter substitution while the present research deals with sound substitution instead of letters.

In this category, errors are discussed in terms of consonant, vowels, and diphthongs. Analysis and findings of *letter substitution* category have the highest percentage of *sound substitution errors* which comprised 48.73% of the whole. While the second excessively found subcategory is a *single letter substitution* containing 28.75% followed by *multiple letter substitution* comprise of 22.68% errors. All subcategories of *letter substitution errors* are elaborated and analyzed below by giving four examples from each while in case of the analysis of *sound substitution* with reference to consonants, and vowels, examples vary in numbers due to limited number of errors.

Table 17: Single Letter Substitution

S. No	Phonemic Transcription	Correct Spellings	Spelling Errors	Frequency
1	| ˈnəʊtɪsɪz |	Notices	*Noticis*	3
2	ləʊ	Low	*Lou*	1
3	əˈweə |	Aware	*Awere*	5

Single letter substitution is the first subcategory of *letter substitution* that deals with the substitution of one letter from the correct spellings of a word. By analyzing the data of phonemic passages, number of *single letter errors* are highlighted and few examples are added here in Table 4.1.

In order to elaborate the subcategory of *single letter substitution*, the word *notices* is the first example mentioned in Table 4.1. The word *notices* is misspelled by three subjects as **noticis,* by substitution letter <e> with letter <i>. This might be considered as an impact of phonemic transcription on spelling as /i/ sound is present in *ˈ/nəʊtɪsɪz/* and its impact also reflects in the spelling error of *notices* by replacing letter <e> with <i>. Second error in the category of *single letter substitution* is *low,* misspelled by one subject as **lou,* that is also an error related to letter substitution due to the pronunciation of diphthong*/əʊ/* as the subject has substituted the letter <w> with <u>.

Similarly, the substitution of letter <a> with letter <e> can be seen in the

spellings of the word *aware*, misspelled by five subjects as **awere*. Analysis of the data explains the errors of *single letter substitution* occurring under the impact of phonemic transcription. Secondly, the subjects have committed *letter substitution errors* by replacing the vowel letters into other vowels. This phenomenon is discussed by Cook (1996) explains that almost all vowel letters are pronounced as schwa/ ə/ that become the reason of excessively found vowel letters substitution in spellings.

Table 18: Multiple Letter Substitution

S. No	Phonemic Transcription	Correct Spellings	Spelling Errors	Frequency
1	| tɜːnd	Turned	*Trend*	12
2	bɒks	Box	*Boks*	1
3	kɔːl |	Call	*Cool*	2
4	ˈfɜːst |	First	*Fast*	6

Multiple letter substitution is the second subcategory of *letter substitution errors* taken from *Cook's classification of spelling errors*. It deals with the substitution of more than one letters in a word causing spelling errors. Here first frequently occurring error as mentioned in Table 4.2 is *turned*, misspelled by twelve subjects as **trend*. Generally, *multiple letter substitution* errors do not follow any logical sequence but here it can be considered as the impact of /*ɜːr*/sound, present in the phonemic transcription of */ tɜːnd/*. Because language learners articulate /*ɜːr*/sound by producing it under the effect of /r/ sound. This influence of sound also reflects in the spellings where twelve subjects have misinterpreted the spellings which lead to the spelling error.

Second example mentioned in Table 4.2 is word *box*, wrongly spelled by one subject as **boks*. This *multiple letter substitution* error **boks* is not the exact word in English vocabulary but it shows the impact of phonemic transcription */bɒks* / on the spelling error *boks. In this example, the subject has made an interpretation of sound /*ɒ*/* as letter <o> while sounds /k/ and /s/ are used in the same way from phonemic transcription into spellings.

The third example representing the *multiple substitution errors* is word *call*,

misspelled by two subjects as **cool*. Here subjects have committed errors in form of *multiple letter substitution* under the impact of /ɔ:/sound, by corresponding the sound /ɔ:/ as letter <oo>. Fourth example which refers to the above mentioned category is the word *first*, misspelled by six subjects as **fast*. This example does not indicate the impact of phonemic transcription on the spelling rather it can be assumed as an impact of mal pronunciation on the part of the subjects. By analyzing the data, it can be evaluated that multiple *letter substitution error*s because of two reasons. It can be the impact of sounds on spellings and in certain examples, these errors occur due to the wrong pronunciation of words causes spelling errors.

Table 19: Sound Substitution Error

S. No	Types of Sound Substitution Error
1	Consonant Substitution error
2	Vowel Substitution error
3	Diphthong Substitution error

Sound substitution error is the third subcategory of *letter substitution errors* which deals with the substitution of sounds instead of letters in a word cause of misspellings. This category is further divided in terms of consonants, vowels and diphthongs substitution. *Cook's classification of spelling errors* explains errors which occur due to vowel and consonant letters while the category of *sound substitution error* is different in a sense as it deals with errors committed because of sounds. In this category of *sound substitution errors,* though examples are limited in number and the presence of these sound substitution in spellings is helpful for the supposition made by the researcher.

Table 20: Consonant Substitution Error

S. No	Types of Consonant Substitution Error
1	Substitution due to /ð/ sound
2	Substitution due to /ʃ/ sound
3	Substitution due to /tʃ/ sound
4	Substitution due to /s/ sound
5	Substitution due to /k/ sound
6	Substitution due to /z/ sound
7	Substitution due to /f/ sound
8	Substitution due to /w/ sound

In *Consonant substitution errors*, analysis is based on the individual consonant sounds along with relevant examples mentioned in form of tables.

Table 21: Substitution due to /ð/ Sound

S. No	Phonemic transcription	Correct spellings	Spelling errors	Frequency
1	/ð/	The	*/ð/*	3

Commonly, Pakistani language learners produce consonantal*/ð/* sound by developing a correspondence between */ð/* sound and word *the*. While analyzing the data, impact of wrong correspondence also reflects in spellings. Three subjects use*/ð/* sound instead of word *the*. These subjects practice the frequent substitution of sound instead of words in different passages. Findings of sound substitution errors consolidate the assumption that if a subject is excessively involved in phonemic transcription, his spelling will be affected due to the overlapping between sounds and spellings.

Table 22: Substitution due to /ʃ/ Sound

S. No	Phonemic transcription	Correct spellings	Spelling errors	Frequency
1	| ˈʃəʊldə	Shoulder	*ʃoulder*	1
2	səˈluːʃn̩	Solution	*soluʃn*	1

/ʃ/is a consonantal sound, voiceless in nature. Majority of the errors committed under the impact of /ʃ/sound have been explained in the category of *sound letter correspondence* except for these two examples as mentioned in table 4.3.1.2. In this category first example is word *shoulder*, misspelled by one subject as *ʃoulder* by the substitution of letter <sh> with / ʃ/sound. A similar kind of substitution also found in a word *solution,* misspelled by one subject as **soluʃn*. In this error, subject substitute letters <tio> with /ʃ/sound. This kind of substitutions are not commonly observed but due to the continuous conversions of phonemic transcription into spellings, subjects might substitute sounds in a place of letters.

Table 23: Substitution due to /tʃ/ Sound

S. No	Transcription	Correct spellings	Spelling error	Frequency
1	| brɑːntʃ	Branch	*Brantʃ*	1

/tʃ/ sound is articulated by foreign language learners by doing its interpretation with a letter combination of <ch>. While analyzing the data, one *sound substitution error* is highlighted where subject use /tʃ/ sound in the spellings. | *braːntʃ* has a correct spelling as *branch,* misspelled by one subject a* *brantʃ* by adding / tʃ/ sound as a substitution of letters <ch>. This can be considered as the sound impact on spelling because / tʃ/ is a new sound, learn by the subjects in first two months of receiving sound awareness. Substitution of this sound in the spellings shows the impact of sounds on the spellings while according to the non-phonetic nature of English language, sounds and spellings have different parameters.

Table 24: Substitution due to /s/ Sound

S. No	Transcription	Correct spelling	Spelling error	Frequency
1	| ˈsentə |	Center	*Sentre*	3
2	ˈɪnsɪdənt |	Incident	*Insident*	9
3	rɪˈsiːvə |	Receiver	*Resiver*	7
4	dɪˈseptɪv |	Deceptive	*Diseptive*	13

/s/ is a voiceless, consonantal sound easily produced by language learners. While analyzing the data, errors of sound substitution are found due to the correspondence between sound /s/ with letter <s> and <c>, mentioned in Table 4.3.1.4.

One commonly occurring error is *center*, misspelled by three subjects as **sentre*. A similar kind of sound substitution is present in word *incident*, misspelled as **insident.* These sound substitutions are explored under the impact of /s/ sound used in phonemic transcription which also reflects in the spellings. In this manner, another excessively found error is*deceptive*, misspelled by thirteen subjects as **diseptive* which is the complete replacement of phonemic transcription of / *dɪˈseptɪv* | in the form of letters.

From these kinds of sound substitutions, it can be anticipated that language learner do not separate sounds from spellings while in different common words they mixed up their alphabetic knowledge with phonemic knowledge. Secondly, due to the similarity between sound /s/ and letter <s>, these errors can also fall under the heading of *sound-letter correspondence* but due to the conversion of phonemic transcription into spelling, sound /s/ have been discussed under the heading of *sound substitution error*.

Table 25: Substitution due to /k/ Sound

S. No	Transcription	Correct spellings	Spelling error	Frequency
1	| krept |	Crept	*Krept*	7
2	kɑːm |	Calm	*Kam*	4
3	ˈplæstɪk	Plastic	*Plastik*	8

/k/ sound is a consonantal voiceless sound easily articulated by language learners due to the similarity between sound */k/* and letter<k>. According to the phenomenon of *sound substitution,* the first example mentioned in Table 4.3.1.5 is *crept*, misspelled by seven subjects as **Krept* which is the substitution of letter <k> instead of <c>. This can be considered as an impact of phonemic transcription /krept/ which also reflects in the spelling error **krept*. Similarly, *calm* is misspelled by four subjects as **kam* which can also be considered as sound substitution under the impact of phonemic transcription. Another excessively found error is word *plastic* misspelled by eight subjects as **plastik.* In this example letter <c> substitute with letter<k>. All relevant examples given in this category shows the spelling errors of subjects which are committed with reference to sounds used in phonemic transcription. These errors of /k/ sound can also be placed under the heading of *sound-letter correspondence* but due to the similar forms of sound and letter, it has been discussed under the heading of *sound substitution*.

Table 26: Substitution due to /z/ Sound

S. No	Transcription	Correct spellings	Spelling error	Frequency
1	ˈmɪsɪz |	Mrs	*Misses*	14
2	vɪzɪtɪŋ |	Visiting	*Viziting*	4
3	hæz |	Has	*Haz*	3
4	ˈrezɪdənt |	Resident	*Rezident*	5

/z/ is a voiced consonantal sound, easily produced by language learners due to the similarity between letter <z >and sound /z/.

While analyzing the data consist of phonemic passages, certain *sound substitution errors* appear under the influence of /z/ sound and relevant examples are mentioned in Table 4.3.1.6. One frequently occurring error is phonemically transcribed as / ˈmɪsɪz /, an abbreviation as *Mrs.* While half of the subjects misspelled it as **misses*. This misspelled form of Mrs. also reflects the impact of transcription on the spellings.

Second *substitution error* occurs in word *visiting* which is misspelled by four subjects as **viziting*. In case of correct spellings of *visiting*, sound/z/ represent letter <s> but the subjects convert it under the impact of phonemic transcription and write it as* *viziting*. These kinds of sound substitution errors prove that language learners cannot draw a separate line between sounds and spellings of English, rather they mixed it up in certain situations. A similar kind of *sound substitution error* is found in word *resident* and *has*, wrongly spelled by study subjects as **rezident* and **haz*, respectively which reinforced the idea of sound based spelling errors.

Table 27: Substitution due to /f/ Sound

S. No	Phonemic Transcription	Correct spelling	Spelling error	Frequency
1	| ˈtelɪfəʊn |	Telephone	*Telifone*	2

In English spellings letter <ph> and <f> are used to symbolize consonantal sound /f/. In this category, subjects wrongly used sound /f/ for the letter <f>. Here only one example is found in word *telephone*, misspelled by two subjects as **telefone* which is the substitution of sound /f/ with letter <f>. This kind of sound substitution shows the impact of phonemic transcription presented in the form of spellings.

Table 28: Substitution due to /w/ Sound

S. No	Transcription	Correct spelling	spelling error	Frequency
1	/wen/	When	*Wen*	5

/w/ is a voiced semivowel sound. Like /f/ sound, only one spelling error is found in this subcategory which is committed by five subjects.

Due to the non-phonetic nature of English language, letter combination <wh> used to refer /w/ sound in a word *when* misspelled by five subjects as **wen*. This

spelling error reinforces the idea of sounds affecting spellings because subjects only convert phonemic transcription /*wen/* into letters **wen* which causes a spelling error.

