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Platform & Workflow by: [Open Journal Systems](#)<https://doi.org/10.5281/zenodo.17419122>**Effects of Age on the Pronunciation Accuracy of English as a Second Language among the learners in the Public Sector institutions of KPK****Zahid Sardar**

BS English Scholar, Department of English, Kohat University of Science and technology, KUST Kohat Pakistan

Email: [zahidsardar629@gmail.com](mailto:zahidsardar629@gmail.com)**Abstract**

*This paper examines how age affects accuracy in the pronunciation of English by students studying in state-sponsored colleges of Khyber Pakhtunkhwa (KPK), Pakistan. The pronunciation is a very important yet difficult part of the second language acquisition, which is influenced by a complex interaction of biological, psychological and sociolinguistic factors. The study was carried out through the application of a mixed-methods research design, which was organized using 120 participants divided into three age groups secondary school students, undergraduate students, and adult students who took part in professional language improvement courses. A set of three instruments was used to collect the data controlled pronunciation tests, auditory discrimination tasks and structured questionnaires. The results indicate that there is a statistically significant correlation between the age of learning and the phonological attainment. Older learners showed a significant deficit in the acquisition of native-like speech sound and prosodic aspects, and slower progress and greater tenacity of L1 (Pashto) phonological interference were observed in younger learners. Nevertheless, the research also outlines the important mediating factors, such as the motivation of the learners, the frequency of exposure to L2, and the quality of the classroom instruction, which can be used to alleviate age-related limitations. The study offers strong empirical evidence in the Critical Period Hypothesis (CPH) in the distinct Pakistani socio-educational context. The conclusions highlight the importance of age-based pedagogical approach and curriculum development in order to improve learning about English pronunciation in multilingual, resource-deficient settings such as KPK.*

**Keywords:** Age Factor, Pronunciation Accuracy, Second Language Acquisition (SLA), Critical Period Hypothesis (CPH), Phonological Attainment, L1 Interference (or Mother Tongue Influence), Public Sector Education, Khyber, Pakhtunkhwa (KPK), Pakistani ESL Context, Language Pedagogy.

**1. Introduction**

Linguistic and educational research has long been interested in developing an accurate pronunciation in the second language (L2). Although vocabulary and grammar are easily learnt at any age, the final element to

master is often pronunciation, which can be extremely difficult to master completely. In Pakistan, English is a second and official language, which is used as a medium of instruction and communication in the educational and professional fields. But the degree of pronunciation accuracy is much different among learners, especially between junior students and adult learners.

English language proficiency in the province of Khyber Pakhtunkhwa (KPK) is highly determined by the institutions in the public sectors. In these institutions, however, they do not usually teach pronunciation, or even very superficially, but they teach more grammar and writing. This has not focused much on the influence of age on the attainment of pronunciation. This relationship is vital in understanding the way pronunciation pedagogy can be enhanced and the manner in which language teaching can be aligned with the cognitive and developmental facts.

The current study, thus, seeks to evaluate the influence of age upon the accuracy of pronunciation of the English language by learners in the institutions of the KPK that are in the public sector. It also examines the interaction between other variables like exposure, motivation, and classroom practices with the difference in age to determine the outcomes of pronunciation.

## **2. Literature Review**

The article discusses age and second language acquisition through the second language acquisition layer (2LA).

One of the most popular variables in Second Language Acquisition (SLA) is age. The Critical Period Hypothesis (CPH) was initially developed by Lenneberg (1967), and it states that a biologically defined period of time is specifically sensitive to learning a language because the human brain is open to it at that time. This window, closing at age of puberty, has a high level of neural plasticity and thus young learners gain the ability to learn a language implicitly and at a level of native speakers. At this stage, neurocognitive flexibility will start to deteriorate and will bring about more difficulties in learning to pronounce and other phonological characteristics.

