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Unveiling and Addressing Pronunciation Challenges in English Consonantal Phonemes for Foreign Language Learners

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Abstract

Through the utilization of a contrastive analysis of English consonantal phonemes and their Russian counterparts, the present study investigates the challenges faced by Russian EFL learners in pronouncing English consonantal phonemes, with a particular focus on phoneme substitution errors as a principal source of erroneous pronunciation. We comprehensively explore the characteristics of both the English and Russian consonant systems, highlighting the differences between them. Based on this examination, the study aims to present the detailed articulatory characteristics and phonetic variations of Russian speakers' common mispronunciations or improper substitutes of English consonants, rather than focusing on shared ones between the two languages. Furthermore, it seeks to provide strategies for error correction and effective pedagogical strategies to address specific phonemic challenges and enhance accuracy. Grounded in a comprehensive understanding of the objectives and advantages of comparative analysis within the context of phonemic awareness, the study emphasizes the significant importance of pronunciation instruction. It points out that this area still appears somewhat overlooked in specific EFL teaching situations within the context of English language education.

Keywords: *English consonantal phonemes, contrastive analysis, phonemic awareness, Russian EFL learners*

1. INTRODUCTION

Despite facing criticism, contrastive analysis theory remains influential in foreign language acquisition, as foreign language learners often “transfer” formal features from their mother tongue to their target language utterances [5]. Particularly in the context of phonology, contrastive analysis utilizes language comparisons to explain learners' difficulties and plays a crucial role in describing phonological systems. It identifies and addresses phonemic challenges, thereby improving pronunciation and language proficiency. By highlighting differences between native and target languages, contrastive analysis enhances learners' awareness of pronunciation difficulties. As a valuable tool in pronunciation instruction, it assists both learners and instructors in unveiling phonemic challenges and enhancing instruction, thereby facilitating more effective teaching and learning of pronunciation skills. Comparing and contrasting the sounds of Russian learners' native language with English contributes to the development and enhancement of phonemic awareness. As noted by Wong, phonemic awareness involves recognizing discrete sound units that contribute to differences in meaning [28]. Elevating learners' phonemic awareness is crucial in pronunciation teaching, as it enhances their ability

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to distinguish between different phonemes, recognize subtle nuances, and accurately pronounce individual sounds. Consequently, the development of phonemic awareness facilitates improved listening comprehension and pronunciation. The cultivation of phonemic awareness can be achieved by examining the specific details of individual English phonemes, which can be explicitly taught to learners (ibid.). Therefore, Russian learners should not only be guided in perceiving differences among similar pairs or groups of consonantal phonemes but also in producing challenging phonemes through focused concentration and heightened awareness of their articulatory details. The study aims to investigate the difficulties and phoneme substitution errors faced by Russian EFL learners in pronouncing English consonantal phonemes, and thereby to offer them strategies for error correction and effective pedagogical approaches to minimize mispronunciations. Section 2 employs a contrastive analysis of English consonantal phonemes and their Russian counterparts to comprehensively explore the characteristics of both language systems, emphasizing the differences. This facilitates Russian learners in understanding unique English consonantal phonemes that may not exist in their native language and vice versa. In Section 3, building upon this exploration, the study delves into the detailed articulatory features and variations of specific phonemes frequently mispronounced or incorrectly substituted by Russian learners, rather than concentrating on shared segments between the two languages. Furthermore, it seeks to provide strategies for error correction and effective pedagogical approaches. The concluding section of this study proposes five key steps to collectively provide a structured approach for Russian EFL learners to overcome pronunciation challenges and enhance their proficiency in English consonantal phonemes. Built upon a thorough comprehension of the objectives and benefits of comparative analysis within the realm of phonemic awareness, the study underscores the crucial significance of pronunciation instruction. It points out that this area still appears somewhat overlooked in specific EFL teaching situations within the context of English language education.

