

ENGLISH FRICATIVE ACQUISITION AMONG UZBEK EFL LEARNERS: A SYNTHESIS AND THEORETICAL REINTERPRETATION

Avazjon Aminjonov,
Acting Associate Professor
Kokand University, Uzbekistan
Email: aaaminjonov@kokanduni.uz

Annotation. This article re-examines previous findings on Uzbek English as a foreign language (EFL) learners' acquisition of English fricatives, with particular attention to interdental fricatives /θ/ and /ð/ and their relationship to alveolar and postalveolar fricatives. Rather than presenting a new experimental dataset, the article develops a professional synthesis and theoretical reinterpretation of two related studies: a focused 2024 study on the production and perception of English interdental fricatives by native Uzbek speakers and a later dissertation-based investigation of six English fricatives. The article compares the findings of these studies with broader research on L2 speech learning, markedness, orthographic influence, and the perception-production interface. The earlier study reported higher production than perception for /θ/, /ð/, /s/, and /z/, whereas the broader dissertation found that perception exceeded production across six fricatives. This apparent inconsistency is interpreted not as a contradiction, but as evidence that the perception-production relationship is sensitive to task design, phoneme scope, learner background, and the salience of orthographic information. The analysis argues that markedness affects Uzbek learners' production more strongly than perception, while near-sound availability and Uzbek orthographic transparency shape both substitution patterns and perceptual confusion. The article also discusses methodological development from a narrow interdental-fricative focus to a broader fricative-system approach, highlighting how Uzbek EFL pronunciation research has evolved from identifying errors toward explaining acquisition mechanisms. The paper concludes with implications for pronunciation teaching, curriculum design, and future research in Uzbekistan.

Keywords: Uzbek EFL learners, English fricatives, interdental fricatives, markedness, perception and production, orthographic influence, pronunciation teaching.

Annotatsiya. Mazkur maqolada o'zbek tili ona tili bo'lgan ingliz tilini chet tili sifatida o'rganuvchilarning (EFL) ingliz tilidagi sirg'aluvchi undoshlarni o'zlashtirishi bo'yicha avvalgi tadqiqotlar qayta ko'rib chiqiladi. Asosiy e'tibor tish oralig'ida hosil bo'ladigan /θ/ va /ð/ undoshlari hamda ularning alveolyar va postalveolyar sirg'aluvchi undoshlar bilan munosabatiga qaratilgan. Maqolada yangi eksperimental ma'lumotlar taqdim etilmaydi, balki o'zbek tili sohiblarining ingliz tilidagi interdental undoshlarni talaffuz qilishi va idrok etishiga bag'ishlangan 2024-yilgi tadqiqot hamda ingliz tilidagi oltita sirg'aluvchi undoshni qamrab olgan keyingi dissertatsiya tadqiqoti natijalari nazariy jihatdan umumlashtirilib, qayta talqin qilinadi. Ushbu tadqiqotlar natijalari ikkinchi til fonetikasi, belgilanganlik (markedness), orfografik ta'sir va idrok-talaffuz munosabatiga oid kengroq ilmiy izlanishlar bilan qiyoslanadi.

Dastlabki tadqiqotda /θ/, /ð/, /s/ va /z/ undoshlari bo'yicha talaffuz ko'rsatkichlari idrok ko'rsatkichlaridan yuqori ekanligi aniqlangan bo'lsa, keyingi keng qamrovli dissertatsiya tadqiqotida oltita sirg'aluvchi undosh bo'yicha idrok talaffuzdan ustun ekani qayd etilgan. Maqolada bu tafovut qarama-qarshilik sifatida emas, balki idrok va talaffuz o'rtasidagi munosabat topshiriq turi, fonemalar doirasi, o'quvchilar tajribasi hamda orfografik ma'lumotlarning sezilarli darajasiga bog'liq ekanligining dalili sifatida talqin qilinadi. Tahlillar shuni ko'rsatadiki, belgilanganlik omili o'zbek o'rganuvchilarining talaffuziga idrokka qaraganda kuchliroq ta'sir ko'rsatadi, o'zbek tilida o'xshash tovushlarning mavjudligi va yozuv tizimining shaffofligi esa tovushlarni almashtirish holatlari hamda perceptiv chalkashliklarni shakllantiradi. Shuningdek, maqolada interdental undoshlarga qaratilgan tor doiradagi yondashuvdan sirg'aluvchi undoshlar tizimini qamrab olgan kengroq yondashuvga o'tish jarayoni yoritilib, O'zbekistondagi EFL talaffuz tadqiqotlari xatolarni aniqlash bosqichidan ularning o'zlashtirilish mexanizmlarini tushuntirish bosqichiga o'tayotgani ko'rsatib beriladi. Tadqiqot yakunida

talaffuzni o'qitish, o'quv dasturlarini ishlab chiqish va kelgusidagi ilmiy izlanishlar uchun amaliy tavsiyalar beriladi.