Scovel (1988) termed pronunciation as the ultimate test of CPH his argument being that despite mastering grammar, vocabulary even the native-like accent cannot be learnt once one reaches a certain age. This hypothesis was further supported by Singleton and Ryan (2004) and Birdsong (1999) who made it clear that children who are exposed to an L2 language prior to puberty tend to develop pronouncing that is not different than that of native speakers. This benefit arises due to the sensitivity of the auditory cortex and the flexibility of the articulatory system during the early stages of development that enables children to perceive and reproduce small phonetic differences that cannot be detected or reproduced in their first language (L1).

Researchers like Flege (1999) and Moyer (2004) have, however, warned that the interpretation of the CPH can be deterministic. They provide that although biological age may have a role, success in L2 acquisition is not predetermined biologically, but it is dynamically determined by exposure, motivation, and learning conditions. The investigation has revealed that adults with a conscious training can attain a high phonological intelligibility, though they hardly attain native-like accuracy. The cognitive benefits that adults have are that they are able to think analytically, they are metalinguistically conscious and they have learning strategies that can balance their decreased phonetic sensitivity.

CPH is relevant to some extent in Pakistani ESL context. The introduction of English at an early age in private and elite schools gives younger students in urban areas an opportunity to learn near-native pronunciation, whereas students in the institutions of the public sector, particularly in Khyber Pakhtunkhwa (KPK), only learn English later in life and mostly in a teacher-centered classroom environment where a focus is given to grammar and reading comprehension. Consequently, such learners are deprived of the exposure that is natural and auditory based in the development of an accent. The relevance of age-sensitive pedagogy that addresses biological, social, and educational realities is supported by this gap.

## **2.2 Pronunciation in ESL Contexts**

Pronunciation has been extensively known as a key element of communicative competence. Derwing and Munro (2005) assert that it is not always important that pronunciation teaching should be based on producing accent that is native-like; the final objective is intelligibility and comprehensibility. The focus in English as a Second Language (ESL) situations, like in Pakistan, should be to make the speech of the learners comprehensible and socially acceptable as opposed to being flawlessly imitative to the native standards.

In South Asian students, phonological types of pronunciation problems are caused by the interference of the L1 and the unclear instructions. English phonemes like /θ/, /dh/ /zh/ and /v/ are a difficult aspect to the Pakistani learners since it does not occur in most native languages like Pashto, Urdu, and Hindko. Learners, therefore, substitute such sounds with their closest L1 counterparts (e.g., /θ/ ( / d ) hence results in serious regional accents. According to Rahman (2002), the following patterns of substitution can be listed as a legacy of colonial and educational inequalities where exposure to English was different between social classes. Khan (2011) also notes that learners in the public institutions, where English is learned late face difficulties in articulatory precision because of lack of both listening and speaking practice.

A study conducted by Derwing and Rossiter (2002) also goes ahead to indicate that pronunciation teaching is mostly ignored in the world due to the lack of training or confidence in the teachers in the teaching aspect. This

is aggravated in the Pakistani universities in the public sector with textbook-based curricula that focus on grammar and writing and have relegated oral practice. The result is that pronunciation mistakes continue to occur since they are not corrected or dealt with in the systematic way.

On the theoretical level, Gilakjani and Ahmadi (2011) state that pronunciation is to be incorporated into the communicative practice and indeed is not a self-contained skill. Successful pronunciation teaching consists of consideration of segmental features (individual sounds) and suprasegmental features (stress, rhythm and intonation). These features in Pakistani classrooms are seldom done in an interactive manner. The teacher tends to be a singular source of spoken English example, and where the example happens to be affected by the local accent pattern, the learners mirror the deviations. Therefore, the problems of pronunciation are not merely age-related, but inherited as well.

The latest studies (e.g., Derwing and Munro, 2015; Thomson, 2018) state that technology-assisted learning could help eliminate these barriers. The mobile applications, pronunciation software, and online videos expose learners to various accents and feedback systems that may ensure that the minimal input in the classroom can be supplemented. Such technological interventions can fill the exposure gap of Pakistani learners especially in areas such as KPK where they hardly have genuine interactions with English.