2. CHARACTERISTICS AND PECULIARITIES OF ENGLISH AND RUSSIAN CONSONANT INVENTORIES

To explain the discrepancies in consonant pronunciation, which constitute the most striking features of Russians' foreign accent in English, we must first analyze the consonantal systems of the two languages. Russians might use their native phonemes in any given word or phrase, which they judge to be closest to those of English. English and Russian have distinct consonant systems, each characterized by a unique phoneme inventory and phonetic features. The Russian consonant system comprises approximately 33-37 phonemes. Compared to the fewer six vowels, this relatively large inventory of consonants typically categorizes Russian as "consonant-rich" [20]. On the other hand, the English consonant system comprises 24 phonemes. The consonant-vowel ratio in Russian is typically around 33-37:6, indicating that there are many more consonant phonemes compared to vowel phonemes. While English does have a diverse range of consonant sounds, depending on the dialect and analysis, it generally falls within the average size category (22 ± 3) when considering cross-linguistic averages for consonant inventory. The consonant-vowel ratio in English typically ranges from approximately 24:12, indicating a somewhat lower proportion of consonants but a far higher proportion of vowels compared to Russian (ibid.). When considering the parameter of points of articulation, Russian distinguishes eight places of articulation as follows: bilabials /п, п', б, б', м, м'/; labio-dentals /ф, ф', в, в'/; a dental /л/; denti-alveolars /т, д, н/; alveolars /т', д', с, с', з, з', ц, н', л', р, р'/; post-alveolars /ш, щ, ж, ч/; a palatal /й/; and velars /к, к', г, г', х, х'/. On the other hand, English distinguishes nine places of articulation: bilabials /p, b, m, w/; labio-dentals /f, v/; interdental /θ, ð/, alveolars /t, d, n, s, z, l/, a retroflex /ɻ/, palato-alveolars /ʃ, ʒ, ʒ, dʒ/; a palatal /j/; velars /k, g, ŋ, w/; and a glottal /h/. Roughly speaking, Russians tend to articulate sounds classified as alveolars in English more fronted in the mouth. This means that coronal dentals /л, т, д, н/ in Russian correspond to apico-alveolar sounds /l, t, d, n/ in English. Additionally, Russian generally lacks interdental, retroflex or cacuminal, and glottal sounds. Regarding manner of articulation, Russian consonant phonemes are categorized into six groups: plosives, fricatives, affricates, nasals, liquids (including trills), and glides. Similarly, English consonants are classified into the same six groups. While the numbers of English plosives, affricates, liquids align with those in Russian, English has more fricatives, glides and nasals compared to Russian. When classifying the obstruents of the two languages based on the place of articulation,

both affricates and stops are present. English and Russian share similar plosive categories, as both languages have voiced and voiceless plosives, comprising the same six basic plosive sounds /p, b, d, t, k, g/. However, despite this shared foundation, significant differences exist in their distribution and phonetic realization. For instance, in English, consonant phonemes such as /t/, /d/, and /n/ are articulated at the alveolar ridge, while in Russian, they are dental, thereby contributing to the phonetic distinctions between the two languages. Additionally, in English, voiceless plosives are typically aspirated at the beginning of stressed syllables (except when preceded by /s/ in the same syllable), as evidenced by the noticeable puff of air accompanying the /p/ in *pat*. Conversely, in Russian, all stops are unaspirated. Moreover, initial voiced stops are more fully voiced than in English [26]. Russian also features palatalized versions of some plosives, especially before front vowels /i/ and /e/ and the palatal sonorant /j/, where the tongue is raised towards the hard palate, as in e.g., /ɗʲ/ [2]. In contrast, English does not commonly exhibit widespread palatalization of plosives. Instead, English includes glottal stops in certain contexts, whereas Russian generally lacks glottal stops. For nasal stops, both English and Russian articulate them by opening the velopharyngeal port in the same way, but the languages differ in the number, distribution, and phonetic realization of their nasal elements. English has three nasal sounds: /m/ (bilabial), /n/ (alveolar), and /ŋ/ (velar), while Russian lacks the velar /ŋ/ but exhibits two basic voiced nasals /m/ (bilabial) and /n/ (dental), along with their palatalized or soft counterparts, represented by <м, м', н, н'>. As in English, the nasals have the same position as certain of the stops: /p/, /b/ - /m/; /p', /b' - /m'/; /t/, /d/ - /n/; and /t', /d' - /n'/ [8].