Kalit so'zlar: *o'zbek EFL o'rganuvchilari, ingliz tilidagi sirg'aluvchi undoshlar, interdental undoshlar, belgilanganlik (markedness), idrok va talaffuz, orfografik ta'sir, talaffuzni o'qitish.*

Аннотация. *В данной статье проводится переосмысление ранее полученных результатов исследований, посвящённых освоению английских фрикативных согласных узбекскими изучающими английский язык как иностранный (EFL), с особым вниманием к межзубным фрикативам /θ/ и /ð/ и их связи с альвеолярными и постальвеолярными фрикативами. Вместо представления нового экспериментального материала статья предлагает профессиональный синтез и теоретическую интерпретацию двух взаимосвязанных исследований: специализированного исследования 2024 года, посвящённого восприятию и произношению английских межзубных фрикативов носителями узбекского языка, и более позднего диссертационного исследования, охватывающего шесть английских фрикативов.*

Результаты этих исследований сопоставляются с более широкими работами в области усвоения произношения второго языка (L2), теории маркированности, влияния орфографии и взаимосвязи между восприятием и произношением. Ранее исследование показало более высокие показатели произношения по сравнению с восприятием для звуков /θ/, /ð/, /s/ и /z/, тогда как более масштабное диссертационное исследование выявило, что восприятие превосходит произношение по всем шести фрикативам. Данное кажущееся противоречие интерпретируется не как несоответствие результатов, а как свидетельство того, что взаимосвязь между восприятием и произношением зависит от дизайна задания, набора изучаемых фонем, языкового опыта учащихся и степени значимости орфографической информации.

Анализ показывает, что маркированность оказывает более сильное влияние на произношение узбекских учащихся, чем на восприятие, тогда как наличие близких по звучанию фонем и прозрачность узбекской орфографии формируют как модели фонетических замен, так и случаи перцептивной путаницы. В статье также рассматривается методологическое развитие исследований — от узкой направленности на межзубные фрикативы к более широкому подходу, охватывающему всю систему английских фрикативов. Это демонстрирует эволюцию исследований произношения английского языка в Узбекистане: от выявления ошибок к объяснению механизмов языкового усвоения.

В заключение обсуждаются практические выводы для преподавания произношения, разработки учебных программ и дальнейших исследований в области обучения английскому языку в Узбекистане.

Ключевые слова: *узбекские изучающие английский язык как иностранный (EFL), английские фрикативные согласные, межзубные фрикативы, маркированность, восприятие и произношение, влияние орфографии, обучение произношению.*

Introduction. English pronunciation remains a difficult area for many Uzbek EFL learners, even when they demonstrate strong knowledge of grammar, vocabulary, and reading. Among the most persistent problems are English fricatives, especially the interdental sounds /θ/ and /ð/, which are absent from the Uzbek phonemic inventory. These sounds are often replaced with more familiar Uzbek-related sounds such as /s/, /z/, /t/, or /d/. Such substitutions are not merely accidental pronunciation mistakes; they are systematic outcomes of cross-linguistic influence, markedness, orthographic interpretation, and the learner's attempt to map unfamiliar L2 sounds onto existing L1 categories.

The purpose of this article is therefore fivefold: to compare previous findings on Uzbek EFL learners' acquisition of English fricatives; to reanalyze earlier data from a new theoretical perspective; to develop a discussion based on the dissertation's broader

findings; to show how the research idea evolved from an interdental-fricative problem to a general fricative-acquisition problem; and to discuss implications, limitations, methodological developments, and possible applications to the Uzbek higher education context.