Table 29: Vowel Substitution Error

S. No	Types of Vowel Substitution Error
1	Substitution due to / i:/ sound
2	Substitution due to / i /sound
3	Substitution due to / æ/ sound
4	Substitution due to /ʊ/ sound
5	Substitution due to /ɒ/ sound
6	Substitution due to /ʌ/ sound
7	Substitution due to / ə/ sound

Vowel substitution is the second subcategory of *sound substitution errors*. Twenty vowel sounds of English language are divided into monophthongs and diphthongs. Each vowel sound possesses certain individualities with reference to its production, marking it different from other vowel sounds. Due to the slight variation and modification in the articulation of vowel sounds, it appears to be a complicated task for language learners. According to *Cook's classification of spelling errors*, *vowel letter substitution* is a subcategory that falls under the heading of *letter substitution errors*. While according to the analysis of data collected through the present research, sound substitution errors are introduced as a subcategory that includes vowel substitution errors. Instead of using errors due to vowel letter, this subcategory deals with the substitution of vowel sounds in place of letters.

Table 30: Substitution due to / i:/ Sound

S. No	Phonemic transcription	Correct spelling	Spelling error	Frequency
1	| brˈliːf |	Belief	*Beli:f*	1
2	diːl	Deal	*Di:l*	2

/*i*: / is a long, unrounded vowel easily produced by language learners. In this category of substitution due to/*i*: / sound just possesses two examples. First example the word *belief* is misspelled by one subject as **beli:f*, by substituting letter<e> with sound /i:/ in spellings. Second example of this category also deals with the substitution of letter <ea> with a sound */i: /*. Here word is *deal*, misspelled by two subjects as *di:l*. This substitution of sounds in spellings can be considered as the impact of continuous phonemic conversion which causes the usage of /i: / sound in spellings.

Table 31: Substitution due to / i /Sound

S. No	Phonemic transcriptions	Correct spelling	Sound based spelling errors	Frequency
1	| ˈsɪmpli |	Simply	*Simpli*	1
2	ˈprɒbəbli	Probably	*Probabli*	2
3	ˈveri |	Very	*Veri*	3

/i/ is a short, unrounded vowel sound which is easily produced by language learners by making sound-letter correspondence between sound /i/ and letter <i>.

While analyzing the data, few sound substitution errors are highlighted committed by the subjects under the impact of /i/ sound. According to the examples mentioned in table 4.3.2.2, first example is word *simply*, misspelled by one subject as* *simpli*. This can be assumed as the impact of sound /i/ in the spellings of the subjects, the same problem is illustrated in the other examples such as *probably* and *very*. Here subjects substitute letter <y> with sound /i/, causing the spelling error. Generally, these words are assumed as commonly used words and the sound substitution in these words can be anticipated as the impact of sounds on the spellings.

Table 32: Substitution due to / æ/ Sound

S. No	Phonemic transcription	Correct spellings	Spelling errors	Frequency
1	ˈæktɪv	Active	*æktive*	1
2	ˌmægəˈziːn |	Magazine	*Mægzine*	2

/ æ / is a short vowel sound in English. Articulation of / æ/ sound seemed tricky for language learners as they face difficulty in understanding the mouth position involved in the production of / æ/sound.

While analyzing the data, two examples of *sound substitution errors* are underlined, added in table 4.3.2.3. Here the relevant examples are *active* and *magazine* where subjects substitute / æ/sound in spellings. For these errors, misspelled versions are* *æktive* and **Mægzine*, showing the intralingual impact of sounds on spellings. The substitution of vowel sound in spellings might be the result of continuous phonemic transcription due to the lack of early knowledge about Phonetics and Phonology at School or College level regarding these study subjects.

Table 33: Substitution due to /ʊ/ Sound

S. No	Phonemic transcription	Correct spellings	Spelling errors	Frequency
1	| gʊd	Good	*gʊd*	1
2	bʊks	Books	*bʊx*	1

/ʊ/ is a short rounded vowel, close to /ɔː / sound in pronunciation. The common interpretation of /ʊ/ sound in spelling comes through letter <u>, double letter <oo> and in certain spellings <o> can be used for the representation of /ʊ/ sound. After marking the data, just two spelling errors are underlined, committed by one subject under the impact of /ʊ/ sound. These two spelling errors cannot be ignored due to the substitution of sounds instead of letters.

Here the words *good* and *books are exemplified* as commonly used spellings of the study subjects. For the first example of *good,* subjects substitute the letter <oo> with a sound /ʊ/. This kind of sound substitution instead of letters could be anticipated as the overlapping occurring between sound awareness and the spelling ability of the

subjects. In the second example, word books is misspelled as **bʊx* which shows the impact of sounds at two levels. First /ʊ/ sound is substituted instead of letters <oo> and secondly <x> is added under the influence of pronunciation.

Table 34: Substitution due to /ɒ/ Sound

S. No	Phonemic transcription	Correct spellings	Spelling errors	Frequency
1	fɒg |	Fog	*fɒg*	1
2	gɒn |	Gone	*gɒn*	1

/ɒ/ is a short vowel, produced with slightly rounded lip position. In certain conditions language learner misinterpret this sound with /a: / sound. According to the researcher's teaching experience of Phonetics and Phonology, language learners face problems in the identification of this sound while converting phonemes into letters. While analyzing the data, a limited number of subjects commit sound substitution errors due to the impact of /ɒ/ sound**.** Here the examples *Fog* and *gone* mentioned in the table 4.3.2.5 are misspelled by one subject as * *fɒg* and **gɒn*. These sound substitutions can be anticipated as the impact of sound awareness on the spellings. The more a subject involve in transcription, the more a sound knowledge reflects in his spellings which causes the variety of spelling errors. This kind of sound substitutions are few in number but the presence of these errors in writing authenticates the idea of sounds influencing letters.

Table 35: Substitution due to /ʌ/ sound

S. No	Phonemic transcription	Correct spellings	Sound based spelling errors	Frequency
1	| ˈstrʌgl̩ɪŋ	Struggling	*strʌgling*	1
2	ʌp |	Up	*ʌp*	2
3	sʌm |	Some	*sʌm*	2

/ʌ/ sound is a monopthong produced with unrounded lip position. From the marked data of phonemic passages, it appears that / ʌ / sound has a prominent impact on spelling. Instead of doing *sound-letter correspondence*, subjects use it in spellings.

Although these subjects are few in numbers however the existence of these errors has a great impact of sounds on spellings. While analyzing the data, misspelling appears in the spellings of *up, sum* and *struggling* by adding / ʌ/ sound in a word. This sound substitution can be considered as the intralingual impact of sounds, affecting the spelling ability of study subjects.

Table 36: Substitution due to / ə/ Sound

S. No	Phonemic transcription	Correct spelling	Spelling errors	Frequency
1	| ˌmægəˈziːn |	Magazine	*mag əzin*	1
2	ˈsentə |	Center	*centə*	2

/ ə/ is considered as one of the most difficult sounds for Pakistani language learners as they mix it up with other vowel sounds. In this scenario, spelling errors highlighted after marking of data were *magazine* and *center,* misspelled by study subjects by the substitution of /ə/ sound in spelling. This kind of sound substitution in spellings can be considered as the impact of phonemic transcription which reflects in spellings and causes spelling errors.

Table 4.3.3 Diphthong Substitution Errors

S. No	Types of Diphthong substitution error
1	Substitution due to /aɪ/ sound
2	Substitution due to /eɪ/ sound

Diphthongs are the combinations of vowel sounds. In diphthongs, there is a glide from one vowel to another vowel sound. Due to this gliding quality of sounds, they are also called gliding vowels. There are eight diphthongs in English language which are produced by two adjacent vowel sounds. The maximum errors occurred due to diphthong are added in the category of sound-letter correspondence. Here diphthongs are discussed under the category of *sound substitution errors* that deal with the replacement of diphthongs instead of letters in a word.

Table 37: Substitution due to /aɪ/ Sound

S. No	Phonemic Transcription	Correct spellings	Spelling errors	Frequency
1	| ˈraɪtɪŋ |	Writing	*Raiting*	4
2	saɪd |	Side	*Said*	13
3	aɪlənd /	Island	*Iland*	7

/aɪ/ sound is produced by the combination of /a/ and /i/. Majority of Pakistani language learners are unable to articulate diphthongs in an accurate manner due to the gliding effect of two sounds. While analyzing the data, various spelling errors are highlighted under the impact of /aɪ/sound. One excessively found error is the word *side* which was phonemically described as /saɪd/, misspelled by subjects as **said.* Instead of focusing on the use of diphthongs, majority subjects converted these sound symbols into spellings. They replace /aɪ/ / diphthong into letter<a> and <i>. Similarly, in next word *writing,* four subjects have the substitution of sound in place of letters by writing it **raiting,* under the impact of diphthong /aɪ/.

In another error, seven subjects replace /aɪ/ sound with its pronunciation. Instead of focusing on the exact spellings of *island,* the subject writes the spellings as **iland* which is the conversion of phoneme into its pronunciation. While in real context English spelling and pronunciation have lack of correspondence. This kind of substitution errors are limited in number but effective to validate the assumption, made by the researcher.

Table 38: Substitution due to /eɪ/ Sound

S. No	Phonemic transcription	Correct spelling	Spelling error	Frequency
1	| seɪf |	Safe	*Seif*	2
2	meɪn |	Main	*Mein*	4

Diphthong /eɪ/ is produced by the combination of two short vowel sounds /e/ and /ɪ /. Here vowel sound glides from sound /e/ towards /ɪ /. In the Pakistani context, language learners can easily learn the sound/eɪ/ as they try to develop a kind of

similarity between diphthong/eɪ/ with long /a: / sound. From the analysis of collected data, two spelling errors are highlighted. These sound substitution errors show the conversion of sound/eɪ/ into the spellings by writing it in the form of letter <e> and<i>. In this context, language learners write the spellings of *safe* as **seif*, which look like the conversion of transcription */ seɪf /* into spellings. Similarly, *main* is misspelled by four subjects as **mein* that could also be considered as the reflection of phonemic transcription of / *meɪn/* into spellings. Although the limited number of subjects commit these kinds of spelling errors and the presence of these errors shows the impact of /eɪ/ sound on the spellings of the subjects.

Table 39: Transposition Errors

S. No	Phonemic transcription	Correct spellings	Spelling errors	Frequency
1	| rɪˈsiːvə	Receiver	*Reciever*	6
2	ɪgˈzɑːmpl̩	Example	*Exampel*	2

According to *Cook's classification*, *transposition* deals with those spelling errors where consecutive letters change place. Cook (1997) claimed that transposition of letter occurred in two forms, in letter pairs <e> and <i> and in homophones. After marking the data, only two *transposition error*s are found to be based on transposition between <e> and <i>. First error of transposition occur due to letter pairs <e> and <i> causing error **reciever* wrongly spelled by six subjects. Another word indicating the *transposition errors* is *example,* wrongly spelled by two subjects as **example.* Contrary to the subcategories mentioned by Cook, errors due to homophone are not found in transposition, rather homophonic errors are added and analyzed by the researcher as a separate category.

Table 40: Past Form Errors

Phonemic Transcription	Correct spelling	Spelling error	Frequency
stɒpt |	Stopped	*Stopt*	10
lʊkt |	Looked	*Looket*	4

In English language, there are three ways to pronounce *ed* forms of regular verbs. This variation can be identified by the final sounds of the base forms in term of

voicing. In Phonetics and Phonology, voicing refers to the vibration of vocal cords in the articulation of sounds. In English language, consonant sounds are voiced as well as voiceless. According to the rules of past forms if a base form ends with a voiced sound then the final *ed* will be pronounced as /*d/*. For example *moved*, *stayed* and *returned* are the past forms of verbs where *ed* sounds like /d/. On the other hand, if it ends with a voiceless sound, the final *ed* will be pronounced as /t/. For example, *worked*, *dropped* and *finished* are the past tense verbs where the *ed* ending sounds like /t/. While the third rule is the amalgam of above-mentioned rules where *ed* will be pronounced *id* if the final sound of base form is /t/ or /d/. These rules of past forms were difficult for the study subjects due to their complex nature.

In the collected data of phonemic passages, two spelling problems are explored that are indicating the past forms errors. Ten subjects commit the spelling error of **stopt* while actual spellings are *stopped*. Secondly **Looket* is written by four subjects instead of *looked* phonemically transcribe as/ lʊkt /. These misspellings committed by the study subjects under the influence of /t/ sound used in phonemic transcription also features in the spellings

The conversion of /stɒpt / and/ lʊkt / into spellings falls under the category of sound based spelling errors. This category is a new addition with the reference to *Cook's classification of spelling errors.*

Table 41: Homophonic Errors

S. No	Phonemic Transcription	Correct spelling	Spelling error	Frequency
1	wʌn |	One	*Won*	7
2	| sʌm |	Some	*sum*	5
3	wɪtʃ |	Which	*Witch*	3
4	həʊl	Whole	*hole*	2

Use of homophones in English language complicates the process of English language learning. Homophones are the words which have the same sound but differs in meaning or derivation. Different pairs of homophones become the cause of misunderstanding between spelling and pronunciation for English language learners.

Most of the homophones create complications due to phonological blending.