Both English and Russian exhibit fricatives, forming the second-largest group of obstruents after plosives across the world's languages [19]. However, the specific fricatives present and their distribution significantly contribute to the distinct sound characteristics of each language. In English pronunciation, there are nine fricative phonemes: /f, v, θ, ð, s, z, ʃ, ʒ, h/, produced in five positions of the mouth. Russian features seven basic fricative phonemes, along with their palatalized versions, totaling 14: /f, fʲ, v, vʲ, s, sʲ, z, zʲ, ʂ, ʂʲ, ʐ, ʐʲ, x, xʲ/ [12]. These are also produced in five positions of the mouth. Notably, the English interdental fricatives (/θ, ð/) are absent in Russian, which leads to their typical mispronunciation or incorrect substitution with other native sounds. While Russian post-alveolar fricatives /ʂ (ш)/ and /ʐ (ж)/ are similar to English /ʃ/ and /ʒ/ respectively in terms of their articulation, they are distinct phonemes with their own phonetic qualities. The English ones are soft but the Russian ones are dark “part of their dark timbre is due to retroflexion of the tongue-tip” [1]. The Russian voiceless velar fricative /x/ and the English glottal fricative /h/ differ in their points of articulation, often leading to confusion among Russians. They are indeed produced in different parts of the vocal tract, with the Russian /x/ being produced further back in the mouth at the velum, and the English /h/ being produced at the glottis. For the affricates produced by transitioning from a plosive to an immediately blended fricative, forming a unique blend of merged and indivisible elements, the two languages have them at different positions and manners of articulation in the oral cavity. English features both voiced and voiceless affricates (/dʒ/ and /tʃ/), occurring in the post-alveolar region. On the other hand, Russian only has voiceless affricates: the voiceless hard denti-alveolar /ts (ц)/ and the voiceless soft or palatal /tʃʲ (ч’)/. It should be noted that Russian does not have a separate phoneme corresponding to the voiceless /tʃ/ as does English. In Russian, /dʒ/ appears only as “a sandhi variant of /tʃ’.” Unlike most languages, which typically have at least one liquid in their phonemic inventory, both English and Russian boast two liquid phonemes: one lateral, /l/, and one rhotic, /r/. In Russian, the voiced dental lateral /l/ and the voiced alveolar trill 'r', each have their own phonemic palatalized version /lʲ/ and /rʲ/. The unpalatalized /l/, produced by raising the back of the tongue, is referred to as the dark /l/, while the palatalized /lʲ/, created by raising the front of the tongue towards the palate, is known as the clear /li/. Worth mentioning is that these are not allophones of the same phoneme but separate members of different phonemes in Russian phonology [12]. For the Russian voiced alveolar trill /r/, the tip of the tongue “makes a very rapid succession of taps against the middle of the teeth-ridge” (ibid. 176). On the other hand, English has only two liquid phonemes, i.e., the alveolar lateral liquid /l/ and the voiced alveolar or retroflex /ɭ/. /l/ is produced with varying degrees of “velarization” (i.e., raising the back of the tongue) [27]. Syllable-final laterals tend to be backer, more velarized, or 'darker,' and longer than syllable-initial ones, whereas syllable-initial laterals are usually more palatalized, or 'clearer', than syllable-final ones [22]. For /ɭ/, the front part of the tongue approaches the upper gum, or the tongue-tip is curled back towards the roof of the mouth, but without the rapid

vibrations characteristic of a trill. The various /l/'s and /r/'s of English are all members of one phoneme [12].

Regarding glides, English exhibits the palatal glide /j/ and labio-velar glide /w/. Russian employs only one glide, /j/, consistently pronounced as a soft sound. Notably, Russian lacks a distinct /w/ phoneme, though occasionally featuring a faintly articulated [w] as a transitional sound between /u/ and a subsequent vowel, as in the word "у окна" (meaning "at the window") pronounced as [uw aknji]. It is important to note that the English /w/ is unique because it involves two places of articulation, namely, lip rounding and velarization [27]. In the context of vocal cord vibration, both Russian and English languages feature voiced and voiceless consonants, which stem from variations in vocal cord patterns in the same manner. In Russian, voiceless consonants, devoid of vocal cord vibration, encompass /п, п', т, т', к, к', ф, ф', с, с', ш, ш':, ш, х, х', ц, ч'/, while voiced consonants, featuring vocal cord vibration, comprise /б, б', д, д', г, г', в, в', з, з', ж, м, м', н, н', л, л', р, р', й/. Notably, voicing is distinctive for all obstruents except /ц/, /ч'/ and /х/, which do not possess voiced cognates [9]. In English, voiceless consonants include /p, t, k, f, θ, s, ʃ, h/, while voiced consonants consist of /b, d, g, dʒ, v, ð, z, ʒ, m, n, ŋ, l, r, w, j/. During the production of voiceless consonants, the forceful exhalation and muscular tension yield fortis sounds [17]. Conversely, voiced consonants involve weaker exhalation force and muscular tension, resulting in lenis sounds. English fortis consonants are represented by /p, t, k, f, θ, s, ʃ/, while lenis counterparts include /b, d, g, dʒ, v, ð, z, ʒ/. Other English consonants like /h, m, n, ŋ, l, w, j, r/ do not engage in fortis-lenis distinctions. In Russian, the articulatory energy force contrast does not play as significant role (ibid.), considered a predictable redundant feature.