Research on L2 speech acquisition has long debated whether perception precedes production or whether learners can sometimes produce sounds they do not perceive accurately. Studies such as Best (1995) and Flege (1995) suggest that learners interpret L2 sounds through the phonological categories of their L1, which can either facilitate or block accurate acquisition. When a target sound is close to an L1 category but not identical to it, learners may treat it as an existing native sound. This is particularly relevant for Uzbek learners because English interdental fricatives are often approximated through alveolar sounds already available in Uzbek.

Markedness Theory provides an additional explanation. Marked sounds are generally less frequent cross-linguistically, more complex, or less accessible to learners because they are absent from the first language (Eckman, 1977; Haspelmath, 2006). English /θ/ and /ð/ are marked for many learners, not only Uzbek speakers. Brannen (2011) and Mousa (2014) report that learners from different L1 backgrounds frequently replace interdental fricatives with sounds such as /s/, /z/, /t/, /d/, /f/, or /v/. The Uzbek pattern, therefore, belongs to a wider typological tendency, but it has its own local explanation: Uzbek has /s/ and /z/, while it lacks /θ/ and /ð/.

The 2024 article focused on this specific contrast. It compared interdental fricatives with alveolar fricatives and showed that Uzbek learners frequently substituted /θ/ with /s/ and /ð/ with /z/ (Aminjonov et al., 2024). This finding supports the near-sound hypothesis: when learners encounter an unfamiliar L2 sound, they often select the closest L1 or familiar L2 category. Importantly, the study also emphasized the role of English orthography. Uzbek writing is relatively transparent; English writing is not. The spelling “th” represents two sounds, /θ/ and /ð/, while “s” and “z” also do not always correspond simply to one sound in English. As a result, learners may be confused not only by sound, but also by the mismatch between written and spoken forms.

The dissertation expanded this earlier focus by including not only /θ/, /ð/, /s/, and /z/, but also /ʃ/ and /ʒ/ (Aminjonov, 2025). This methodological expansion is important because it changes the theoretical meaning of the research. The issue is no longer only whether Uzbek learners can produce and perceive interdental sounds. The broader question becomes how Uzbek learners acquire an entire class of English fricatives when some sounds are familiar, some are absent, and some appear only in limited or borrowed contexts. In the dissertation, the inclusion of /ʒ/ was particularly useful because it showed that difficulty is not limited to the complete absence of a sound. A sound may also be difficult if it is rare, marginal, or unstable in the learners’ L1 experience.

Literature Review. The present article is written as a theoretical and synthetic article rather than a new empirical report. It draws on two connected research works. The first is the published study by Aminjonov et al. (2024), which examined the production and perception of English interdental fricatives /θ/ and /ð/ in comparison with alveolar fricatives /s/ and /z/ among twenty Uzbek EFL learners. That study found production accuracy to be slightly higher than perception accuracy and emphasized the role of orthographic inconsistency and near sounds. The second is Aminjonov's (2025) dissertation, which expanded the scope to six English fricatives: /θ/, /ð/, /s/, /z/, /ʃ/, and /ʒ/. The dissertation reported higher perception accuracy than production accuracy and interpreted the results through Markedness Theory and the perception-production relationship.

At first glance, these two studies may appear to point in different directions. The 2024 article suggests that Uzbek learners may produce certain target fricatives better than they perceive them, whereas the dissertation indicates that perception generally precedes production. However, this article argues that the two findings should be read developmentally rather than oppositionally. The difference reflects the evolution of the research design, the expansion of the sound inventory, and the increased theoretical attention to markedness, acoustic analysis, and phoneme-specific patterns. In this sense, the dissertation does not cancel the findings of the earlier article; rather, it extends and reinterprets them within a broader L2 phonological framework.

Research Methodology. This article does not introduce new participants or new experimental measurements. Instead, it reinterprets previous findings through a synthesis-based methodology. The method can be described as secondary analysis, theoretical synthesis, and contextual application. Secondary analysis is used because the article revisits existing results from Aminjonov et al. (2024) and Aminjonov (2025). Theoretical synthesis is used because those findings are compared with major concepts in L2 phonetic acquisition, including markedness, near-sound substitution, orthographic influence, and the perception-production interface. Contextual application is used because the findings are discussed in relation to pronunciation teaching in Uzbekistan.