Commonly, English language students have problems in interpreting homophones while doing phonemic transcription. Although these subjects have a context based paragraphs for the conversion of phonemes into spellings still they commit various spelling errors. According to the collected data / wʌn/ is misspelled by seven subjects. Actual spelling is *one* but seven out of twenty subjects write it as **won*. Although the context is properly present in the given paragraph, yet many study subjects interpreted it as **won* due to the influence of /w/ sound in transcription. This could be placed under the category of *sound based spelling error* because in normal situation subjects do not commit spelling errors in writing *one.* Second commonly found spelling error observed in the spelling of /sʌm/ where five subjects out of twenty interpreted it as **sum* while its actual spellings are *some*. In the same way, the word /wɪʧ/ is misspelled by three subjects as **witch* while according to the context given in a paragraph, it is spelled as *which*. This error of study subjects can be considered as misinterpretation under the impact of /ʧ/ sound. These *homophonic errors* occur due to the similar sound. In this context, spellings are not wrong according to the transcription but it might be misunderstood by some subjects. Here, *homophonic errors* are explained as a separate category while according to *Cook's classification of spelling errors*, homophones fall under the category of t*ransposition*.

4.2 Analysis of Focused Group Discussion

Focused group discussion is a qualitative technique for data collection where a group of people is gathered at one place, for sharing their point of views about a specific topic. According to Denscombe (2007, p.115), perfect number for focused group discussion varies between six and nine members who are called at one place, to share their point of view about a topic. This kind of discussion is organized by a moderator (researcher) who calls a homogenous group who have a clear idea about the topic and they can reflect on the questions asked by the researcher. According to Casey and Krueger (2000), focused group discussion is a kind of a discussion that requires more natural environment as compared to the individual discussion because here participants are influencing and being influenced by each other. While in case of an individual discussion respondents are free to share their opinion. For this purpose, first of all, moderator needs to make a balance between all members. Secondly, the

moderators have to adopt a neutral role with interactive quality through which he could trigger or generate discussion among group members. This tool was added to validate the research problem, already explored through Pre-Experimental study. As a result, the addition of focused group discussion in pre-experimental research named it a mixed method study.

For the present study focused group discussion was conducted in functional courses, FC department, NUML Islamabad. In order to take their point of views, six faculty members of FC Department were called at one place. These six teachers had an ample experience in the field of teaching Phonetics and Phonology. Out of six, two were the native speakers of English. Researcher herself acted as a moderator and the discussion was based on nine questions which were related to their experience of teaching Phonetics and Phonology. Majority of the questions were based on the activity of phonemic transcription, commonly practiced in the class of Phonetics and Phonology. One question was referring to the spelling status of Diploma students. In certain questions, some members shared the same experience while few questions received the variety of opinions. Time period for this discussion was forty-five minutes and throughout the discussion, the researcher performed a neutral role for collecting various responses.

4.2.1 Analysis of Question 1

Do these diploma students have any idea about the sounds of English language at school or college level?

All the teachers strongly agreed to the point that the students enrolled to Diploma level do not have any know-how of phonemes of the language. In Pakistani schools and colleges, they are not taught Phonetics while being taught English as a compulsory subject. Resultantly, even after completion of twelve years of formal education, their pronunciation is not up to the mark. According to the collective response of all members, these language learners come from far-flung areas with week linguistic ability and in Pakistani educational system phonemic awareness is not the part of course content. The teachers commented that now in some schools, young learners are being given the concept of letters and their possible sounds.

4.2.2 Analysis of Question 2

What do you think about the relationship between sounds and spellings of English language and how does it affect the students at Diploma level?

The literature review of the study has presented many types of researches which clearly supported the view that there is no one-to-one relation between English sounds and letters. This is mostly arbitrary. The teachers of the focused group were also of the same opinion. They validated these research studies by arguing that some letters have more than one utterances. For example, the first letter *c* in the word *circus* has the sound /s/ and the second is uttered as /k/. Furthermore, different letters can have the same sound as the letters *k, q* and *c* have /k/ sound. The problem worsens when a combination of letters presents one sound, for instance, *ch* in the word *chef, sh* in *shop, ss* in *pressure*, *tion* in *classification* and *sion* in *comprehension.* Then, the presence of silent letters is also troublesome for them. They remain confused in the identification of sounds in words having silent letters. Such cases create difficulties for these language learners. Being non-native learners, Pakistanis pronounce every letter present in a word, which is the major source of mispronunciations. Actually, learning Phonetics for these learners involve unlearning of the already learnt pronunciations which is a hard nut to crack for them.

While marking the post-tests, the researcher noticed spelling errors in the words *seat* and *team*. They wrote them as *seet* and *teem* according to pronunciation. Another commonly occurred error was of the conjunction *when* which was interpreted as *wen*. Under the influence of phoneme /w/, the subject missed the letter *h* in the word that caused a spelling error. Likewise, for the words *essential* and *mention*, spelling errors of *essencial* and *menssion* were reported where the subjects forced the letters in order to develop a correspondence between letters and sounds. All these errors are sound based thus, supporting the researcher's stance of the impact of phonemic transcription on learners' spelling ability.

4.2.3 Analysis of Question 3

How many times did you ask diploma students to do phonemic transcription in diploma classes? Share your observations.

The teachers told that right at the beginning of the course, phonemic transcription is not possible because these learners do not know anything about the

English phonemes and transcription of words. For doing phonemic transcription, learners must have command on all the sounds comprising consonants and vowels. They further added that teaching these two classes of sounds including their symbols along with the sound identification roughly takes almost one month. After one month, mostly teachers ask students to transcribe the words comprising consonants and monophthongs (pure vowels). Once, the learners become apt in identifying individual sounds, then phonemic transcription becomes part and parcel of the language classroom for rest of the semester every now and then. Some teachers teach diphthongs also with consonants and vowels. So, they start transcription in their classes almost after one and a half months. For this purpose, different activities based on phonemic evaluation are introduced. Mostly, the students are asked to transcribe words or vice versa as much as possible along with reinforcement of confusing sounds and rules related to some prominent sounds like /r/ and /m/.

4.2.4 Analysis of Question 4

What is your opinion about the spelling status of Diploma students?

The discussion with the teachers of the focused group confirmed the statement that spelling status of Diploma students is better and impressive as compared to the students of other levels, which is Certificate, and Foundation levels. None of them opposed the idea of their spelling ability. Through the study, the researcher figured out that the first possible reason in this regard can be that Diploma level is advanced in comparison to the aforementioned levels. For these levels the minimum eligibility criterion is matriculation. But for Diploma, it is Intermediate certification so, this selection criterion is one of the reasons for their better spelling ability. All these factors add to their spelling ability as they are exposed to the language more than the rest of the two levels. But being unaware of the English sound system, these learners are at the same level of phonemic awareness as they do not know anything about Phonetics and Phonology or if anyone hardly knows, their knowledge is of just surface level.

4.2.5 Analysis of Question 5

Do you think the continuous conversion of phonemic transcription into normal spellings has an impact on the spelling ability of language learners?

In response to this question, the teachers had varied answers. Some teachers were of the view that for beginners who have just learnt the English phonemes and transcribing words it may be very early to have an impact of transcription on their spellings since the students are at the onset of learning to identify sounds. But they suggested that it may happen at later stages of the learning process when students have done enough practice in phonemic transcription. They further supported this argument with reference of good students who are much fond of transcription and with the passage of time they start thinking about spellings in term of phonemic transcription. According to them, these students start writing spellings under the impact of phonemic symbols which leads to spelling errors. So the teachers anticipated that other students would also likely to commit such errors if more practice is given.

But a few teachers said that this is very likely to happen but it is a time consuming process since it needs much practice to interpret spellings with the help of phonemes. But the researcher nullified this argument by exposing the subjects to maximum transcription for two months daily and continuously. The purpose of this practice was to observe the impact of phonemic transcription on the subjects' spelling ability and to bring them to the advance level of the course. The researcher found that continuous conversion of phonemic transcription into normal spellings has a negative impact on spelling ability of the subjects as they had started writing spellings under the influence of the sounds while identifying words from the given phonemic transcription in the passages.

4.2.6 Analysis of Question 6

While learning the course of Phonetics and Phonology, which sounds create more confusion for foreign language learners and why?

Most of the teachers suggested that usually diphthongs and some pure vowels (monophthongs) are tricky for Pakistani learners. One teacher related it especially to the diphthong /əʊ/. In support of diphthongs, the researcher also found while compiling the data that under the influence of this diphthong, the subjects committed spelling error in the words like “so”, “open” and “smoking” and wrote them as *sou*, *oupen* and *smouking*, the way they produced glide, they replaced the letters with the letters *o* and *u*. These kinds of errors were added in the subcategory of sound-letter

correspondence, falling under the *letter insertion error*. These non-native learners of the English language missed the glide under the impact of the sound and added it to spellings.

The researcher also figured out some instances of spelling errors which were based on the confusion of certain vowels, for example, schwa /ə/ and /ʌ/ sounds which strengthened the focused group's response to the very question. They found it difficult to identify as the two differ in the level of their strength, schwa /ə/ being weak and cut /ʌ/ is strong. As per RP (Received Pronunciation), /ə/ is not articulated in the final position, so, in words like center, some subjects wrote it like *centeə* causing the spelling error. Then, /ə/ is also confused for its writing as some subjects confused it with letters *e* and *a*as it resembles the English letter *a*. This led to the spelling error in the word *resident* and *bottom* which were written as **residant* and **bottam*. Likewise, the diphthong /aɪ/ was interpreted as the English letters <a> and <I>because of similarity in the phonemic representation of the diphthong with the respective letters. Under this influence, study subjects commit errors in the words such as, *side* and *island* reported to be **said* and **iland* in orthography.

Besides diphthongs and pure vowels, the researcher also encountered spelling errors based on consonant sounds' intrusion. For example, the subject relying just on sounds /w/ and omission of /r/ in the middle position spelled the word *whispered* and *when* as *wisped* and *wen* which eventually resulted in these errors.

4.2.7 Analysis of Question 7

How often did you use the activity of converting phonemic transcription into orthography and which sounds are more problematic in this activity?

All teachers agreed that they cannot practice the activity of phonemic transcription at the start of a semester. So, they do it in the third month of a semester after providing sound awareness. They had certain reasons for the statement. Firstly, being an utterly new subject, it is really difficult for learners to rectify the conventional concept of consonants and vowels in a short time period. Secondly, it is also a time taking process to teach those sounds along with their identification and phonemic symbols. The major part of the semester is spent in teaching and consolidating correct articulation of sounds and then, start doing phonemic transcription. So, by the third month of the semester, teachers hardly find time to go

for converting phonemic transcription into orthography.

In order to explore the confusing sounds, the teachers showed that sounds which have number of corresponding letters cause problems for language learners. In this practice, pure vowels are more difficult to identify while converting sounds into letters. The examples for these spelling errors from the collected data are *he* as *hee, deal* as *del, belief* as *bileaf*, respectively. Similarly, in diphthongs like /eɪ/, the subjects got puzzled between the shape of letters and phonemes. The phoneme for this diphthong resembles the letters *e* and *i*. Resultantly, the spelling errors of *seif, railway* and *mein* were marked for the words "safe", "railway", and "main". So instead of writing the correct spellings, the subjects replaced the accurate letters with their resembling diphthong.

Apart from these vowels as discussed by the focused group, the researcher also discovered some consonant sounds which were problematic and they bear a similitude to the English letters. For instance, the sound /k/ is just like the letter *k.* Because of this resemblance," plastic" was spelled as *plastik*, "cake"as *kake* and "chemist" as *kemist*. Other than these puzzling vowels and consonants, the subjects also failed to identify homophones in the orthography as their phonemic transcription is the same. The subjects were unable to identify homophonic pairs like *meet* and *meat, made, and maid* even while having the context.

Being a language teacher of Phonetics and Phonology, the researcher had the time constraint in mind, so to address this issue, she designed the course content in a way to manage and provide ample time for conversion of phonemic transcription into orthography in the same time period.

4.2.8 Analysis of Question 8

Do you think that the idea of providing sound awareness as a solo skill is helpful in improving the sounds and spelling development of Diploma students?

All teachers agreed to the point that it improves learners' pronunciation which is the prime objective of the course that is to give phonemic awareness to them and enable them to pronounce any new word that they encounter. And teachers are successful in this regard as far as the pronunciation of words is the focus as the solo skill. But it must be kept in mind that sounds are for spoken words where spellings are not required. Contrarily, spellings are implied in written practice which cannot be

done solo. To improve learners' spelling ability, they should be integrated with some other skill. It would help learners to overcome these errors which are inevitable in a language classroom but they must not exceed to an extent that hampers the intended meaning to be conveyed.

This point is also supported through the researcher's literature review where a number of studies are based on the integration of phonemic awareness either with reading or writing skills not just as a solo skill. Teaching phonemes as a solo skill create confusion which is quite evident from the topic under study and the various examples of misspelled words show the impact of phonemic awareness on learners' orthography.

4.3 Conclusion

4.3.1 Analysis of First Research Question

This part of data analysis was added to explore the data with reference to the research question 1.

- What is the impact of phonemic transcription on English spellings of foreign language learners?

In order to explore the impact of phonemic transcription, phonemic passages were used for the subjects which they converted into spellings. These passages were marked and analyzed by the researcher, showing the impact of sound on spellings. In this regard, the impact was found in the category of sound based omission, sound substitution and *sound letter correspondence* showing the negative impact of sounds on spellings. This impact could be considered intralingual from the category of sound substitution where sound was substituted with letters causing spelling errors. The individual tables were made for each major category and subcategory presented the frequency and percentages of spelling errors. This point was also validated through a question asked in a focused group discussion.

According to the point of view of group members, impact of phonemic transcription appears on spellings but it is a time consuming process. This impact appears after the continuous practice of phonemic transcription and commonly students with good transcription practice face these spelling problems that appear due to phonemic transcription.

