Phonetics and Phonology: A Grey Area of Research in Pakistan

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Abstract

The present study aims to underscore those issues that render phonetics and phonology a less explored area of research in Pakistan. Traditionally, articulatory and auditory phonetics are focused for general understanding of English speech sounds in Pakistan, but acoustic phonetics that deals with understanding of pronunciation required for effective communication, is almost abandoned. This study is qualitative in nature and is based on empirical evidences from primary and secondary source research articles as well as personal observations. It has been found that experimental phonetics and phonology is generally not focused due to the paucity of subject specialists, unavailability of the trained staff, inadequacy of teaching techniques and methodologies, insufficiency of in-service courses, dearth of technical facilities, lack of

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interest of English teachers, and the traditional examination system in Pakistan that does not demand testing of pronunciation and speaking proficiency of English students. In this way, the advance study on phonetics and phonology is neglected almost on all levels in educational institutions. All these factors indicate that the importance of experimental phonetics and phonology is not yet well understood, hence, it is still demarcated a grey area of research in Pakistan. Moreover, a few researches are available on experimental phonetics and phonology for acoustic analysis of speech sounds. The study will be beneficial for English teachers and students as well as the educationists to critically understand the importance of phonetics and phonology in Pakistan. To get desirable results, the education stakeholders are supposed to equip English teachers and students with all required resources. Extensive training of the teachers and adoption of modern teaching techniques and methodologies along with well-defined syllabus can play a significant role. This study is different from the existing ones as it focuses the general pronunciation and communication issues of Pakistani English learners due to the lack of knowledge and interest in English phonetics and phonology.

Keywords: Experimental Phonetic and Phonology, Pronunciation, Communication, Training

1. Introduction

The learning of a second language is influenced by the mother tongue of a learner. In the language learning process, the mother tongue accompanies certain individualities of sound that modify the segmental and suprasegmental features of the second language. We can say that the pronunciation of a native language has a powerful impact on the pronunciation of the second language due to the differences in phonetics and phonological rules in both the languages. The speech habits are also determined by the environment since the mother tongue is acquired in a natural environment, while the second language is learned in an artificial one. This is the reason why the speech habits of a mother tongue are superimposed over the

speech habits of a second language in a language learning process (Muhammad & Qureshi, 2012).

Pronunciation is a core ingredient of a language learning process. All efforts become meaningless if the sounds are not uttered in a right combination and with a proper flow of speech. Adoption of correct pronunciation of a second language eases the process of communication and has now become more significant due to globalization. Therefore, phonetics and phonology has now emerged as an important sphere of interest for applied linguists. When we talk about learning a language other than one's native language, the English language is the foremost choice of the learners due to its worldwide dominance among other languages. Correct pronunciation is directly related to the competence of a speaker, therefore, the English language learners have been observed to strive for a native-like proficiency to create a positive impression about their language competence (Hall & Hastings, 2017; Khan, 2020; Martyanov, 2018).

Pronunciation is a phenomenon that can be correlated with the knowledge of phonetics and phonology. Phonetics deals with physical aspects or acoustic properties of speech sounds while phonology is concerned with the system of speech sounds in a particular language. The outcomes show that the pronunciation ability of the learners has a very close relationship with phonological knowledge of the language. So, the understanding of phonological knowledge of the English language has huge impact on the pronunciation of English language learners (Agung et al., 2021; Nurman, 2021).

Cultural context is the most notable factor that determines the process of evolution of a language in a country. Pakistan is a multicultural as well as a multilingual country, so therefore the English language in Pakistan has long been evolved under diverse cultures. Now, Pakistani English (PE) has established its distinctive varieties with culture-specific phonological traits such as Punjabi English, Sindhi English, Balochi English, and Pashto

English. Urdu being the national language of Pakistan has a very strong impact on the English language pronunciation of the people. Consequently, the sound system of English has been restructured in PE. In PE, the pronunciation of similarly articulated sounds(both in Urdu and English) is nearly the same as in Received Pronunciation (RP), but for the dissimilar sounds, there is a subconscious substitution of Urdu equivalent sounds constructing a non-native variety of the language and giving a new accent to PE. Thus, a number of prominent differences in segmental and suprasgemental features have been observed when the pronunciation of PE is compared to RP (Ali et al., 2020).