However, the distinction between voicelessness and voicedness remains the primary distinguishing feature in Russian consonants. Notably, in connection with voicing, it is worth mentioning the weak pronunciation of voiceless fortis consonants /p, t, k, f, s, ʃ, ʃ/ in Russian, as well as the devoicing of voiced phonemes /b, d, g, v, ð, z, ʒ, dʒ/ in the terminal position [17]. From the perspective of supplementary articulation of the tongue center, exhibits a distinctive contrast between plain and palatalized consonants. Unlike English, where such contrast is absent, Russian consonants, with several exceptions, come in phonemic pairs. The common Russian terms for these contrasts or opposites are 'soft' (palatalized) and 'hard' (non-palatalized) [1]. The existence of hard or plain and soft or palatalized consonants is described as "the most striking feature of Russian consonants as a system" [8]. This secondary palatalization, as a phonemic feature, involves the raised tongue dorsum and is the primary correlate of palatalization [2]. The middle of the tongue in their production is raised higher to the hard palate, than during the secondary articulation in the production of the English soft consonants (/ʃ, ʒ, dʒ, ʃ/) [17]. In Russian, there are 15 pairs of consonant phonemes where one has the plain pronunciation and the other has the palatalized pronunciation with a softening of the tongue. Despite this difference, the two types of consonants have substantially "the same type of sound production and the same classification by positions of lips and tongue" (Gage 1965:45). The hard consonants and their soft counterparts include /б/ – /б'/, /в/ – /в'/, /г/ – /г'/, /д/ – /д'/, /з/ – /з'/, /к/ – /к'/, /л/ – /л'/, /м/ – /м'/, /н/ – /н'/, /п/ – /п'/, /р/ – /р'/, /с/ – /с'/, /т/ – /т'/, /ф/ – /ф'/, and /х/ – /х'/. The consonant phonemes /ц, ш, ж/ are always hard, while /ч', щ', й'/ are always soft. Again, it's worth noting that English lacks such a phonemic dichotomy, but some consonant phonemes in English do have palatalized or velarized positional variants or allophones. To conclude this section, the preceding analysis and discourse delineate seven consonant phonemes inherent to the English language, which are found to lack corresponding equivalents within the phonetic inventory of the Russian language: /w/ (voiced labio-velar glide approximant), /θ/ (voiceless dental fricative), /ð/ (voiced dental fricative), /r/ (voiced alveolar or retroflex approximant), /dʒ/ (voiced post-alveolar affricate), /ŋ/ (voiced velar nasal), and /h/ (voiceless glottal fricative). Conversely, Russian consonant phonemes which have no counterparts in English include the following: the phonemic soft or palatalized consonants (/б', в', г', д', з', к', л', м', н', п', р', с', т', ф', х'/); /ц/ (voiceless alveolar affricate); /р/ (voiced alveolar rhotic trill); and /х/ (voiceless velar fricative).

3. CORRECTING PRONUNCIATION ERRORS AND PRACTICAL STRATEGIES

Expanding upon the examination in the preceding section, the current section delves into the most notable mispronunciations or improper substitutes of English consonants by Russian speakers. These

mispronunciations or substitutions closely reflect the most common errors arising from disparities in articulation between English and Russian [17].