4.3.2 Analysis of the Second Research Question

What type of spelling errors are committed by Pakistani EFL learners due to the knowledge of phonemic alphabet?

While marking the data, six major categories of spelling errors were found by the researcher, presented in the form of table highlighting the percentage and frequency of each category. Major categories of *letter omission errors*, *letter insertion errors* and *letter substitution errors* which were further divided into three subcategories of each. Category of *past form*, *transposition,* and *homophonic errors* were limited in number but these are added due to the difference in the nature of spelling errors. From the analysis of data, all categories showed the impact of sound but the ratio varies in number, even in certain subcategories impact did not exist at all.

CHAPTER 5

FINDINGS AND RECOMMENDATIONS

In the light of the data categorized and analyzed through *Cook's classification of spelling errors,* this chapter offers a detailed account of findings of the current study. Findings of the study lined a way to recommend certain strategies for improvement in the course of Phonetics and Phonology.

The population of this study had completed twelve years of academic education with good spelling ability which was validated through the responses of the focused group discussion. Despite being good at spellings, these study subjects committed various kinds of spelling errors due to the treatment provided in Phonetics and Phonology classes. The researcher divided these spelling errors into the following six major categories adapting *Cook's* ***c****lassification of* ***s****pelling* ***e****rrors*.

1. Letter omission
2. Letter insertion
3. Letter substitution
4. Transposition
5. Past form errors
6. Homophonic errors

Out of these six categories, letter substitution comprised the highest percentage of errors making it a frequently occurring erroneous category under the impact of phonemic transcription. After marking and analyzing the data, categories of *letter omission, insertion,* and *substitution* were further divided into three subcategories of each. *Letter omission* had three types which are *omission due to double letters*, *silent letter's omission* and *sound based omission*. Similarly, *letter insertion* was also divided into three subcategories named as *insertion due to double letters, sound based insertion* and *sound letter correspondence*. In *letter substitution errors,* subcategories of *single letter substitution, multiple letter substitution,* and

sound substitutions were found.

In the subcategory of *sound letter correspondence* and *sound substitution* the impact of sounds on spellings was analyzed according to individual sounds including consonants, vowels, and diphthongs. Not all English sounds indicated the impact but few sounds showed prominent impact causing misspelling as mentioned in data analysis in the tabulated form.

The current study highlighted the impact of phonemic transcription on normal English spellings especially in case of adult language learners. Phonemic transcription practiced in the English language classes plays an active role in better identification of sounds and in improving English language learners' pronunciation. The detailed analysis of the collected data led the researcher to draw the following findings:

5.1 Findings of the Study

- In the subjects, *letter substitution errors* were excessively found which comprised 57.21 percent having the highest frequency of sound substitution errors followed by *single letter substitution* and *multiple letter substitution.*
- The consonantal sounds showing impact on spellings were /ð/, /ʃ/, /tʃ/, /s/, /k/, /z/, /f/and */w/.* Out of twenty four consonantal sounds, the subjects showed more sound substitution errors in above mentioned eight sounds without any particular criterion/ reason.
- Impact of vowel sounds on spellings leading to the errors presented through the category of *sound substitution errors* occurred in presence of these vowel sounds; /i:/, /i/, /æ/, /ʊ/, /ɒ/, /ʌ/and/ə/.
- In comparison to consonants and pure vowels, diphthongs showed less impact on spellings. Out of eight diphthongs, only two, /*aɪ*/, and/*eɪ,*/had an impact on spellings by substituting sounds instead of letters in the words.
- The percentage of *letter omission errors* was 22.59 percent of the total errors. It was divided into three subcategories, *omission due to double letters*, *silent letter's omission* and *sound based omission*.

- *Silent letter's omission* was calculated to have the highest frequency, showing the maximum errors occurring due to vowel letters and specifically silent letter <e> which was missed from the phonemic transcription causing misspelling.
- *Omission due to double letters* displayed the prominent impact of the phonemic transcription on spellings which occurred due to doubling of the consonant letters. The least occurring errors of letter omission was from the subcategory of *sound based omission* where letter omission occurred due to the sounds used in phonemic transcription.
- *Letter insertion* appeared as the third largest flawed category which is 12.5 percent of the total errors. It contained the subcategories of *double letter insertion, sound based insertion* and *sound letter correspondence* with the highest frequency of 69.23% of *letter insertion error*.
- The sounds causing errors of letter correspondence were /ʃ/, /dʒ/, /iː/, /uː/, /əʊ/and /aʊ/.Being limited in number, these sounds are explained in one category not particularly with reference to consonants, vowels and diphthongs, individually.
- The *sound based insertion* dealt with insertion of the consonant sound /j/in place of the letter *j* in correct spellings.
- *Double letter insertion* did not show specific impact of the respective sounds but it aligned with Cook's subcategory of *doubling consonant*, without having any vowel letter in spellings.
- In comparison to the above mentioned major categories, the rest of three categories have limited number of errors. Even in the case of transposition, only two errors were found having 0.96 percent while errors due to past forms and homophones were 1.92 percent and 4.80 percent respectively. Transposition errors mirrored slight impact of the phonemic transcription on normal spelling but it can also be considered an effect of the letter pair like <e> and <i> causing spelling errors. While in the case of past form and *homophonic errors*, the impact of sounds was prominent as mentioned in data analysis through tabulation.

5.2 Conclusion

The present study was undertaken with the purpose of finding the impact of phonemic transcription on learners' spellings studying at Diploma level at the Functional Courses Department, NUML, and Islamabad. The researcher delimited her research to the English consonants and vowels sounds, both pure vowels or monophthongs, and diphthongs. Through this study, the researcher has drawn the conclusion that negative impact of phonemic transcription exists on normal English spelling but it varies according to various sounds. Consonants and pure vowels caused more confusion between sounds and spellings while diphthongs were less problematic area in this regard. Consonant sounds proved troublesome in identification of the correct spellings due to the similarity between sounds and letters which led to spelling errors. While in case of pure vowels, commonly found spelling errors occurred in order to develop sound letter correspondence by these subjects. In comparison to consonants and pure vowels, diphthongs were easily identified in phonemic transcription due to the prominent gliding quality and as a result, less errors were explored under the impact of diphthongs.

The course of Phonetics and Phonology is designed for the development of better pronunciation in the language learners and it tries to address the confusions that these learners face because of lack of sound-letter correspondence. In the present study, findings of the research develop a link between phonemic transcription and spellings which is not commonly focused in language classes. The reason for discussing the variables of phonemic transcription and spellings was not the biased attitude towards phonemic transcription rather it was a problem the researcher observed in her teaching experience of Phonetics and Phonology over the years.

By adapting *Cook's classification of spelling errors*, various categories of spelling errors have been highlighted. Findings of the study did not highlight the negative attitude towards the subject of Phonetics and Phonology, rather it explored those sounds which created more ambiguity between letters and sounds. Some categories of spelling errors showed the impact of non-phonetic nature of the English language while in a few cases, impact of phonemic transcription appeared as the dominant cause of spelling errors. Here, errors of addition, omission, and substitution of sounds in spellings consolidated the negative impact

of phonemic transcription on normal spellings. The purpose of conducting this research was to improve the teaching of Phonetics and Phonology by integrating it with other language skills making it more spontaneous.

Resultantly, it can be concluded that only the course of Phonetics and Phonology is not enough for improving pronunciation of the language learners rather equal attention to the spellings is also direly needed.

5.2.1. Limitations

The study also faced certain limitations:

- Firstly, the selected research design was Pre Experimental, one shot case study which has threats of validity. The reason for selecting pre experimental design instead of true experimental was the lack of phonemic knowledge on the part of study subjects.
- Secondly, this research has a limitation of males study subjects whereas females were not included as a sample.
- Thirdly, the treatment phase only dealt with the teaching of consonants, pure vowels, and diphthongs while triphthongs were excluded from this study.
- Fourthly, the study may have the issue of Selection-Treatment Interaction, where it was inconvenient for the researcher to conduct the same experiment on different sections.

5.2.2 Recommendations

Findings of the research are helpful for making a few recommendations to the teachers teaching phonetics who need to update their teaching strategies by focusing on the weak areas of students highlighted in this research.

- First of all, this phenomenon of sound-spelling relationship should be acknowledged and catered to by the teachers of Phonetics and Phonology. Language teachers should be trained through various training programs and workshops so that they would be able to deal with the discrepancy that exists between sounds and letters instead of focusing on the theoretical knowledge of sound. This issue should be catered to simultaneously while providing phonemic literacy.

- For teaching the subject of Phonetics and Phonology, phonemic transcription cannot be ignored. For this, the course of Phonetics and Phonology should be integrated with reading, or writing skills instead of teaching it as a single subject. With this practice, phonemic awareness and phonemic transcription should both be the part of Phonetics course. This way the impact of sounds on spelling can be reduced to a great extent.
- While teaching English sounds, teachers should also focus on the spelling instead of just focusing on phonemic transcription and pronunciation. In order to avoid errors of sound letter correspondence, equal time should be given to phonemic transcription and spellings.
- In order to overcome identification problems of any particular vowel sounds, listening activities of sounds identification should be considered as the essential part of Phonetics course.

5.2.3 Guidelines for Future Researches

The present research offered information about the negative impact of phonemic transcription on learners' spellings. It offered a small amount of new information compared to the previous researches and serves as a good starting point for possible future researches in the area of phonemic transcription. Firstly, the present study deals with the impact of consonants and vowels which include pure vowels and diphthongs but it excludes triphthongs. For this, future research may be applied in the area of triphthongs. Secondly, in order to authenticate the issue of selection treatment interaction, the research may be applied at master's level in NUML, Islamabad or in other universities offering these language programs. Thirdly, the obvious limitation of male participants as study subjects creates a gap, therefore it may be applied to female study subjects as a sample or practiced as a comparative study of male and female genders to explore the impact of phonemic transcription on learners' spellings.

REFERENCES

Abbas, S. (2011). *Identification of pronunciation problems regarding uttering centering diphthongs at elementary level in Pakistan navy model school* (Unpublished Master's Thesis). National University of Modern Languages, Islamabad.

Abu-Rabia, S., & Sammour, R. (2013). Spelling errors' analysis of regular and dyslexic bilingual Arabic-English students. *Open Journal of Modern Linguistics, 3*(1), 58-68. Retrieved from:https://www.researchgate.net/profile/Salim_Abu-Rabia/publication/269793172_Spelling_Errors'_Analysis_of_Regular_and_Dyslexic_Bilingual_Arabic-English_Students/links/54db3c760cf233119bc58cc1.pdf

Akram, M., & Mahmood, A. (2007). The status and teaching of English. *Language in India, 7*(12), 2-5.

Al-Bereiki, S. A., & Al-Mekhlafi, A. M. (2016). Spelling errors of Omani EFL students: Causes and remedies. *Journal of Applied Linguistics and Language Research, 3*(7), 20-46.

Al-Jarf, R. (2009). Phonological and orthographic problems in EFL college spellers. *In TELLIS Conference Proceedings (2-7)*. Retrieved from: https://www.researchgate.net/profile/Reima_Al-Jarf/publication/228495392_Phonological_and_orthographic_problems_in_EFL_college_spellers/links/548a9cb70cf2d1800d7ab140/Phonological-and-orthographic-problems-in-EFL-college-spellers.pdf

Al-Jabri, F. (2006). Common English spelling difficulties of Omani learners. In S. Borg (Ed.), *Classroom research in ELT in Oman* (88-93). Sultanate of Oman: Ministry of Education. Retrieved from: http://www.moe.gov.om/portal/sitebuilder/sites/eps/English/MOE/baproject/Ch%2011%20Common%20English%20spelling%20difficulties%20of%20Omani%20learnersi.pdf

Alsaawi, A. (2015). Spelling errors made by Arab learners of English. *International Journal of Linguistics, 3*(5), 55-67.

Al-Zuoud, K. M., & Kabilan, M. K. (2013). Investigating Jordanian EFL students' spelling errors at tertiary level. *International Journal of Linguistics, 5*(3), 164-176.

Alhaisoni, E. M., Al-Zuoud, K. M., & Gaudel, D. R. (2015). Analysis of spelling errors of Saudi beginner learners of English enrolled in an intensive English language program. *English Language Teaching, 8*(3), 185.

Al-Oudat, A. (2017). Spelling errors in English writing committed by English-Major students at BAU. *Journal of Literature, Languages and Linguistics, 32*, 43- 46.

Aro, M. (2004). *Learning to read: The effect of orthography* (PhD Dissertation). University of Jyvaskyla, Jyvaskyla. Retrieved from:

https://www.researchgate.net/publication/230735268 Learning to read The effect of orthography

Asif, M. (2016). An investigation of the orthographic errors in the graded discussion board of Virtual University of Pakistan. *Journal of Distance Education and Research, 1*(1), 63-83.

Barry, A.K. (2008). *Linguistic perspectives on language and education*. Upper Saddle River NJ: Pearson.