The earlier 2024 study involved twenty third-year English-major students. The participants completed listening discrimination and pronunciation tasks involving /θ/, /ð/, /s/, and /z/. The production task was based on word reading, while the perception task used minimal-pair discrimination. The study was valuable because it created an empirical basis for discussing Uzbek learners' interdental-fricative difficulties, an area that had received limited attention in the literature.

The dissertation adopted a broader and more developed design. It investigated forty upper-intermediate to advanced Uzbek learners and examined six English fricatives. Production data were analyzed acoustically with Praat, using spectrograms, voicing bars, and intensity patterns. The dissertation also applied paired t-tests and Pearson correlation

analysis to compare perception and production. This methodological development is significant because it moved the research from descriptive comparison toward statistical and acoustic explanation.

The present synthesis therefore treats the two studies as stages in the same research trajectory. The 2024 article can be seen as the diagnostic stage: it identifies the specific problem of interdental fricatives and the influence of near sounds and orthography. The dissertation can be seen as the explanatory stage: it broadens the sound inventory, formalizes the role of markedness, and examines whether perception and production develop together. From this perspective, the development of the research itself becomes part of the article's argument.

Analysis and Results. The most important point of comparison concerns the direction of the perception-production relationship. Aminjonov et al. (2024) reported that production accuracy was higher than perception accuracy for the target interdental and alveolar fricatives. This result challenged the common assumption that perception normally precedes production. However, Aminjonov (2025) found the opposite pattern when the sound set was expanded to six fricatives: perception accuracy exceeded production accuracy. Instead of treating these results as contradictory, they can be interpreted as evidence that perception-production patterns are not fixed. They are shaped by phoneme type, task format, orthographic salience, and the learner's level of phonological awareness.

In the 2024 study, learners may have performed relatively better in production partly because the pronunciation task involved known words and visible orthographic forms. In a word-reading task, learners can rely on memorized pronunciations, classroom repetition, and visual cues. The availability of spelling may support production even when perception is weak. For instance, a learner may pronounce a familiar word containing "th" with approximate accuracy because it has been practiced in class, but still fail to discriminate /ð/ from /z/ in minimal-pair listening. Thus, production accuracy in such a task may reflect a mixture of articulatory ability, lexical familiarity, and orthographic memory.

In the dissertation, the broader inclusion of /ʃ/ and /ʒ/ and the use of acoustic analysis allowed a more systematic picture to emerge. Perception accuracy was higher overall, but production remained weaker, especially for marked sounds. This suggests that Uzbek learners may build auditory categories for English fricatives before they develop stable articulatory control. The weak positive correlation between perception and production further shows that better perception can support production, but does not guarantee it. A learner may know what the sound should be, but still fail to produce it accurately because the articulatory gesture is unfamiliar.

Markedness also requires reinterpretation. The earlier study presented /θ/ and /ð/ as marked sounds and showed their vulnerability to substitution. The dissertation strengthened this claim by showing that markedness affects production more strongly than

perception. This is theoretically important. If markedness affected perception and production equally, learners would perform poorly in both domains. However, the dissertation suggests a more nuanced pattern: learners can often perceive marked sounds reasonably well, especially after phonetic exposure, but still struggle to produce them. Therefore, markedness should not be viewed as a general difficulty factor; it should be understood as a domain-sensitive factor that places heavier pressure on production than perception.

The substitution patterns also become more meaningful when viewed across both studies. The 2024 study emphasized /θ/ to /s/ and /ð/ to /z/ substitution. The dissertation added /ʒ/ to /dʒ/ as another important pattern. Together, these substitutions indicate that Uzbek learners do not replace difficult sounds randomly. They select sounds that are close in voicing, place, or manner of articulation, or sounds that are more available in their phonological experience. This supports a feature-based interpretation of L1 influence: learners preserve some phonetic features while changing others. For example, replacing /ð/ with /z/ preserves voicing and frication but shifts the place of articulation from interdental to alveolar.

The Uzbek findings correspond to several broader tendencies in L2 phonetic acquisition. First, the difficulty of /θ/ and /ð/ is not unique to Uzbek learners. Studies reviewed in Aminjonov et al. (2024) and Aminjonov (2025) show that interdental fricatives create difficulties for learners from many L1 backgrounds, including Korean, Chinese, Spanish, Dutch, Russian, and Japanese speakers. For example, Zhang and Xiao (2014) discuss Chinese learners' difficulties with paired English fricatives, while Brannen (2011) and Mousa (2014) show that learners from different L1 backgrounds use different substitutions depending on the available sounds in their native phonological systems.