3.1. Interdental Fricative Pair /θ/ and /ð/

English interdental fricatives /θ/ and /ð/, commonly represented by <th> in English spelling, present significant challenges for English as a Foreign Language (EFL) learners due to their absence in the majority of languages [4]. Despite guidance to avoid substitutions, studies show that EFL learners frequently replace [θ] with [s], [f], or [t], and [ð] with [d], [z], or [v] [4]. The lack of English interdentals in the Russian consonantal system contributes to the mispronunciation of these sounds by Russian speakers, who often substitute them with phonemes resembling English equivalents [3]. For instance, Russians may substitute /d, z, w/ for /ð/, as in “dat” instead of “that,” “zer” instead of “there,” and “bruh-wer” instead of “brother,” and they may substitute /f, s, t/ for /θ/, as evidenced in “free” instead of “three,” “sink” instead of “think,” and “tank you” instead of “thank you” [23]. When articulating the interdental fricatives /θ/ and /ð/, the tongue tip protrudes slightly between the teeth. These sounds can also be produced by lightly placing the tongue tip against the back of the upper teeth [16]. Incorrect substitutions in Russian, such as /f, s, t/, differ from /θ/: /f/ contrasts with /θ/ only in terms of place of articulation (labiodental vs. dental); /s/ also contrasts with /θ/ only in place of articulation (alveolar vs. dental), and /s/ produces a hiss as the air is forced through a narrow valley, resulting in a 'sharper' or 'brighter' and louder sound [22]. At this juncture, it is imperative to examine an effective method for accurately pronouncing the interdental fricatives, which present considerable challenges for many Russian learners of English [28]. Firstly, raising awareness about the accurate articulatory positions and manners is crucial, followed by instruction on the intricate phonetic characteristics of these sounds. Learners are then guided to distinguish differences among minimal pairs or sets, aiding precise word pronunciation. Examples of minimal pairs contrasting /θ/ with /f, s, t/ and /ð/ with /d, z, w/ include thin ~ fin ~ sin ~ tin and then ~ den ~ Zen ~ wen. As a starting strategy for articulating the interdental fricatives, learners may find it helpful to initially visualize the tongue placement: they extend their tongues forward, gently stick their tongue tips out between their teeth, and let air out over their tongue tips. This exercise helps learners become accustomed to the precise point and manner of articulation needed for accurate pronunciation.

3.2. Glide /w/ vs. Fricative /v/

Russian-native English learners often struggle to master certain consonants, particularly the sounds of /w/ and /v/. This difficulty arises from the challenge of distinguishing between these sounds, resulting in frequent interchangeability of /v/ and /w/ in English words. Common mispronunciations like “ven” for “when” and “wery” for “very” stem from this linguistic challenge, rooted in the lack of a clear distinction between /w/ and /v/ in Russian. The absence of the glide /w/ in Russian prompts substitution with the labiodental fricative /v/ when encountering English words containing the /w/ sound. However, this does not necessarily imply similar difficulties with English labiodental fricatives /f/ and /v/, which are already familiar in Russian. Since /w/ (as in “wait” /wɛɪt/) is not part of the Russian consonantal inventory, Russian learners must grasp the distinct articulatory procedures for /w/ and /v/, which are produced at different points and manners of articulation, to ensure accurate pronunciation. In Russian, /v/ is a voiced labio-dental fricative, which is almost indistinguishable from the normal English /v/ [12]. However, it differs significantly from the English voiced glide approximant /w/. Described as a voiced labial-velar glide approximant, /w/ involves gestures at both bilabial and velar locations, with the back of the tongue ascending towards the velum, akin to the articulation of /u/, while also incorporating simultaneous lip-rounding and vocal cord vibration [22]. Although classified as a consonant, /w/ is commonly referred to as a semi-vowel due to its resemblance to the vowel /u/, if pronounced for an extended duration. It is significant that the transition of /w/ as a glide should be observable, for instance, as /w/ swiftly shifts to /ɛ/ in the word “wait”. Despite this vowel-like nature, /w/ should exhibit, as a consonant, its gliding nature and short duration and its merge into the following vowel. To pronounce /w/

distinctly, Russian learners of English should first develop phonemic awareness of /w/ as a separate English phoneme and engage in strategic articulatory exercises. Instead of solely considering /w/ as a consonant similar to /v/, they should recognize its unique characteristics as a semi-vowel of a double articulation (ibid.). Learners can practice producing /w/ by first articulating the vowel /u/ sound, and then transitioning smoothly into another vowel sound. This exercise allows learners to experience the transition from a vowel-like sound (/u/) to the consonantal glide /w/, aiding in understanding its unique articulatory nature compared to a regular consonant like /v/. Despite its lip movement and vowel-related nature, /w/ is considered a consonant due to its gliding nature, short duration, and lack of stress compared to the succeeding vowel (ibid.).