Blachman, B. A., Ball, E. W., Black, R. S., & Tangel, D. M. (1994). Kindergarten teachers develop phoneme awareness in low-income, inner-city classrooms. *Reading and Writing, 6*(1), 1-18. Retrieved from:

https://link.springer.com/article/10.1007/BF01027275

Burleigh, P., & Skandera, P. (2005). *A manual of English phonetics and phonology: twelve lessons with an integrated course in phonetic transcription*. Germany: Gunter Narr Verlag. Retrieved from:

https://books.google.com.pk/books?hl=en&lr=&id=LzWa5TgCJiQC&oi=fnd&pg=PP9&dq=Burleigh,+P.,+%26+Skandera,+P.+(2005).+A+manual+of+English+phonetics+and+phonology:+twelve+lessons+with+an+integrated+course+in+phonetic+transcription.+Germany:+Gunter+Narr+Verlag.&ots=NOObd1DkqW&sig=L5Xr40Apj8Px3p6o1Y7CYmhDn5E#v=onepage&q&f=false

Brown, H, Douglass. (1980). *Principles of language learning and teaching*. New Jersey: Prentice Hall Inc.

Brown, H. D. (2000). *Principles of language learning and teaching*. White Plains, MY: Longman. Retrieved from: https://s3.amazonaws.com/academia.edu.documents/40433526/_H._Douglas_Brown__Principles_of_language_learningBookZZ.org.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1551641463&Signature=3BRxbvm9XV1TxzRnIS7adfvK%2Flo%3D&response-content-disposition=inline%3B%20filename%3DPrinciples_of_language_learning.pdf

Bourassa, D. C., & Treiman, R. (2001). Spelling development and disability: The importance of linguistic factors. *Language, Speech, and Hearing Services in Schools, 32*(3), 172-181. Retrieved from:

https://ajslp.pubs.asha.org/doi/full/10.1044/0161-1461%282001/016%29

Campbell, D. T., & Stanley, J. C. (2015). *Experimental and quasi-experimental designs for research*. England: Ravenio Books. Retrieved from:

https://books.google.com.pk/books?hl=en&lr=&id=KCTrCgAAQBAJ&oi=fnd&pg=PT4&dq=Campbell,+D.+T.,+%26+Stanley,+J.+C.+(2015).+Experimental+and+quasi-experimental+designs++for+research.+England:++Ravenio+Books.&ots=Mdq3FNuEWH&sig=2zk-vRwiLr_mjDOPMW46R4LGx30#v=onepage&q&f=false

Chapman, M. L. (2003). Phonemic Awareness: Clarifying What We Know. *Literacy Teaching and Learning, 7*, 91-114. Retrieved from: https://eric.ed.gov/?id=EJ966147

Chen, Y., Robb, M., Gilbert, H., & Lerman, J. (2001). Vowel production by Mandarin speakers of English. *Clinical Linguistics & Phonetics, 15*(6), 427-440. Retrieved from:

https://www.tandfonline.com/doi/abs/10.1080/02699200110044804

Collins, B. S., & Mees, I. M. (2013). *Practical phonetics and phonology: A resource book for students*. London: Routledge. Retrieved from:

https://www.taylorfrancis.com/books/9781136163722

Cook, V. J. (1997). L2 users and English spelling. *Journal of Multilingual and Multicultural Development*, 18(6), 474-488. Retrieved from:

https://www.tandfonline.com/doi/abs/10.1080/01434639708666335?casa_token=aeHLZM1CFBEAAAAA:XmBGPrbuyKxD-H3uOWiGZzYuNChoS4Z647TU2hHX9ny7MHABjeEX8AyyccNMqDwzTsaYFsJjURs

Cook, V. J. (2004). *The English writing system*. Arnold London.

Crystal, D. (1995). *The Cambridge Encyclopedia of the English Language*. Cambridge: Cambridge University Press.

Crystal, D. (2008). *English worldwide, in Hogg R and Denison D (Eds.). A history of the English language (420- 39)*. Cambridge: Cambridge University Press.

Crystal, D. (2011). *A dictionary of linguistics and phonetics* (Vol. 30). United Kingdom, UK: Blackwell. Retrieved from:

https://books.google.com.pk/books?hl=en&lr=&id=3ZPQVuSgDAkC&oi=fnd&pg=PT5&dq=Crystal,+D.+(2011).+A+dictionary+of+linguistics+and+phonetics+(Vol.+30).+United+Kingdom,+UK:+Blackwell.&ots=Z9HBumVpO7&sig=NNyFXVxu3b5CfSkrdzlnPu0ihvM#v=onepage&q&f=false

Denscombe, M. (2007). *The good research guide for small-scale social research projects*. New York: McGraw-Hill.

Derwing, T. M., & Munro, M. J. (2005). Second language accent and pronunciation teaching: A research-based approach. *Tesol Quarterly*, *93*(3), 379-397.

Derakhshan, A (2015). The interference of first language and second language acquisition. *Theory and Practice in Language Studies*, *5*(10), 2112-2117.

Dich, N., & Pedersen, B. (2013). Native language effects on spelling in English as a foreign language: A time-course analysis. *Canadian Journal of Applied Linguistics*, *16*(1), 51-68.

Dulay, H. C., & Burt, M. K. (1974). Natural sequence in child second language acquisition. *A Journal of Research in Language Studies*, *24*(1), 37-53. Retrieved from:

https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-1770.1974.tb00234.x

Ehri, L. C., Nunes, S. R., Willowa, D. M., Schuster, B. V., Yaghoub-Zadeh, Z., & Shanahan, T. (2001). Phonemic awareness instruction helps children learn to read:

Evidence from the National Reading Panel's meta-analysis. *Reading Research Quarterly, 36*(3), 250-287. Retrieved from:

https://ila.onlinelibrary.wiley.com/doi/abs/10.1598/RRQ.36.3.2

Enli, L. (2014). Pronunciation of English consonants, vowels and diphthongs of Mandarin- Chinese Speakers. *Studies in Literature and Language*. 8(1), 62-65.

Fagerberg, I. (2006). *English Spelling in Swedish Secondary School: Students' attitudes and performance* (Bachelor Dissertation). Karlstad University Retrieved from:

http://www.diva-portal.org/smash/get/diva2:5885/FULLTEXT01.pdf

Fries, C. C. (1945). Teaching and learning English as a foreign language. Ann Arbor, University of Michigan. Retrieved from:

https://eric.ed.gov/?id=ED071477

Fromkin, V., Rodman, R., & Hyams, N. (2011). *An Introduction to language*. Boston, MA: Wadsworth

Garcia, N., Abbott, R. D., & Berninger, V. W. (2010). Predicting poor, average, and superior spellers in grades 1 to 6 from phonological, orthographic, and morphological, spelling, or reading composites. *Written Language & Literacy, 13*(1). Retrieved from:

https://www.jbe-platform.com/content/journals/10.1075/wll.13.1.03gar

Ghani, M. (2003). The status and position of English language in Pakistan. *Journal of Social Sciences and Humanities, 1*(1), 1-5.

Gilakjani, A. P. (2016). English pronunciation instruction: A literature review. *International Journal of Research in English Education. 1*(1), 1-6.

Gilakjani, A. P., & Sabouri, N. B. (2016). Learners' listening comprehension difficulties in English language learning: A literature review. *English Language Teaching, 9*(6), 123. Retrieved from:

https://eric.ed.gov/?id=EJ1101226

Gomes de Matos, F. (2002). *Second language learners' rights. In V. Cook (Ed.), Portraits of the L2 user*. Clevedon: Multilingual Matters.

Hasan, D. R. (2004). *Remaking English in Pakistan*. Islamabad, Pakistan.

Han, Z-H. (2004). Fossilization in adult second language acquisition, Multilingual Matters. New York: McGraw-Hill. Retrieved from: https://books.google.com.pk/books?hl=en&lr=&id=GeC2yKrKMIAC&oi=fnd&pg=PR9&dq=Han,+Z-.H.+(2004).+Fossilization+in+adult+second+language+acquisition,+Multilingual+Matters,+Denscombe,+M.+(2007).+The+good+research+guide+for+small-scale+social+research+projects.+(3rd+ed.).+New+York:+McGraw-Hill.+&ots=g3-Xjy2jAC&sig=7MkUCB1PCpveHN8lgWuwuq-h2V8#v=onepage&q&f=false

Huang, Q. (2016). Experimental research on English vowel errors analysis. *SHS Web of Conferences, 25*, p. 01002. Retrieved from:

https://www.shs-conferences.org/articles/shsconf/abs/2016/03/shsconf_icitce2016_01002/shsconf_icitce2016_01002.html

Johnson, K. (2002). *Vowels and consonants: An introduction to the sounds of languages*. Maldon, Mass. & Oxford: Blackwell Publishers. Pp. xxii+ 191. Phonology, 19(2), 306-310. Retrieved from:

https://www.cambridge.org/core/journals/phonology/article/peter-ladefoged-2001-vowels-and-consonants-an-introduction-to-the-sounds-of-languages-maldon-mass-oxford-blackwell-publishers-pp-xxii191/E3A941195AB8865F399EE16C8CFA5262

Kamhi, A. G., & Hinton, L. N. (2000). Explaining individual differences in spelling ability. *Topics in Language Disorders*. *20*(3), 37-49. . Retrieved from:

https://psycnet.apa.org/record/2000-07709-003

Kaye, J. (1989). *Phonology: a cognitive view*. New Jersey: Lawrence Erlbaum Associates. Retrieved from:

https://www.cambridge.org/core/journals/phonology/article/jonathan-kaye-1989-phonology-a-cognitive-view-tutorial-essays-in-cognitive-science-hillsdale-new-jersey-lawrence-erlbaum-associates-pp-xi-172/3C72C69E34E63CA64FB6B25B183A55B2

Kelly, M., F. (2016). *Spelling development in young school age children* (Graduate

Thesis). University of south Florida.

Khansir, A.A., & Tajeri, M. (2015). The relationship between spelling and pronunciation in English language. *Language in India. 15*(12), 57-69.

Khuwaileh, A. A., & Al Shoumali, A. (2000). Writing errors: a study of the writing ability of Arab learners of academic English and Arabic at university. *Language Culture and Curriculum, 13*(2), 174-183. Retrieved from:

https://www.tandfonline.com/doi/abs/10.1080/07908310008666597?casa_token=IUaCyv8z9LoAAAAA:maP2empCKnp_5YDN3P-1rUzF2chfF0nq3im4lZSMfEHHZSYOmnEXvVEnJJmvzFvyQbo7CvU7guY

Kitzinger, J. (1997). Introducing focus groups. *British Medical Journal*, *311*(7000). Retrieved from:https://www.bmj.com/content/311/7000/299.long

Kothari, C.R. (2004). *Research Methodology: Methods and Techniques*. New Age International Publishers, New Delhi. Retrieved from: https://books.google.com.pk/books?hl=en&lr=&id=hZ9wSHysQDYC&oi=fnd&pg=PA2&dq=Kothari,+C.R.+(2004)+Research+Methodology:+Methods+and+Techniques.+2nd+Edition,+New+Age+International+Publishers,+New+Delhi.&ots=1sY8tCf4A0&sig=DR-ezdbl4goayUDYIqV14exLmoY#v=onepage&q&f=false

Krueger, R., & Casey, M. A. (2000). *Focus groups: A practical guide for applied research*. London: Sage Publications.

Kuutti, N. (2009). *The use of phonemic transcriptions as a teaching method and its effects on language learning outcomes* (Bachelor Thesis). Retrieved from:

https://jyx.jyu.fi/handle/123456789/20115

Kumar, M. (2013). Orthographic errors at the undergraduate level in Bihar. *Research Journal of English Language and Literature.1* (2), 185-191.

Ladefoged, P. (2001). *A course in phonetics*. Orlando: Harcourt.

Larsen-Freeman, D. and Long, M. H. (1991): An introduction to second language research. London: Longman. Retrieved from:

https://journals.sagepub.com/doi/abs/10.1177/026765839200800205?journalCode=slra

Levis, J., & Grant, L. (2003). Integrating pronunciation into ESL/EFL classrooms.

TESOL Journal. 12(2), 13–21. Retrieved from:

https://onlinelibrary.wiley.com/doi/pdf/10.1002/j.1949-3533.2003.tb00125.x

Levis, J. M. (2005). Changing contexts and shifting paradigms in pronunciation teaching. *TESOL Quarterly. 39* (3). Retrieved from:

https://www.jstor.org/stable/3588485?casa_token=mJ6jcrDPpf4AAAAA:JN9gdAqW-wgjzrADkzZN6qhVFxBnoIGltf7n_S0I0YhRhn-GAahoLHf28jQJ6KOAw7s43_y6vc0cr9z_ppetcLk_LgZEdJogGvs7Q6dYnDVLfm0QWw&seq=1#metadata_info_tab_contents

Lado, R. 1957. *Linguistics across cultures*. Ann Arbor: University of Michigan. Retrieved from:http://www.citeulike.org/group/276/article/605161

Lintunen, P. (2004). *Pronunciation and Phonemic Transcription: A study of advanced Finnish learners of English*. Turku, Finland: University of Turku.