### **2.3 Age, Exposure, and Motivation**

Although biological influences such as age predetermine the limitations of pronunciation acquisition, psychological and environmental factors, in particular, exposure and motivation, have a crucial influence on the nature of these limitations. According to Flege (1999), age-related deterioration can be counterbalanced by a nice and natural language input. Students that are exposed to English speakers or use English media frequently (television, social sites, podcasts, etc.) develop greater phonetic sensitivity and articulation accuracy in comparison to students that have an input limited to the classroom.

Moyer (2004) determined that adult learners who are highly motivated and who practice in a systematic way and seek corrective feedback can even develop near-native intelligibility, despite having later onset of learning English. Motivation determines the rate and amplification of exposure: when learners perceive the use of English as an instrument of academic and professional growth, they are more probable to participate in fruitful conversation activities. On the contrary, unmotivated students of all ages were prone to inactivity where they could easily memorize grammar and vocabularies but not translate into use.

Exposure in Pakistani situation is widely differentiated depending on socio-economic status and institutional resources. Schools that teach in English offer younger students English interaction and access to multimedia on a

daily basis, which strengthens the functioning of auditory memory and accuracy of pronunciation. On the contrary, the institutions of the public sector, particularly in rural or semi-urban regions of KPK, do not have language laboratories, sound resources, and professionally trained phonetics teachers. In these environments, learners can only access English in formal classes which are typically grammar-based with instructions in Urdu or Pashto. Their exposure to the phonological system of the English language is restricted by this minimal exposure.

There is also interaction of motivation and cultural attitudes towards English. The ability to speak English in Pakistan is socially equated with education, prestige and employability. This, as Rahman (2002) points out, brings about instrumental motivation to the older learners who are after economic mobility in the learning process by mastering English. Nevertheless, instrumental motivation does not give us enough phonological improvement without the presence of integrative motivation, which is a real interest in identifying oneself with the linguistic and cultural dimensions of the English communication. This integrative motive is normally inherent to younger learners as it is a result of listening to music, watching movies, and using the Internet, which improves their accent acquisition on a subconscious level.

Finally, the combination of age, exposure and motivation defines the course of pronunciation attainment. The biological factors may reduce the potentiality but environmental enrichment and involvement in psychological activities can widen the performance. Thus, the teaching of pronunciation in the KPK state institutions should not be confined to the traditional practice to provide immersion, motivation and technology-enhanced learning opportunities that would allow students of both ages to acquire clarity and intelligibility in their English speech.

### **3. Research Objectives and Questions.**

#### **Objectives**

1. To test the association between the age of the learners and their accuracy in pronunciation in English.
2. To compare pronunciation performance levels in three age groups in public sector institutions of KPK.
3. To determine intervening variables (exposure, motivation, instruction) that influence the results of pronunciation.
4. To offer pedagogical suggestions on the teaching of pronunciation in the ESL settings.

#### **Research Questions**

1. What is the effect of age on the accuracy of pronunciation of English among ESL learners in KPK?
2. Do younger learners learn better in pronunciation than older learners?

3. What are other factors that influence differences in attainment of pronunciation among age groups?

#### 4.1 Research Design

In this research, the mixed-method design was used, which involved both quantitative pronunciation testing and qualitative interviewing to embrace the quantifiable performance and the subjective perception.

#### 4.2 Participants

The sample size of 120 participants was picked out of 3 different categories of the KPK based on the public institutions: • 40 secondary school children (1216). • 40 undergraduate students (ages 18-22). • 40 adult students in teacher trainings or improvement (25-40 years old). The participants were all students who had learnt English as a second language in classrooms.