3.3. Alveolars /l/, /t/, /d/, and /n/

In Russian, the segment /l/ is dental, signifying that the tongue makes contact with the upper teeth, and the lateral contraction of the tongue is a distinctive feature of the Russian /l/ sound [12]. In contrast, English features an alveolar /l/ sound, where the tongue touches the alveolar ridge, the area just behind the upper front teeth. Similarly, for the Russian voiceless denti-alveolar plosive /t/ and /d/, the tip of the tongue touches front teeth in an angle formed by upper incisors and teeth-ridge, while the blade of tongue contacts the forward part of teeth-ridge. The stop and release of air passage, as well as the raised position of soft palate, are identical for both sounds. However, the Russian /d/, as expected, differs from /t/ in that the vocal cords are together and vibrating throughout the duration of the sounds. This laryngeal state is consistent with that of the English plosives /t, d/. This English plosive pair is formed with the tip of the tongue against the raised alveolar ridge, situated just behind the upper front teeth. They are described as alveolar and ‘apical,’ which contrasts with Russian /t, d/ as “apico-laminal”, involving both apical and laminal (ibid. 99). Notably, as mentioned earlier, the Russian /t/ is not normally aspirated, unlike its English equivalent. Therefore, special attention should be given to aspirating English /t/. The Russian nasal /n/ is also denti-alveolar, similar to /d/. It is produced with the same articulating organs and the state of air passage as the plosives, with the only distinction lying in the lowered position of the soft palate, allowing air to pass through the nose. It is crucial to differentiate between Russian and English /n/ by marking every occurrence of /n/ in the phonetic transcriptions of Russian texts. Significantly, Russian lacks the /ŋ/ sound, such as the coda in English sing, before the velar plosives /k, g/. Consequently, the /n/ segment remains denti-alveolar in words like банк “bank” (ibid. 160). This difference leads some Russian-native English learners to occasionally substitute /ŋ/ with /n/, for instance, saying swin instead of swing. Russian learners of English might dentalize the English phonemes /l/, /t/, /d/, and /n/. To overcome this and improve their pronunciation, Russian learners should focus on tightening their tongue tip, moving it further backwards and pressing it against the alveolar ridge. They should aim to feel their tongue touching or almost touching the bony tooth ridge as they produce these segments. In the case of the English /l/, the tongue is often placed a tiny bit further back than /d/, using a soft tongue tip and applying very little pressure. Gently touching the middle alveolar bumps with the tongue is a key aspect of producing this phoneme. The English /t/ is produced with a tense tongue tip that touches the alveolar bumps, with the vocal cords open, and may be accompanied by aspiration in certain circumstances. On the other hand, /d/ is made with a softer tongue tip gently pressing against the alveolar bumps, positioned just slightly further back than the Russian /t/, with the vocal cords vibrating. English speakers articulate the English nasal /n/ by broadly pressing the front of the tongue against the same alveolar bumps behind the upper front teeth, with the soft palate lowered and the vocal cords vibrating. In this context, the distinction between Russian and English sounds can be attributed to the position and tension of the lower jaw, which in turn affects the placement of the tongue tip [25]. Russian speakers tend to hold their lower jaw higher, resulting in a smaller oral cavity and more pronounced forward and backward movement of the tongue within this confined space. In contrast, English speakers typically hold their lower jaw more loosely and lower, causing the tongue to be positioned lower in the mouth and requiring it to reach higher to contact the alveolar ridge.