Though learning of correct English pronunciation is a complex phenomenon, the knowledge of pronunciation plays a vital role in advancing the communicative competence of a learner. There are two main factors that affect the pronunciation of a language learner; the inner factors such as type of learner, age, aptitude, goals, etc., and the outer factors such as first language, learning environment, motivation, teaching methodologies, etc. (Agung et al., 2021; Khan, 2020).

Traditionally, phonetics talks about awareness of speech sounds produced by vocal organs and studies the perceptual response, but now, the scientific investigation of speech has come on stream. Experimental phonetics is a modern term that concerns investigation of speech by means of modern instruments. It aims to develop hypotheses based on quantitative analyses and is primarily recognized by its methodology instead of its subject matter. For instance, when a recorded speech in a computer is used to study its physical properties in an acoustic analysis, the investigation would be experimental. Simply the tape recordings for their repeated listening would not be described as experimental. There are four common reasons why experimental phonetics is of paramount importance: (a) Gaining full knowledge of abstract properties of a language is not possible without consideration of more concrete (physical) properties of speech. (b) Without application of instruments, many key aspects of

speaking and hearing become inaccessible which are required for speech analysis. (c) It can expand range of contexts from different theoretical perspectives for in-depth analysis of speech. (d) It is instrumental in improving the pronunciation of the learners through audiovisual aids. It has several other practical applications in different fields such as medical, telecommunication, etc.(Hayward, 2014; Martyanov, 2018). The aim of present study is to highlight those issues that make phonetics and phonology a grey area of research in Pakistan.

2. Materials and Methods

This present study is qualitative in nature. The researchers sought help from empirical evidences from primary and secondary source research articles as well as personal observations to reinforce their arguments.

3. Results

Generally, traditional phonetics is focused in Pakistan that deals with articulatory and auditory phonetics for general understanding of English speech sounds but learning of proper pronunciation for effective communication is almost ignored. Experimental phonetics for acoustic analysis of speech sounds is generally not in practice due to the lack of phonetics laboratories in educational institutions for further research. In fact, the process of English language learning in Pakistan occurs between non-native instructors and non-native learners, and is mainly based upon memory driven examination system. The examination system does not demand testing of communication skills of the students, therefore, the English teachers ignore pronunciation and spoken skills altogether, and focus only on formally demanded stuff such as translation, vocabulary, and grammar. In this way, the study of phonetics and phonology is disregarded on all levels in educational institutions. For proper coaching of English phonetics and phonology in Pakistan, there is unavailability of trained staff, inadequacy of teaching techniques and methodologies, insufficiency of in-service courses, dearth of resources, and paucity of subject specialists. All these factors adversely affect the

learning of the English language learners and lead them to poor pronunciation and communication skills. (Imran & Ain, 2019).

The use of modern technology is extremely imperative in non-native countries for real understanding of phonetics and phonology. Unfortunately, in Pakistan, the research on acoustic phonetics has not been prioritized and a few researches are available in this area. There is a need to establish laboratories in educational premises for experimentation using different techniques and methodologies (Abbasi et al., 2018). There are many computer based softwares that are currently in use for speech analysis, i.e., PRAAT is a common software to analyze speech production and perception. Similarly, survey software is used to run simple experiments. The Perl programming language is also a useful tool to perform automatic repetitive tasks. Lexical databases are increasingly helpful to control frequency, phonotactics, neighborhood, etc. There are a lot more research techniques such as static palatography, nasal and oral air flow measurement, electroglottography, speech synthesis, learning simulations, etc., that are helpful to logically understand the phenomena of phonetics and phonology (Hayward, 2014; Martyanov, 2018).