4.3 Instruments 1. Pronunciation Test: The participants read the standardized passage (The Rainbow Passage) and a set of words with challenging sounds of the English language (/th, /dh, /v, /zh, /tsh, /sh/). 2. Rating Scale: The rating was made on a 5 point rating scale with three trained English teachers rating the recordings (1 = Poor, 5 = Native-like). 3. Questionnaire: The responses were collected in the following aspects: age, exposure to English, the degree of motivation, the language background of learners.

4. Interviews: 12 interviewees (4 in each group) will be interviewed to understand their learning experience and attitude towards pronunciation.

4.4 Data Analysis A SPSS was used to analyze quantitative data. ANOVA was used to compare mean scores of pronunciation between age groups. The qualitative responses were coded using thematic concepts where common patterns were established regarding exposure, motivation and instruction.

#### 5. Findings

This section will provide the findings of the quantitative and qualitative studies carried out to establish the effects of age on the accuracy of pronunciation of English among the learners in the public sector institutions of Khyber Pakhtunkhwa (KPK). The descriptive statistics, ANOVA tests, and thematic analysis of interviews were used to analyze the data. The findings demonstrate that there are definite trends concerning the age difference in pronunciation performance, and the information is supported by the experience and perception of the learners.

##### 5.1 Quantitative Results

The quantitative analysis presented an empirical evidence to prove the assumption that age is a condition leading to the attainment of pronunciation during second language learning. The test of ANOVA showed that significant differences between the three age groups were statistically significant ( $p < .01$ ) which confirmed that age played a significant role in determining pronunciation accuracy. The average scores of pronunciation were as follows: • Group 1 (12–16 years): Mean = 4.2 •

Group 2 (18–22 years): Mean = 3.5 • Group 3 (25–40 years): Mean = 2.8 These findings indicate that there is a steady deterioration in the accuracy of pronunciation as age advances. Learners younger than fourteen years were significantly superior in segmental (individual sounds) and suprasegmental (stress, rhythm, and intonation) features. They also showed better pronunciations of the challenging English consonants like /th/ /dh/ and /v/ that are absent in their mother tongues. Their intonation was also less jerky and more adequately controlled in terms of stress placement, which added to their overall intelligibility. Additional comparison indicated that pronunciation mistakes of younger learners were largely developmental like /θ/ /d/ or /t/ rather than /d/ and more of which are prevalent during the initial phases of English acquisition. However, adult learners on the other hand exhibited the stabilized fossilized errors that is, their mispronunciation had over a period become accustomed and was hard to rectify. Large numbers of the adult participants kept saying /v/ /w/ and did not minimize syllables that were not stressed and produced a rhythm that was more similar to their native language patterns. The statistics showed also that there was a variance in the pronunciation performance in the same age category which depended on exposure and motivation. There are some learners of the undergraduate level who even scored more than the rest even though they were of an older age group because they claimed that they were frequently exposed to the English media or that they were involved in speaking activities. This shows that as much as age is a contributing factor, it also interacts with other socio-educational factors which either contribute to or restrict the performance of learners. To conclude, the quantitative data is a solid statistical evidence in support of the argument that younger students are better at pronunciation accuracy than adult students in the ESL environment of KPK. The ability to vary in each group, however, indicates that other factors such as exposure, motivation, and classroom environment are also a contributing factor.

## 5.2 Qualitative Results

The qualitative data collected using semi-structured interviews complemented the numerical findings as it showed the subjective experiences, attitudes and problems that the participants had with learning the English pronunciation. Younger Learners (Ages 12–16) The younger participants also reported the learning of English pronunciation to be a natural and pleasant process. Their development was credited to frequent exposure by school, English cartoons, YouTube videos, and classroom drilling by many. They often stated that they were imitating their teachers or media speakers to sound like them and it means that imitation and auditory memory played a major role in their learning. They claimed to have low anxiety in speaking English and had high self-confidence. The comments of one student (secondary) were: I attempt to imitate the manner in which the characters talk in the English programs. It teaches me to