3.4. Aspirated Plosive Triplet /p/, /t/, and /k/

Russian voiced plosive consonants /b/, /d/, and /g/ are consistently to be fully voiced in all circumstances,

while their voiceless counterparts are not normally aspirated in certain circumstances [12]. Therefore, English speakers must take care not to aspirate Russian voiceless plosives. Russian speakers achieve this by relaxing their speech organs as much as possible, fully relaxing their tongue and lips before articulating Russian /p/, /t/, or /k/, as exemplified in Russian cognates such as park, lampa, and tank [14]. It is notably remarkable, especially in comparison to their English counterparts, that Russian speakers do not engage tension in their tongue and lips during this process. Consequently, Russian voiceless stops like /p/, /t/, and /k/ are typically unaspirated, meaning there is no burst of air following their release. Russian unaspirated /p/, /t/, and /k/ sound like a consonant intermediate between the English [kh], [th], and [kx] and /b/, /d/ and /g/, respectively [14]. Since consonants are pronounced without aspiration in Russian, it logically follows that aspiration should not occur to Russian affricates as well. In English, voiceless plosives /p/, /t/, and /k/ are typically somewhat aspirated by most speakers when followed by a stressed vowel and not preceded by /s/ [12]. Aspiration in these stops is characterized by a noticeable delay between the release of the closure and the onset of vocal fold vibration, known as Voice Onset Time (VOT). During the transition from the release of the closure to the onset of the following vowel, there is a perceptible interval where breath is expelled from the mouth while the vocal cords have not yet begun to vibrate [12]. The burst of air following the release of the stop characterizes aspirated stops, with the aspiration generated by air passing through the glottis and then the vocal tract [22]. Learning to pronounce voiceless plosives with aspiration can be challenging for Russian speakers. To understand the concept of aspiration and practice pronouncing voiceless stop consonants with the necessary aspiration, Russian learners can try a tactile approach. They should place their hands in front of their mouths and say words like "pop," "top," and "cop." By practicing until they feel a puff of air against their hand as they pronounce these words, they can develop a sense of the airflow associated with aspiration. When pronouncing word-initial voiceless stops /p/, /t/, or /k/ in English, Russian speakers should be trained to engage their tongue and lips with tension. This tension results in aspiration, which is characterized by a burst of air that accompanies the articulation of these sounds. It is helpful to start practicing with individual syllables such as [pa], [ta], [ka], observing the puff of air produced after each stop at the beginning of a stressed syllable. The release of an aspirated plosive like /p/, /t/, or /k/ can indeed be likened to "the noise made by a cork being drawn out of a bottle" [12]. An effective method is to teach Russian learners to produce aspirated stops with a spraying motion rather than saying them with relaxation. This approach encourages the production of the necessary burst of air characteristic of aspirated sounds.

3.5. Syllable-initial /ɹ/

Russian learners of English, accustomed to their native alveolar trill /r/, may find themselves substituting the English post-alveolar constrictive /ɹ/ with the Russian rolled /r/, owing to their familiarity with the rapid rolled or tapped sound in Russian pronunciation. For the English post-alveolar /ɹ/ at the beginning of a word or syllable, the tip of the tongue starts turned up and slightly back (the retroflexed position) and then lowers or uncurls, without touching the top of the mouth, with lips slightly rounded [16]. This contrasts with the Russian alveolar trill [r], where the tongue creates a rapid trill by contacting the roof of the mouth with the tongue tip. The phoneme /ɹ/ is widely recognized as one of the most challenging English sounds to articulate, posing difficulties even for native English speakers, let alone for EFL learners. Its complexity is such that it tends to be the last sound that native English speakers master during childhood [10]. Mastering the up and backward movement required for pronouncing /ɹ/ can be challenging, leading children to initially produce a "w" sound instead of an "r," as in "wabbit" or "wight" Correct articulation of /ɹ/ entails pursing the lips and allowing air to flow over the center and tip of the tongue without interruption. The tongue tip nearly, but not quite, touches the roof of the mouth during the /ɹ/ sound. For Russian beginners, it is advisable to incorporate "r"-pronunciation training with the "w" sound: learners may say the "w"-sound and hold it briefly, then immediately transitioning to the "r"-sound, as in "w" followed by /ɹ/ in run (i.e., w-Run). This method provides a structured approach to practicing the /ɹ/ sound by leveraging the similarities between the "w" and "r" sounds in terms of lip rounding and articulatory movement, thereby preventing a Russian /r/ flick. By gradually transitioning from /w/ to /ɹ/, learners can develop a better understanding of the tongue positioning and airflow required for accurate pronunciation. Additionally, there is a similar "r"-pronunciation training method with the