Many studies indicate that the Pakistani learners require extensive training particularly in understanding and recognizing English speech sounds as they face serious issues in learning pronunciation. There is a dire need to understand and practice the knowledge of phonetics and phonology to achieve native-like accent (Imran & Ain, 2019; Khan, 2020). Communication with correct pronunciation and native-like accent makes the learners more confident, relaxed, and professionally successful around the globe. The focal person in this regard is the teacher who could resolve the pronunciation related issues of the learners in the classroom. Usually, the learners are motivated to learn but there is requisite to provide them all required resources in a suitable environment (Chunata et al., 2018; Martyanov, 2018; Toçi, 2020).

Urdu speakers in Pakistan have multiple pronunciations for the same English word when their speech is assessed thorough acoustic analysis. Most of the pronunciations are deemed mispronunciations rather than alternative pronunciations. It happens due to the cultural and language-dependent variations. Phonologically, these variations are the product of variations in three fundamental elements; segment alternation, ellipsis, and epenthesis, and these elements cause re-syllabification of English words. Alongside, the variations in stress shifting phenomenon in Urdu speakers also provide the grounds for mispronunciation. The alternative pronunciation of English is equally intelligible all over Pakistan yet is different from native British pronunciation. To overcome the issues regarding mispronunciation, acoustic phonetics plays an instrumental role in understanding the communication flaws and then rectifying them (Farooq & Mahmood, 2021; Holliman, 2016). For Pakistani speakers, Urdu orthography is also another essential basis for intricacy in adopting proper English pronunciation since Urdu is known as a syllable-timed language while English is recognized as a stress-timed language. Thus, Urdu with an entirely different sounds, spellings, and syllabification system greatly impacts the learning of English phonetics and phonology and ultimately the communication of the learners (Abbasi et al., 2017; Muhammad & Qureshi, 2012).

Farooq and Hussain (2018) carried out a quantitative research to explore the impact of six indigenous languages; Urdu, Punjabi, Pashto, Sindhi, Balochi, and Saraiki on Urdu which is the official language of Pakistan as well as a lingua franca, using PRAAT for acoustic analysis of corner vowels extracted from utterances. The findings of the spectrogram of phonological segments using formant frequencies indicated notable vocalic variations in the characteristics of corner vowels. Different phonetic contexts of the indigenous languages also impact the Urdu pronunciation of Pakistanis. The vocalic variations in Urdu pronunciation from a diverse cultural society in Pakistan ultimately lead the English pronunciation of the

learners to mispronunciation. To encounter similar problems, a number of factors are researchable but lack of resources on educational level encumbers the innovative work in the field of experimental phonetics and phonology.

According to Farooq and Mahmood (2021), the tendency of non-native speaker to restructure the native English sounds is to suit their purpose is one of the major phonological aspects. Generally vowels exhibit more restructuring compared to consonants in non-native communications. Usually Pakistanis subconsciously alternate short vowel sounds in different words as in ‘purse’, the /ɜ/ is substituted by / ʌ/. They do not focus on the distinction between short and long vowels such as in ’genetic’, the /e/ is replaced by /æ/. They frequently substitute central vowels either for front or back vowels like in ‘vehicle’, the /ə/ is superseded by /i/. They also tend to shorten diphthongs to monophthong as in ‘gate’, the diphthong /eɪ/ is pronounced as a monophthong /e: /. Syed (2011) highlights that Pakistani English learners are good at discerning allophonic variations but they are unable to employ aspirated and unaspirated variants in their communications under the influence of their different cultural contexts.