pronounce the words in a right way. This is indicative of a fun but efficient interaction with learning pronunciation that is inherent to younger age groups which learns through unconscious learning through imitation and repetition. Undergraduate Student (1822 Years Old). The undergraduates were found to be more conscious with the pronunciation accuracy and were frustrated with the fossilized errors. They believed pronunciation was not accorded due weight in their university curriculum and the teachers would hardly correct them in their speech. A great number of students stressed that they were able to read and write English properly but were reluctant to speak because of being afraid to pronounce words incorrectly. One of the university students wrote: We lay too much emphasis on writing assignments. There is no speaking part of the exam, and we do not train a lot on pronunciation. This observation supports the fact that the institutional bias to the use of written English exists and that the assessment practice indirectly affects the pronunciation proficiency..

#### **Adult Learners (Ages 25–40)**

The teacher training and professional participants adults were always found to have a problem with changing their pronunciation habit. They blamed this on years of English usage with influences of their mother tongue phonology (Pashto, Urdu, or Hindko). Some of them confessed that they were self-conscious about their accent, and it prevented them from wanting to talk in English in front of an audience. Nevertheless, there were online learners who were highly motivated adult learners and had engaged in self-practice who demonstrated measurable improvement.

#### **According to one of the adult respondents:**

I will be able to improve when I listen attentively and train on recordings. Yet it is a slow process and trust.

The reflection of the adults is directed to the joint effect of the psychological barriers (self-consciousness, fear of judgment) and the poor exposure on their pronunciation formation.

#### **Emergent Themes**

Based on the interviews, three themes were repeated:

1. Exposure and Environment -Constant exposure to the English media and communication opportunities had a positive effect on pronunciation regardless of age.
2. Motivation and Attitude -The learners who rated English pronunciation as significant were showing improved progress, even in older age categories.
3. Institutional Neglect - In all groups, learners complained about the absence of formal instructions of pronunciation, minimal feedback and the conventional methods of teaching that do not consider oral skills.

#### **6. Discussion**

The results of the quantitative and qualitative data are a strong support of the Critical Period Hypothesis (CPH) in the area of public sector ESL education of KPK. The statistics show clearly that learners who are exposed



to English at a young age will grow into pronunciation that will be more accurate and have a natural sound. This is in line with other literature (Lenneberg, 1967; Scovel, 1988; Singleton and Ryan, 2004) that, according to them, biological variables, including brain plasticity and phonetic sensitivity, deteriorate as one gets older.

### **6.1 Age as Determinant of Pronunciation Attainment.**

This is explained by the fact that younger learners have a higher degree of neuroplasticity due to which they are able to develop new articulatory habits without the interference of the developed L1 phonological patterns. The implicit learning is also present among young learners; they acquire the pronunciation patterns based on what they hear, without being taught it. This is in sharp contrast of adult learners who are dependent on analytical reasoning and conscious correction, a more gradual and less natural process of phonological acquisition.

But this study also found out that though age dictates potential achievement is dictated by attitude and exposure. That is, biological classifications can be a disadvantage to adults, yet motivation, practice, and the constant engagement with the language will partially offset these drawbacks. This reiterates the ideas that adult learners who have been exposed extensively with positive attitudes can obtain intelligible pronunciation as good as younger learners (Flege, 1999).

### **6.2 Sociolinguistic and Educational Factors.**

Other issues that the results reveal have a significant effect on the development of pronunciation in KPK, which are sociolinguistic and institutional. Institutions in the province used in the public sector are likely to focus on grammar translation and writing based assessment and neglect oral communication skills. Educators are not always trained in phonetics and the teaching of pronunciation is seldom taught in a systematic way. This institutional control increases the disparities with age with older learners, who already have biological problems, getting little pedagogical assistance to overcome them.

Moreover, the fact that KPK is multilingual is an influential factor. The pronunciation of English has an impact on phonological transfer of learners whose mother languages are Pashto, Urdu, or Hindko. This is particularly eminent in older learners whose articulation patterns in L1 are entrenched. Younger students who are exposed to English early and often are more adaptive and less transferring.