Liu, Y. (2015). Spelling errors analysis in college English writing. *Theory and Practice in Language Studies, 5*(8), 1628-1634. Retrieved from: http://www.academypublication.com/ojs/index.php/tpls/article/view/tpls050816281634

Littlewood, W. (1984). *Foreign and second language learning: Language acquisition research and its implications for the classroom*. Cambridge University Press.https://books.google.com.pk/books?hl=en&lr=&id=lbUXHB_dRiEC&oi=fnd&pg=PA1&dq=Littlewood,+W.+(1984).+Foreign+and+second+language+learning:+Language+acquisition+research+and+its+implications+for+the+classroom.+Cambridge+University+Press.&ots=PZ4BTZrKKI&sig=auPApkbLGuCSCpU3O8ipY8WxVIc#v=onepage&q=Littlewood%2C%20W.%20(1984).%20Foreign%20and%20second%20language%20learning%3A%20Language%20acquisition%20research%20and%20its%20implications%20for%20the%20classroom.%20Cambridge%20University%20Press.&f=false

Lord, G. (2005). How can we teach foreign language pronunciation? On the effects of a Spanish phonetics course. *Hispania*, 557-567. Retrieved from:

https://www.jstor.org/stable/20063159?seq=1#metadata_info_tab_contents

Mahu, D. P. (2012). Why Is Learning English So Beneficial Nowadays? *International Journal of Communication Research, 2*(4), 374. Retrieved from:

http://www.ijcr.eu/articole/108_102_pdfsam_IJCR%204-2012%20tipo.pdf

Mahmoud, A. (2013). Spelling errors of Arab learners of EFL: A two-way analysis. *TESOL Arabia Perspectives, 20*(1), 6-12.

Marlina, R., & Giri, R. A (2014). *The pedagogy of English as an international language: Perspectives from scholars, teachers, and students* (Eds).Springer.

McKay, S. L. (2002). *Teaching English as an international language: Rethinking goals and perspectives*. NY: OUP.

Mills, G. E., & Gay, L. R. (2016). *Educational research: competencies for analysis and applications*. Upper Saddle Ridge, NJ: Pearson.

Miller, K. (2009). Delivering training in sounds of English: An ongoing action research project. *Journal of NELTA, 14*(1), 91-100.

Mompean, J. A. (2015). Phonetic notation in foreign language teaching and learning: Potential advantages and learners' views. *Research in Language, 13* (3), 292-313.

Morris-Wilson, I. (2004). *English segmental phonetics for Finns*. Oulu: Oulu University Press.

Moats, L. (1996). Phonological spelling errors in the writing of dyslexic adolescents. *Reading and Writing, 8*(1), 105-119. Retrieved from:

https://link.springer.com/article/10.1007/BF00423928

Na-ngam, S. (2005*). Common grammatical errors in foundation English I written assignments of Prince of Songkla University students with high and low English entrance examination scores* (Doctoral dissertation). Prince of Songkla University. Retrieved from:

http://kb.psu.ac.th/psukb/bitstream/2553/1495/7/271440_ch2.pdf

O'Connor, J. D. (2003). *Better English pronunciation* (2nd ed.). Cambridge: Cambridge University Press.

Odisho, E. Y. (2005). *Techniques of teaching comparative pronunciation in Arabic and English. Piscataway*. NJ: Gorgias Press LLC.

Odden, D. (2005). *Introducing phonology*. Cambridge University Press. Retrieved from:

https://books.google.com.pk/books?hl=en&lr=&id=qxg0PD_hRD8C&oi=fnd&pg=PR9&dq=Odden,+D.+(2005).+Introducing+phonology.+Cambridge+university+press.+&ots=xniwHVdMqt&sig=aumEi1zYVAbIr_cSmdoauotsU3U#v=onepage&q=Odden%2C%20D.%20(2005).%20Introducing%20phonology.%20Cambridge%20university%20press.&f=false

Pelttari, J. (2015). *Use of phonemic transcription as a teaching method in Finnish schools* (Bachelor Thesis). Retrieved from:

http://jultika.oulu.fi/files/nbnfioulu-201602031104.pdf

Pennington, M. C. (2007). *The context of phonology: In phonology in context*. Palgrave Macmillan: London. Retrieved from: https://link.springer.com/chapter/10.1057/9780230625396_1

Protopapas, A., Fakou, A., Drakopoulou, S., Skaloumbakas, C., &Mouzaki, A. (2013). What do spelling errors tell us? Classification and analysis of errors made by Greek schoolchildren with and without dyslexia. *Reading and Writing, 26*(5), 615-646.

Pullen, P., & Lloyd, J. W. (2007). A focus on phonics instruction. *Current Practice Alerts*, 14.

Ramesh, A., & Thirupathi, V. (2011). Phonetics: An indispensable component of English language. *ELT Voices India, 19*-23.

Rahman, T. (2003). Language policy, multilingualism and language vitality in Pakistan. *Trends in Linguistics Studies and Monographs, 175*(73). Retrieved from: https://books.google.com.pk/books?hl=en&lr=&id=g8DAmULPQU0C&oi=fnd&pg=PA73&dq=Rahman,+T.+(2003).+Language+policy,+multilingualism+and+language+vitality+in+Pakistan.+Trends+in+linguistics+studies+and+monographs,+175(73).&ots=nzevaeep3n&sig=q8aXNVxH-s7KMEP5yPGVxFiCoOE#v=onepage&q&f=false

Ranbom, Larissa and Cynthia. C. (2004). On the role of phonological variant frequency in spoken word recognition. *Psychonomic Bulletin & Reviews. 11*(6), 1084-1085.Retrieved from: https://link.springer.com/article/10.3758/BF03196741

Ranbom, L. J., & Connine, C. M. (2011). Silent letters are activated in spoken word recognition. *Language and Cognitive Processes, 26*(2), 236-261.

Renaldi, A., Stefani, R. P., & Gulö, I. (2016). Phonological difficulties faced by

students in learning English. *Proceedings of ISELT FBS Universitas Negeri Padang, 4*(1), 97-100. Retrieved from: http://ejournal.unp.ac.id/index.php/selt/article/view/6915

Reddy, M. S. (2016). Importance of English in today's world. *International Journal of Academic Research. 3*(4), 179-184.

Renaldi, A., Stefani, R. P., & Gulö, I. (2016). Phonological difficulties faced by Students in learning English. *Proceedings of ISELT FBS Universitas Negeri Padang, 4*(1), 97-100.

Richard, J. C. 1974. *Error analysis: perspective on second language acquisition*. London: Longman Group Ltd. Retrieved from: https://books.google.com.pk/books?hl=en&lr=&id=b00eCwAAQBAJ&oi=fnd&pg=PA172&dq=Richard,+J.+C.+1974.+Error+Analysis:+Perspective+on+Second+Language+Acquisition.+London:+Longman+Group+Ltd.&ots=sBEL5gjcJ_&sig=CDQ0ZKQ5tkrhBqSmJ2UqQn9Pwd0#v=onepage&q&f=false

Roach, P. (1991). *English phonetics and phonology: a practical course*. Cambridge: Cambridge University Press.

Roach, P. (2004). British English received pronunciation. *Journal of the International Phonetic Association, 34*(2), 239-245.

Robinson, G. C. L., Mahurin, S. L., & Justus, B. (2011). Predicting difficulties in learning phonetic transcription: phonemic awareness screening for beginning speech-language pathology students. *Contemporary Issues in Communication Science and Disorders. 38*.87–95.

Saito, K. (2007).The influence of explicit phonetic instruction on pronunciation teaching in EFL settings: The case of English vowels and Japanese learners of English. *Linguistics Journal, 3*(3), 16-40.

Swaan, A. D. (2001). *Words of the world: The global language system*. Cambridge: Polity.

Sailaja, P. (2009). *Indian english*. Edinburgh: Edinburgh University Press.

Saito, K. (2011). Examining the role of explicit phonetic instruction in native-like and comprehensible pronunciation development: An instructed SLA approach to L2 phonology. *Language Awareness, 20*(1), 45-59.

Shaywitz, S. E., & Shaywitz, B. A. (2004). Reading disability and the brain. *Educational Leadership. 61*(6). 6-11. Retrieved from: http://educationalleader.com/subtopicintro/read/ASCD/ASCD_321_1.pdf

Schachter, J., & Celce-Murcia, M. (1977). Some reservations concerning error analysis. *Tesol Quarterly, 11*(4), 441-445. Retrieved from: https://www.jstor.org/stable/3585740?casa_token=Wir-HnxxfvAAAAAA:w47gYxXfY80yrhxPlgbEtasb6StipEOv038T31VN7bDZ39u94qdU6ghTMmUzCW6xwcjYxlEesS6pdnnIHlWrr16cP7GOSJpwGmEwoPHoDYM3Y6sxAQ&seq=1#metadata_info_tab_contents

Sekaran, U. (2000). *Research methods for business; a skill business approach*. New York: John Willey & Sons. Retrieved from: https://books.google.com.pk/books?hl=en&lr=&id=Ko6bCgAAQBAJ&oi=fnd&pg=PA19&dq=Sekaran,+U.+(2000).+Research+Methods+for+Business%3B+A+skill+business+approach.+New+York:+John+Willey+%26+Sons.&ots=2B2MZ0MVpP&sig=yPPuTexRxYjj5lWo3yz90Hy0jN8#v=onepage&q&f=false

Sheikh, Q. A. (2012). An analysis of the vowel sounds of Pakistani English. *Bulletin of Education and Research. 34*(1),1-7. Retrieved from: https://s3.amazonaws.com/academia.edu.documents/33553099/1_Qaisera_Ashraf_Sheikh_V34no1_2012.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1551642350&Signature=cBiuONzld3S%2Bdfow6vDNNYfRuhM%3D&response-content-disposition=inline%3B%20filename%3DAn_Analysis_of_the_Vowel_Sounds_of_Pakis.pdf

Sigurjónsdóttir, S. (2013). Máltaka barna og meðfæddur málhæfileiki. In Þráinsson and Whelpton, M (eds.) Mál og Samfelag (pp. 107 - 127). Reykjavík: Háskólaútgáfan.

Silveira, R., Zimmer, M., & Alves, U. K. (2014). *Pronunciation instruction for brazilians: student's book.* Cambridge: Cambridge Scholars Publishing.

Soneye, T. (2008). CH digraph in English: Patterns and propositions for ESL pedagogy. *Papers in English and Linguistics,* (9), 9.

Sproat, R. (2000). *A computational theory of writing systems*. Cambridge: Cambridge University Press. Retrieved from: https://books.google.com.pk/books?hl=en&lr=&id=B8iB74qClQcC&oi=fnd&pg=

PR13&dq=Sproat,+R.+(2000).+A+computational+theory+of+writing+systems.+Cambridge:+Cambridge+University+Press.&ots=apH4oYnRlU&sig=7h-FN-XKFYH6XaKIpS3_TA8fi1A#v=onepage&q=Sproat%2C%20R.%20(2000).%20A%20computational%20theory%20of%20writing%20systems.%20Cambridge%3A%20Cambridge%20University%20Press.&f=false

Susan. C.A. (2011). *English spelling is truly difficult*. Pearson: Instructional Resources.

Stanovich, K. E. (1992). *Speculations on the causes and consequences of individual differences in early reading acquisition.* Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc. Retrieved from:

https://psycnet.apa.org/record/1992-97392-011

Stanovich, K. E. (1993). *The language code: Issues in word recognition. Reading across the life span.* New York, NY: Springer.

Szpyra-Kozłowska, J., & Stasiak, S. (2006). Pronunciation proficiency and phonetic transcription. In W. Sobkowiak i E. Waniek-Klimczak (Eds.), Dydaktyka fonetyki języka obcego II. Zeszyty Naukowe Państwowej Wyższej Szkoły Zawodowej w Płocku. Neofilologia, 8, 275-284.

Tergujeff, E. (2013). *English pronunciation teaching in Finland (Doctoral dissertation).*

Retrieved from:https://jyx.jyu.fi/bitstream/handle/123456789/41900/1/978-951-39-5322-5_vaitos03082013.pdf

ThambiJose, F. S. (2014). Orthographic errors committed by sophomore students: A linguistic analysis. *Mediterranean Journal of Social Sciences, 5*(23), 2439.

Trask, R. L. (2007). *Language and linguistics: The key concepts*. New York, NY: Routledge.

Tops, W., Callens, C., Van-Cauwenberghe, E., Adriaens, J., & Brysbaert, M. (2013). Beyond spelling: The writing skills of students with dyslexia in higher education. *Reading and Writing: An Interdisciplinary Journal*, 26(5), 705-709.

Touchie, H. (1986). Second language learning errors: Their types, causes, and treatment. *JALT journal, 8*(1), 75-80. Retrieved from:

http://jalt-publications.org/files/pdf/jalt_journal/jj-8-1.pdf#page=86

Trzeciakowska, J. (2016). Mistakes in phonemic transcriptions made by Polish EFL teacher training college students. Currents: *A Journal of Young English Philology Thought and Review*. (2), 162-183.

Umera-Okeke, N. (2008). Spelling and phonetic inconsistencies in English: A problem for learners of English as a foreign/second language. *African Research Review, 2*(1), 64-83.

Van-Berkel, A. (2005). *The role of the phonological strategy in learning to spell in English as a second language.* Toronto: Multilingual Matters Ltd.

Venezky, R.L. (1999). *The American way of spelling: The structure and origins of American English orthography*. New York: Guilford Press.

Wei, X. (2008). Implication of IL fossilization in second language acquisition. *English Language Teaching, 1*(1), 127.