4. Discussion

Experimental phonetics and phonology was actually the outcome of human interest in understanding the physical characteristics of speech sound and ultimately the experimental methodology made the complex nature of sound disentangled and easy to understand. Experimental phonetics is generally applied to support or disapprove different theories and hypotheses, and in this way, it opens multiple gates of research for the researchers. Initially, it was developed to study neurophysiological mechanisms, but later on, it emerged as an independent field linguistics which further attracted applied linguists for more sophisticated research. Experimental phonetics (acoustic phonetics) illuminates the dynamics of speech in communication among the speakers of heterogeneous languages and also contributes to

advance research in analyzing speech phenomenon. Modern instrumental research reveals the complex nature of phonetics and elaborates division of semantic parts through physical parameters. In acoustic analysis, the formant traits of speech not only provide information about linguistic features (pure sound quality) but also give certain paralinguistic (emotional component) and extralinguistic (non-content aspects) nuances by means of the spectral shifts into high or low frequency regions (Martyanov, 2018).

Experimental phonetics is a basic approach to understand a speech activity clearly and resolve communication related issues. The teaching process of phonetics and phonology involves several modern techniques. Phonetic transcription functions under established rules while phonology along with its suprasgemental or prosodic features is still a variable. The technological progression in the field of speech analysis has now resulted in utilization of sophisticated procedures for advanced research. There are several computer based programs available for analysis of speech signals with its various components. For acoustic analysis, PRAAT (developed by Dutch phoneticians), Wavesurfer (developed in Sweden), SIL (Summer Institute of Linguistics) Speech Analyzer, and SFS (Speech Filing System by University of London) are few instances of online available softwares. Similar computer technologies are instrumental in helping researchers to perform in-depth experimentation on speech sounds for comparative analysis of native and non-native speakers of various languages belonging to diverse cultures. In modern softwares, several techniques such as oscillogram, intonograms, orthophony, etc., are employed in the process of speech analysis to understand the prosodic features of the speech (Hayes, 2011; Martyanov, 2018).

There are approximately six thousand languages spoken around the world and English is deemed the most privileged language as well as the most studied language among them. Every language has its own sound and orthographic system that differs from others. The instrumental techniques can also be applied on less privileged languages to understand them

scientifically (Abbasi et al., 2018; Komariah, 2018) . Holliman (2016) believes that the best early reading skills are foreseeable when more holistic measures of suprasegmental phonology are introduced in best combination. In Pakistani context, at early stages of the English language learning, the phonological practices are usually ignored.

5. Conclusions

Phonetics and phonology are interrelated areas of linguistics and are based on human speech system. Linguistics provides a scientific basis to understand a language and a scientific foundation always involves experimentation. Experimental phonetics and phonology is a modern field of applied linguistics for acoustic analysis of speech sounds (Abbasi et al., 2018). Keeping in view the study outcomes of the researchers discussed in the above sections, the lack of interest of Pakistani learners in phonetics and phonology is identified due to the following major drawbacks in educational system.

i. Paucity of subject specialists as well as unavailability of the trained staff
ii. Inadequacy of teaching techniques and methodologies
iii. Dearth of facilities i.e. phonetics laboratory
iv. Insufficiency of in-service courses of phonetics and phonology
v. Lack of interest of English teachers in experimental phonetics and phonology
vi. Traditional examination system does not demand speaking proficiency of English students to be tested
vii. English teachers focus only on vocabulary, translation, and grammar, while pronunciation and communication skills are generally abandoned
viii. English speaking environment is usually not provided in English classes
ix. Native-like pronunciation is somehow not encouraged
x. A few researches on experimental phonetics and phonology are available with insufficient knowledge

Despite the need of the day, applied linguistics is treated as an optional subject and the importance of experimental phonetics and phonology as an independent subject is not yet well understood. Hence, the above mentioned factors unfold the reasons why phonetics and phonology is deemed a grey area of research in Pakistan. There is an immense need to equip English teachers and students with all required resources to upgrade educational and research system. For this purpose, a well-defined syllabus of phonetics and phonology, extensive training of the teachers, and adoption of adequate teaching techniques and methodologies, all in a right combination can play a significant role to achieve desirable goals.

Conflict of Interest: The corresponding author, on behalf of all authors, confirms that there are no conflicts of interest to disclose.

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