### **6.3 The effect of Motivation and Technology.**

Remarkably, motivation and technology turned out to be important mediating variables. Language learning with the help of the pronunciation app, online video, or social media platforms led to a noticeable improvement in the adult learner. It proves that age is a natural limitation, but it can be overcome through technological exposure and the provision of constant auditory stimulation and practice. New sources of adult

pronunciation training used in Pakistan have been developed through the accessibility of pronunciation training software such as YouGlish, Elsa Speak and BBC Learning English.

#### **6.4 Implications to Critical Period Hypothesis in ESL Strategy.**

Although the CPH is proven by the study, it is also hinted that one should understand the hypothesis in a flexible way. The results suggest that age establishes biological limits, whereas the achievement of pronunciation is a continuum, rather than cut-off point. With the right conditions of learning, adult learners would be able to attain nearly native intelligibility. Thus, the ESL situation in Pakistan exemplifies that the process of learning the pronunciation is dynamic and depends on both natural and environmental conditions.

### **7. Conclusion and Recommendations**

#### **7.1 Conclusion**

The research finds that age has a very potent and significant influence on the achievement of English pronunciation among learners in government institutions in the Khyber Pakhtunkhwa. The segmental and suprasegmental phonological control is more controlled in younger learners, which proves the fact that phonological development is a natural process which is easier to achieve when exposure occurs at an early age. Adult learners on the other hand show fossilized errors of pronunciation and greater L1 interference because of reduced neural flexibility and reduced exposure.

Nevertheless, the study also proves that age is not the only factor that determines the success of pronunciation. The motivation, exposure, institutional support and the quality of instruction are important factors in determining the outcomes of the learners. This is the most astonishing to note because adult learners who have a steady practice and positive attitudes can dramatically improve even despite biological limitations.

#### **7.2 Pedagogical Recommendations**

According to the results, the following is suggested in order to improve the teaching of pronunciation in the governmental sector of KPK:

##### **1. Insert Pronunciation into the Curriculum:**

Pronunciation must be considered as a crucial competency with reading, writing, listening as well as speaking. Frequent pronunciation practice, minimal pair tasks, and listening discrimination tasks ought to be included.

##### **2. The Training of the Teachers in Phonetics:**

Professional training in phonetics, phonology, and pronunciation pedagogy during English instruction is necessary. They should be able to diagnose and rectify some of the frequent mistakes that learners make with the help of workshops and short courses.

##### **3. Exposure to English Sounds at an early age:**

Children need to be exposed to English sounds and patterns of intonation at a tender age by way of rhymes, songs and interactive patterns of listening.

#### 4. Application of Multi-media and Technology:

The use of the pronunciation software, mobile applications, as well as the audiovisual materials can assist the learners of any age to access the real models of the pronunciation.

#### 5. Ernst Labs: Speaking Clubs and Pronunciation Labs:

Institutions ought to open English speaking clubs and labs of pronunciations where students would learn to pronounce and not be afraid of being criticized.

#### 6. Motivational and Psychological Assistance:

Adult learners are prone to fear and humiliation. Affective barriers to pronunciation learning can be decreased through encouragement of self-confidence and the positive feedback.

#### 7. Learning Materials-contextualized:

The materials used in pronunciations must be based on the local linguistic issues, particularly on the frequent mistakes due to sound systems of Pashto, Urdu and Hindko.

#### 7.3 Future Research Limitations and Directions.

This research was limited in that it only allowed the researcher to work with age as a variable among institutions in the public sector in KPK. Future research could:

Add to it, private institutions and rural schools to compare them.

- Use longitudinal designs to monitor the development of pronunciation. Objective measurement Pronunciation analysis tools (e.g., PRAAT) using computers.

- Learn about gender-based and dialectal effects on the process of pronunciation learning.

Investigation question: How can teacher feedback and classroom interaction help in enhancing the results of pronunciation?

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