Yopp, H. K. (1992). Developing phonemic awareness in young children. *The Reading Teacher, 45*(9), 696-703. Retrieved from: https://www.jstor.org/stable/20200960?casa_token=jeXB4dNG-jwAAAAA:XhA5Kis33IVZbupTijkVIbUjJ2ybQi2gBVVlfUuNbA0JMRyqiD3GhmvOG9IC27Wv9xM1NRrOwEwbNMyZvqe6ZkDbUlMzfN4V37nCQooTNPRBjJ3lCDs&seq=1#metadata_info_tab_contents

Zhang, F., & Yin, P. (2009). A Study of pronunciation problems of English learners in China. *Asian Social Science, 5*(6), 141-144.

Annexure A

Sample Phonemic Passage

| ˈbrekfəst ˈtaɪm |

ˈmɪstə | ənd ˈmɪsɪz | biː ə ˈsɪtɪŋ ət ðə ˈbrekfəst ˈteɪbl̩ | ˈmɪstə biː həz həd ɪz ˈbrekfəst ənd z ˈsməʊkɪŋ ə <cigarette> ənd ˈəʊpənɪŋ ɪz ˈmɔːnɪŋ ˈletəz waɪl ˈmɪsɪz biː z ˈdrɪŋkɪŋ hə ˈkɒfi ənd ˈriːdɪŋ ðə njuːz ˈpeɪpə |

ˈmɪstə | biː ˈrɑːðər ə lɒt əv ˈletəz fə miː ðɪs ˈmɔːnɪŋ | ˈaɪ əm əˈfreɪd ˈaɪ ʃə həv tə liːv əˈtendɪŋ tə ðəm tɪl ˈaɪ kʌm həʊm təˈnaɪt |

ˈmɪsɪz biː | ˈaɪ kən lʊk θruː ðəm ˈɑːftə ˈbrekfəst wen ju həv gɒn ənd pəˈhæps ˈaɪ kən diːl wɪð səm əv ðəm ənd ðen ju wəʊnt həv ˈsəʊ ˈmʌtʃ tə də wen ju kʌm ˈbæk ðɪs ˈiːvn̩ɪŋ |

ˈmɪstə | biː | ðət ˈwɪl bi ə ˈgreɪt help ɪf ju kən də ðət fə miː ənd ju maɪt ˈɔːlsəʊ ˈtelɪfəʊn | tə ðə ˌjuːnɪˈvɜːsɪti ˈɒfɪs ˈɑːftə ten əʊ ˈklɒk ənd ɑːsk fər ə səˈplaɪ əv lɑːdʒ braʊn ˈenvələʊps ənd ə bɒks əv waɪt ˈenvələʊps | tə bi sent tə miː baɪ | ˈmesɪndʒə | ðɪs ˌɑːftəˈnuːn | ˈaɪ ˈhædnt ˈnəʊtɪst ðət ɔːl ə | ˈfɪnɪʃt |

Annexure B

Post Test

| ðə dɒg ənd ðə ˈʃædəʊ |

| ə dɒg wəz ˈkærɪŋ ə piːs əv miːt ɪn ɪz maʊθ tu iːt ɪt ɪn piːs ət həʊm | ɒn ɪz ˈweɪ hi həd tə ˈkrɒs ə brɪdʒ əˈkrɒs ə brʊk | əz hi krɒst | hi lʊkt daʊn ənd ˈsɔː ɪz əʊn rɪˈflekʃn̩ ɪn ðə ˈwɔːtə | ˈθɪŋkɪŋ ɪt wəz əˈnʌðə dɒg wɪð əˈnʌðə piːs əv miːt | hi ˈmeɪd ʌp ɪz maɪnd tə həv ðət ˈɔːlsəʊ | ˈsəʊ hi ˈmeɪd ə snæp ət ðə ˈʃædəʊ ɪn ðə ˈwɔːtə | bət əz hi ˈəʊpənd ɪz maʊè ðə piːs əv miːt fel ˈaʊt | drɒpt ˈɪntə ðə ˈwɔːtər ənd wəz lɒst |

| ðə wʊlf ənd ðə læm |

| ə ˈhʌŋgri wʊlf wəz wʌns ˈdrɪŋkɪŋ ˈwɔːtər ət ə striːm | hi ˈkɔːt saɪt əv ə læm ˈdrɪŋkɪŋ ˈwɔːtə ˈfɑː daʊn | hi ˈwɒntɪd tu iːt ɪt ʌp | hi ræn ʌp tu ɪt ənd ˈsed ˈveri angrəli | | waɪ | ə ju ˈmeɪkɪŋ ðə ˈwɔːtə ˈmʌdi | dəʊnt ju ˈsiː ðət ˈaɪ əm ˈdrɪŋkɪŋ ɪt | <”> |

ðə pʊə ˈlɪtl̩ læm bɪˈgæn tə ˈtrembl̩ ənd ˈsed | pliːz | sɜː | ðə ˈwɔːtə z ˈfləʊɪŋ frəm ju tə miː | ˈsəʊ ˈaɪ əm nɒt ət ɔːl ˈmeɪkɪŋ ɪt ˈdɜːti fə ju | bʌt | waɪ dɪd ju kɔːl miː ˈneɪmz lɑːst ˈjiə | <”> ˈθʌndəd ðə wʊlf | ju | ə mɪˈsteɪkən | sɜː | <”> rɪˈplaɪd ðə læm | <“i> wəz nɒt ˈiːvn̩ bɔːn lɑːst ˈjiə | ðen | ɪt məst həv biːn jər ˈeldə ˈbrʌðə | ənd ju məst naʊ ˈsʌfə fər ɪz ˈfʊli | <”> ˈsəʊ ˈseɪɪŋ hi dʒʌmpt əˈpɒn ði ʌnˈfɔːtʃʊnət læm ənd ˈtɔːr ɪt ˈɪntə ˈpiːsɪz | ˈmɒrəl | ˈeni ɪkˈskjuːz ɪz gʊd ɪˈnʌf fər ən ˈiːvəlˌduːə |

| ðə ˈfɑːmər ənd ɪz fɔː sʌnz |

| wʌns ən əʊld ˈfɑːmə lɪvd ɪn ə ˈvɪlɪdʒ | hi həd fɔː sʌnz | ˈðeɪ wər ˈɔːlweɪz ˈkwɑːəlɪŋ wɪð iːtʃ ˈʌðə | ðə ˈfɑːmə ˈtraɪd hɑːd tə brɪŋ ˈjuːnɪti əˈmʌŋ ðəm bət ˈðeɪ wʊd ˈnevə ˈlɪsn̩ tu ɪz ədˈvaɪs | hi wəz ˈveri ˈwʌrɪd əˈbaʊt ðeə ˈfjuːtʃə |

wʌn deɪ | ði əʊld ˈfɑːmə fel sɪk ənd dɪˈsaɪdɪd hi ʃəd brɪŋ ˈjuːnɪti əˈmʌŋ ɪz sʌnz | hi kɔːld ɪz sʌnz ənd ˈɑːskt ðəm tə brɪŋ fjuː stɪks | ˈðeɪ ˈbrɔːt ðə stɪks | ðə ˈfɑːmər ˈɑːskt ði ˈeldɪst sʌn tə taɪ ðəm ɪn ə ˈbʌndl̩ | hi ðen ˈɑːskt ðəm tə ˈtraɪ ðeə streŋθ tə breɪk ɪt |

iːtʃ əv ðə sʌnz ˈtraɪd tə breɪk ðə ˈbʌndl̩ bət feɪld | ðen ðə ˈfɑːmər ʌnˈtaɪd ðə ˈbʌndl̩ ənd geɪv wʌn stɪk tu iːtʃ ənd ˈɑːskt ðəm tə breɪk ɪt | iːtʃ əv ðəm wəz ˈeɪbl̩ tə də ɪt ˈiːzəli |

ðə ˈfɑːmə ˈsed | <“now> ju ˌʌndəˈstænd | ɪf ju ə juˈnaɪtɪd ˈnəʊbədi kən ˈget ˈbetər əv ju | bət ju kiːp ˈkwɑːəlɪŋ | ju wl̩ bi ˈbrəʊkən baɪ ˈeniwʌn | <”> |

ˈmɒrəl | ˈjuːnɪti z streŋθ |

| ðə wʊlf | ənd ðə kreɪn |

| wʌns ə wʊlf kɪld ə læm ənd ˈstɑːtɪd ˈiːtɪŋ ɪt |

sʌdn̩li ə piːs əv bəʊn stʌk ɪn ɪts θrəʊt | ɪt kraɪd ˈaʊt əv peɪn ənd kɔːld fə help | ðə keɪm ə kreɪn | ðə wʊlf lʊəd ðə kreɪn ðət ɪt wl̩ gɪv lɒt əv rɪˈwɔːdz |

ðə ˈgriːdi kreɪn ɪˈmiːdɪətli əˈgriːd ənd rɪˈmuːvd ðə piːs əv bəʊn wɪð ɪts ˈlɒŋ nəʊz | ðə wʊlf wəz rɪˈliːvd əv ɪts peɪn | ðen ðə kreɪn ˈɑːskt fə ðə rɪˈwɔːdz |

ðə wʊlf lɑːft ət ðə kreɪn ənd ˈsed | ˈaɪ həv ɔːlˈredi rɪˈwɔːdɪd ju wɪðˈaʊt ˈbaɪtɪŋ jə hed | rʌn əˈweɪ frəm hɪə | els ˈaɪ wl̩ kɪl ju | ðə kreɪn wəz ˈveri ˈmʌtʃ ˌdɪsəˈpoɪntɪd ənd ræn ˈweɪ tə seɪv ɪts laɪf |

ˈmɒrəl | ju ʃəd help ˈəʊnli ðəʊz huː dɪˈzɜːv fər ɪt |

Annexure C

List of Spelling Errors

Table A1

Omission due to Double Letters

Phonemic Transcription	Correct Spellings	Spelling Errors
əˈtendɪŋ |	Attending	*Atending*
ˈʃɪlɪŋ |	Shilling	*Shiling*
ˈbetə |	Better	*Beter*
ˈtrævəlɪŋ	Travelling	*Traveling*
mɪs |	Miss	*Mis*
ˈtræfɪk |	Traffic	*Trafic*
ˈswɪmɪŋ |	Swimming	*Swimming*
ˈrɒbəri |	Robbery	*Robery*
stɒpt |	Stopped	*Stoped*
spel |	Spell	*Spel*
wel |	Well	*Wel*
les |	Less	*Les*
keəfəli |	Carefully	*Carefuly*
pʌf |	Puff	*Puf*
fʌs |	Fuss	*Fus*
əˈkrɒs |	Across	*Acros*
ˈsɪtɪŋ |	Sitting	*Siting*
ˈlɪtl̩	Little	*Little*
tɪl |	Till	*Til*
tel |	Tell	*Tel*
dɪfɪkəlti |	Difficulty	*Dificulty*
rɪəli |	Really	*Realy*

Table B2

Silent Letter's Omission

Phonemic Transcription	Correct Spellings	Spelling Errors/Mistakes
| ˈfɔːkɑːst |	Forecast	*Forcast*
məˈnɪpjʊleɪt |	Manipulate	*Maniplate*
əˈkweɪntɪd |	Acquainted	*Aquanted*
ˌdʒenəˈreɪʃn̩ |	Generation	*Genration*
ɪkˈspleɪnd |	Explained	*Explaned*
θɪk |	Thick	*Thik*
seɪfti |	Safety	*Safty*
helθ |	Health	*Helth*
ˈmɪnɪts |	Minutes	*Minuts*
ɒpəreɪtə |	Operator	*Oprator*
hæv |	Have	*Hav*
ʃʊd |	Should	*Shoud*

rɪˈlɪdʒəs |	Religious	*Religios*
ˌɪmɔːˈtælɪti |	Immortality	*Immotality*
streɪt |	Straight	*Strait*
ˈhændl̩ |	Handle	*Handl*
ˈtɔːtəs |	Tortoise	*Tortois*
rɔːd |	Roared	*Roard*
ˈweðə |	Weather	*Wether*
tɜːnd |	Turned	*Turnd*
ɪnˈsted |	Instead	*Instead*
dʌn	Done	*Don*
ˈkɒliːgz |	Colleagues	*Colleages*

Table C3

Double Letter Insertion

Phonemic Transcription	Correct Spellings	Spelling Errors
| ˈvɪzɪtɪŋ |	Visiting	*Visitting*
ˈleɪtə |	Later	*Latter*
ˈdʌbl̩ |	Double	*Doubble*
prɪˈfɜː |	Prefer	*Preffer*
əˈfreɪd |	Afraid	*Afraid*
əʊpənɪŋ |	Opening	*Oppening*

Table D4

Single letter substitution

Phonemic Transcription	Correct Spellings	Spelling Errors
ˈnəʊtɪsɪz |	Notices	*Noticis*
ləʊ |	Low	*Lou*
diːl |	Deal	*Deel*
wɔːm |	Warm	*Worm*
lɔː |	Law	*Low*
lɔːz |	Laws	*Lows*
sensɪz |	Senses	*Sensis*
edɪtə |	Editor	*Editer*
ˌɪntrəˈdjuːst |	Introduced	*Intraduced*
fɔː |	For	*Far*
ʃæl |	Shall	*Shell*
wʌn |	Won	*Wun*
ˈhʌndrəd |	Hundred	*Handred*
ju |	You	*Yoo*
dʒɪm |	Gym	*Gem*
dʒɪm |	Gym	*Gim*
hʌt	Hut	*Hat*
pəˈhæps |	Perhaps	*Parhaps*
əˈveɪl |	Avail	*Awail*
ˈmesɪndʒə |	Messenger	*Messanger*
ˈwʌndəfəl |	Wonderful	*Wanderful*
meɪn |	Main	*Mein*