“er” sound, such as “er” followed by race (i.e., *errRace*) [25]. In this method, learners focus on the position of the tongue tip after finishing the “er” part, where they need to place their tongue before they begin the word “race.” This positioning will help them produce a natural “r” sound. By combining these two methods to practice the articulation of /r/, learners can benefit from a comprehensive approach to mastering the challenging articulation of /r/. At this stage, attention may be extended to the coda /r/ sound within the American English “r”-colored vowel sounds (/ɚ, ɜ, ɝ, ɛr, ər, ɪr, aɪr/). When /r/ follows a vowel in the same syllable, the vowel takes on some retroflex quality, commonly known as r-coloring or rhotic (= r-vocalizing), as exemplified by words such as ear [ɪə], cure [kjʊə], work [wɜ:k], and party [pa:ti] [27]. The central vowel schwa has two /r/-colored manifestations: [ɚ] in stressed and [ə] in unstressed syllables, for instance, herder [hɜ:də] (ibid.) Since all vowels become a schwa when reduced in unstressed syllables, [ə] is arguably the most distinctive sound in American pronunciation. To correctly pronounce the /ɚ/ sound, Russian learners should round their lips and curl the tip of their tongue back, with lips and tongue relaxed.

3.6. Voiceless Glottal Fricative /h/

In the language pair of Russian and English, one lacks certain phonemes entirely, potentially causing interference as the other language possesses the same phonemes. This observation remains accurate for the segment /h/. In English, /h/ is a phoneme, but Russian lacks a glottal fricative produced in the throat, akin to the English /h/. Russian learners of English have indeed struggle with mastering the correct use of the glottal fricative /h/. Russian learners of English or any language with /h/ as a phoneme may encounter difficulties acquiring this segment. Probably, the absence of an equivalent in the Russian phonological system, stereotypically, results in instances where /h/ is ignored or replaced with sounds like /x/, /k/, or the voiced version of /x/, transcribed as [ɣ] (ELT Concourse). The /x/ frequently substituted by Russians for the English /h/ is a velar fricative continuant, akin to the coda sound in the Scottish word “loch.” It is positioned more forward in the vocal tract than its English counterpart. The English /h/ is a strong or fortis voiceless glottal fricative produced further back in the vocal tract than the velar sound made when saying /x/, [ɣ], /k/ or /g/. Russian learners require training in its pronounced, which involves slight narrowing of the vocal folds, creating friction at the glottis and throughout the vocal tract. It is crucial to emphasize to Russian learners that they should be aware of where the phoneme is produced, specifically at the far back of the throat rather than with the vellum. Using a diagram to illustrate the spot in the vocal tract can be a helpful trick. On the other hand, some Russian learners may encounter the issue of over-pronouncing the sound as /x/ or even [ɣ], resulting in mispronunciations such as /^hxool/ for hole instead of /^hhool/. For a pedagogical strategy to address this issue and articulate the phoneme <h>, the basic exercise requires opening the mouth rather widely and exhaling breath rather deeply. For this purpose, it would be effective to instruct Russian learners to produce the tense vowel /ɑ/ and then slightly constrict the throat to create turbulent air. Alternatively, it is advisable to have learners relaxingly widen their mouths and pretend to blow warm breath on their freezing hands or fog up their eyeglasses for cleaning, releasing a puff of air. Let’s make a passing reference to the fact that Russian learners may produce the onset <h> in words like hour and heir(ess) articulately rather than rendering it mute.

4. CONCLUSION

The study has employed a contrastive analysis of English consonantal phonemes and their Russian counterparts, thoroughly examining the characteristics of both the English and Russian consonant systems and emphasizing the distinctions between them. It has also been investigating the difficulties and phoneme substitution errors encountered by Russian EFL learners when pronouncing English consonantal phonemes. Additionally, the study has been attempting to provide strategies for error correction and effective pedagogical approaches to reduce the likelihood of mispronouncing English consonants. To improve learners' conscious control over articulatory organs for reproducing new sounds, essential exercises focus on movements related to articulation manners, places, and lips and tongue movements. To correct any improper articulation habits and establish new, accurate muscle memories that are robust, learners then consciously adjust the position and shape of articulatory organs, with a mirror recommended for assistance in this process. Practicing English

phonemic sounds at the beginning, middle, and end of words contributes to increased comfort with the required mouth and tongue positions. During all these processes learners' auditory memory for the qualities of English phonemes will naturally be enhanced. They will come across thorough guidance to aid in producing English phonemes correctly by controlling the physical aspects involved in pronunciation, such as lip and tongue positioning.

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