ˈreɪlweɪ |	Railway	*Reilway*
ˈleɪtə |	Later	*Leter*
ˈeni |	Any	*Eny*
prəˈgres |	Progress	*Pragress*
|dɪˈmɑːndz	Demands	*Dimands*
prəˈgres |	Progress	*Pragress*
njuː |	New	*Now*
stæmp |	Stamp	*Stemp*

Table E5

Multiple letter substitution

Phonemic Transcription	Correct Spellings	Spelling Errors
| kɔːl |	Call	*Cool*
ˈfɜːst |	First	*Fast*
ɪgˈzɑːmpl̩ |	Example	*Iksample*
ˈnəʊtɪsɪz |	Notices	*Noticiz*
ˈpraɪsɪz |	Prices	*Priziz*
dɪˈmɑːndz |	Demands	*Dimandz*
səˈfɪʃnt |	Sufficient	*Suffishent*
əˈpriːʃieɪt |	Appreciate	*Appritiate*
tɜːnd |	Turned	
nəʊ |	No	*Now*
wʌn |	One	*Von*
siːt |	Seat	*Sit*
bɪˈliːf |	Belief	*Bileaf*
dɪˈseptɪv |	Deceptive	*Diseptive*
rɪˈsiːvə |	Receiver	*Resiver*
meɪd |	Made	*Maid*
ˈleɪmən |	Layman	*Leman*
| deɪz |	Days	*Dais*
kwaɪt	Quite	*Kawait*
ˈtæksi |	Taxi	*Teksi*
ɪkˈspekt |	Expect	*Accept*
deɪz |	Days	*These*
veɪn	Vain	*Wane*
fɔːs |	Force	*Fors*
muːn |	Moon	*Mun*
ˈjuːzɪŋ |	Using	*Juzing*

Annexure D

Focused Group Discussion

Q.1. Do these Diploma students have any idea about the sounds of English language at school or college level?

Q.2. What do you think about the relationship between sounds and spellings of English language and how does it affect the students at Diploma level?

Q.3 How many times did you ask Diploma students to do phonemic transcription? Share your observations.

Q.4 What is your opinion about the spelling status of Diploma students?

Q.5 Do you think continuous conversion of phonemic transcription into normal spellings has an impact on the spelling ability of language learners?

Q.6 While learning the course of Phonetics and Phonology which sounds create more confusion for foreign language learners and why?

Q.7 How often did you use the activity of converting phonemic transcription into orthography and which sounds are more problematic in this activity?

Q.8 Do you think that the idea of providing sound awareness as a solo skill is helpful in improving the sounds and spelling development of Diploma students?

Annexure E

Focused Group Discussion Transcript

Members for Discussion: Six faculty members of Functional courses department NUML, Islamabad.

A, B, C, D, E, F

Setting: Discussion conducted in staff room of Functional courses (FC) department NUML, Islamabad. The discussion was conducted at 4:00 PM on Thursday afternoon. First of all researcher introduced the topic in front of six members then start asking the questions.

(Start of Discussion)

Q1:Do these Diploma students have any idea about the sounds of English language at school or college level?

A: If we discuss it as a subject, they don't have any idea about Phonetics and most of the time it appears as a new and most difficult subject as compared to other subjects.

B: No these language learners have no background knowledge about phonetics because in language courses students are coming from different areas of Pakistan and the subject of phonetics and phonology is not added as a subject at school level in Pakistan. Here in FC department students are coming from different provinces of Pakistan and some of them belongs to rural areas, where phonetics is not a part of education. They just know about alphabets and even if we ask about vowels and consonant, they interpret it according to vowel letter not according to sounds.

C: Yes I agree with mam, students enrolled in language courses have no concept about sounds and due to this reason it is also a difficult subject for teachers to teach as well because all concepts of Phonetics starts from the very basic level.

D: They do not have generally because most of them are coming from Urdu medium background and even if some of them are coming from English medium background, it's not generally the trend in Pakistan to teach alphabets according to the sounds. They take alphabets as individual alphabets, but now trend is changing. Here at this level where we are teaching diploma students, student do not have any idea about

sounds of English language.

E: I agree with my colleagues. I observe same thing in my teaching experience and for this it is a trick subject in teaching.

F: Same idea I observe in my classes, the subject of Phonetics is a totally new subject for language learners in Pakistan as this element is missing from school or college level teaching.

Q2: **What do you think about the relationship between sounds and spellings of English language and how does it affect the students at Diploma level?**

A: I think the relationship is quite arbitrary, in the sense that the spellings do not match the sounds and most of the times what happens is that some of the letters which are getting the spellings are silent, which is quite problematic for the students, because they do not expect them to be silent. So the relationship is arbitrary and this causes a great difficulty for the student to pronounce the word because they take each or individual word as per their spellings.

B: Yes relationship between sounds and letters are not in accordance to each other which creates difficulty for language students and some time they ask for the reason that why spellings and pronunciations are different.

C: yes… and in some cases they feel uncomfortable because it is difficult to make their concept clear. But with the passage of time when they start learning sounds, this difference is less problematic for them and they start enjoying this subject.

D: Again I would agree to some extent with my colleague but I do think that to actually know the phonetic sounds is a big help in early stages of reading and I think that over a period of time if students are taught correctly they will recognize and they will know that and ‘e’ sometimes is silent and specially a ‘k’ in the middle of the word can be silent. But all of these need to be taught at an early stage.

E: And I believe that this arbitrary nature of English is the only reason that this language is difficult in learning. This problem can be cater properly if proper training is provided at beginner level.

F: Even at this level few good students are eager to learn number of rules which could be helpful in developing sound letter correspondence.

Q3: How many times did you ask Diploma students to do phonemic transcription? Share your observations.

A: I believe that for these students phonemic transcription is a next step. First I provide concepts about sounds like how to write and articulate these sounds and it

takes time. After some time I think in the middle of the semester this activity properly starts and it continues throughout the semester and this is the point where students start enjoying this subject.

B: Yes I agree with you it starts after two months of a semester. I did not count the number but off and on this practice of phonemic transcription is the part of the class, and students like this practical kind of learning.

C: In my case I added it at the end of semester and for this I give them a kind of project related to phonemic transcription. First time students do not like it but later on they have a taste of doing phonemic transcription but obviously all of them do not enjoy this activity.

D: I start phonemic transcription with the sound awareness but it has different level. First it is there at word level then sentence level and at the end it reaches to the paragraph level and as far as student's responses are concerned I observed mix responses. Few likes it but few find it quite difficult and they try to avoid it.

E: As a teacher of phonetics and phonology this has been done several times in the class room for practice purposes but we do this after teaching sounds in detail both the monophthongs and diphthongs, then practice is done a number of times and this is an observation that once the sounds are taught, the students carefully try to take interest and they do perform well in the phonemic transcription.

F: As of yet I have not fully started teaching the phonemic sounds however occasionally if there is a new word or new vocabulary, then I introduce the sounds and I am finding it does help the students with their pronunciation as long as they are aware of the basic essential changes regarding silent letters.

Q4 What is your opinion about the spelling status of Diploma students?

A: Most of the time students at Diploma level are good in there spellings. As it is an advance level and most of the language learners have better qualification. That's why they have better spellings and it is something better like we need to put less effort on their spellings.

B: Yes there spellings are better as compared to foundation and certificate level and even as a teacher I like to teach at this level because better students are sitting at diploma level.

C: yes at Diploma level spelling status is much better than other basic level. But like other levels, Diploma classes are mix ability classes that's why few week students are

also there but majority students have better spellings.

D: I think that it is good. If you ask me about the diploma level students, yes they are good at their spellings. They do carefully notice what they are writing; they do revise before the submission. So once we get the final draft, it is a good one and a polished one.

E: I have been very impressed with the level of spelling and I do agree that the spellings are very good.

F: I agree with all of you but like other classes some week students are also there. As a whole we can say spelling status is much better.

Q5: Do you think continuous conversion of phonemic transcription into normal spellings has an impact on the spelling ability of language learners?

A: Yes I feel so that it is actually a two way job. Continuous conversion does help to retain the spelling in a better way. At the same time it helps them to nourish their pronunciation of the various words.

B: I can see correlation between doing these two together. I think it reinforces the spelling and I think it helps the student comprehend the word better and correctly and I think it also helps the student retain the word over a longer period of time.

C: This activity is quite practical in nature and whenever I did it in class students really enjoy. But its impact on spellings vary from person to person. Students who are good in transcription they do some complains like they get confuse between sounds and letters due to continuous practice. Otherwise those who are just learning it for the sake of learning, they do not face any problem.

D: I agree with mam because I think it is a two way job. We practice this activity for the better pronunciation of language learners and as far as impact of phonemic transcription on spellings are concerned it require time. If students are continuously involved in it they may face this problem.

E: Same here because all students do not show significant impact. Mostly good students have this issue of spellings. Otherwise for pronunciation students give us good feedback.

F: As far as my observation is concerned course content is quite lengthy and we have less time for this activity but when we do students have some problem in identification of sounds and many spelling errors which they commit are related to vowel letters because vowel sounds are difficult to identify. Some time we also make them more conscious in sounds and as a result they make certain spelling errors.

Q6: While learning the course of Phonetics and Phonology which sounds create more confusion for foreign language learners and why?

A: Sounds? Ok I feel that for my Pakistani students the most confusing sounds are the diphthong / əʊ/ and the monophthongs / ɒ/ and / ɔ:/ since they cannot distinguish between where to put what. This may be the similarity of sounds in vowels because consonants are less problematic in this regard.

B: I agree, I would also like to add that the sound /r/ and the / ð/ sound which I think students also find very difficult. One thing I have noticed that in some cases students are not fully pronouncing the end of the words.

C: Because we are having diversity of groups in our classrooms, some of the students that particularly belong to Gilgit, Baltistan and northern areas of Pakistan, they have quite great difficulty in pronouncing the / eɪ/diphthong and / ɑ: / monophthong. They would sometime say 'caak' and not 'cake' so these types of transcriptions create a problem, otherwise after several lessons, learning and practice, they produce good results.

D: I agree with my colleague and I think in some cases again had phonemics being taught at an earlier stage. I think that it's habits that we are trying to break now. I think the students are aware of their mistakes, they are aware of their pronunciation but it's a habit now that we are trying to break. Their first language also one of the cause that they cannot pronounce certain sounds properly.

E: According to my class room observation vowel sounds are difficult and especially/ ʌ/ and /ə/ are difficult one, not only in articulation but also in identification because there is a slight difference in the production of these two sounds.

F: I think my colleagues have given a better opinion and I agree with them because vowel and diphthongs are two major problematic areas in the production of sounds.

Q7: How often did you use the activity of converting phonemic transcription into orthography and which sounds are more problematic in this activity?

A: If I have to tell the number I would not be able to tell the number exactly because I have been teaching it this semester throughout so this activity has been done a number of times. Commonly vowels are more problematic ones.

B: I know the previous colleagues have done this a number of times. Again I can't

comment on how many times but it continues throughout semester in one way or other. As far as problematic sounds are concerned few consonant sounds are also difficult which have similar form like letter. e.g /k/ ,/z/ and /s/.

C: I agree with my colleagues that mentioning how many times is quite difficult but it is part of Phonetics course and this is the reason it continue throughout the session and I am in a habit of giving one final assignment based on this activity.

D: I am in a habit of doing it in last two months of semester but telling the exact number is not possible here. Commonly vowel sounds create confusion in the exact identification of sounds because all are pronounced in the same way.

E: I agree with my colleagues that this activity continues throughout the session and most of the time /ə/ and /æ/ sounds are difficult in articulation and same problem appears in phonemic transcription, learners cannot identify it properly.

F: My response is little bit different because I have divided my class timings. First three days I provide the theoretical knowledge and then in last two days I involve them in phonemic transcription and this activity continues throughout the session. As far as sounds are concerned vowel sounds are more difficult as compared to consonant and diphthongs.

Q8: Do you think that the idea of providing sound awareness as a solo skill is helpful in improving the sounds and spelling development of Diploma students?

A: Yes I think it really helps. It's a correlation activity that helps in the learning and comprehension of the pronunciation and spellings of the words.

B: Yes I totally agree. It's like writing but you can't use a pen. If you can't use a pen you can't write. If you don't know the sounds how are you going to spell and speak accurately?

C: I disagree with your point like the process of telling sounds, place of articulation and manner of articulation is not enough. We need to provide practical knowledge to our students and it is only possible if we combine it with other skill like reading and writing.

D: And in our scenario this is the main reason student do not take that much interest in this subject because we have restrict them only in speaking and pronunciation. If we add it with other skills then they will learn what the real benefit in it.

E: My opinion is in middle because the way we are teaching still a lot of

improvement is there in pronunciation. But if we add it with other skills, it will be more refined.

F: Same here, in my point of view learning is there if we teach it as single subject or integrate it with others but the difference is in theoretical knowledge and practical one. If we just teach sound, this is theory but if we add it with other skills then it is practical in nature in which we face less confusion between sounds and letters.