Second, the Uzbek results contribute to the debate on perception and production. Some studies support perception-first development, while others show production advantages in certain conditions. Previous studies reviewed in Aminjonov et al. (2024) show that perception may precede production in some learner groups, while Seo and Lim (2016) suggest that learner proficiency can change the relationship. The Uzbek studies fit this mixed literature. The 2024 article resembles studies where production can appear stronger than perception, especially under word-reading or classroom-trained conditions. The dissertation aligns more closely with perception-first models, especially when a larger sound inventory and acoustic analysis are used.

Third, the Uzbek case adds important evidence to research on orthographic influence. Bassetti, Escudero, and Hayes-Harb (2015) argue that written forms can influence L2 phonological development. This is especially relevant in Uzbekistan because learners are accustomed to a more transparent relationship between letters and sounds. English orthography may therefore mislead learners more strongly than it does learners whose L1

writing systems are already less phonemic. In this context, spelling does not simply represent pronunciation; it becomes an active factor in pronunciation learning.

Finally, the Uzbek data contribute to Markedness Theory by suggesting that markedness should be interpreted in relation to the learner's full phonological ecology. A sound may be marked because it is typologically rare, absent in Uzbek, orthographically confusing, difficult to articulate, or weakly represented in classroom input. These dimensions do not always produce the same effect. For Uzbek learners, markedness appears to be strongest in production, moderate in perception, and intensified by orthographic ambiguity.

One important contribution of this research trajectory is the movement from error identification to mechanism explanation. Earlier discussions of Uzbek learners' pronunciation often listed difficult English sounds and described substitutions. Such work is useful but limited. It tells teachers what students mispronounce, but not why they mispronounce it. The studies discussed here move beyond listing errors by connecting them to markedness, near-sound availability, orthographic influence, acoustic features, and perception-production relations.

A theoretical model emerging from this synthesis can be summarized as follows. First, when an English fricative has a stable equivalent or near-equivalent in Uzbek, learners are more likely to produce it accurately. This explains stronger performance on /s/, /z/, and /ʃ/. Second, when a fricative is absent from Uzbek but has a close substitute, learners are likely to replace it with the closest available sound. This explains /θ/ to /s/ or /t/ and /ð/ to /z/ or /d/. Third, when a sound is marginal or appears mainly through borrowed words, as in the case of /ʒ/, learners may perceive it but produce it through a more familiar category such as /dʒ/. Fourth, orthographic inconsistency can either support or distort production depending on whether the learner has memorized the word or is trying to decode it from spelling.

This model explains why perception and production may not always move together. Perception depends heavily on auditory discrimination and category formation, while production depends on articulatory control, motor habit, and feedback. A student may hear /θ/ as different from /s/, but still produce /s/ because the tongue movement required for /θ/ is not automatic. Similarly, a student may produce a practiced word correctly, but fail to identify the same sound in a listening task because the sound category is not yet stable. Therefore, perception and production are related, but they are not identical skills.

The evolution from the 2024 study to the dissertation also shows a shift from a contrast-based approach to a system-based approach. The contrast-based approach asks whether Uzbek learners confuse /θ/ with /s/ or /ð/ with /z/. The system-based approach asks how English fricatives as a class are reorganized in the Uzbek learner's interlanguage. This second approach is theoretically richer because it allows researchers to compare

marked and unmarked sounds, examine correlation patterns, and identify the different roles of perception and production.

The findings have clear implications for English language teaching in Uzbekistan. First, pronunciation instruction should not treat /θ/ and /ð/ as isolated pronunciation problems. These sounds should be taught as part of a larger fricative system that includes /s/, /z/, /ʃ/, and /ʒ/. Students need to understand not only how /θ/ differs from /s/, but also how voicing, place of articulation, and airflow operate across the fricative system.

Second, teachers should separate perception training from production training while connecting them in the same lesson. Perception training can include minimal-pair discrimination, identification tasks, and listening to words in different positions. Production training should include articulatory explanation, mirror practice, slow repetition, controlled word lists, sentence practice, and communicative tasks. Since perception does not automatically produce accurate articulation, students need both types of training.

Third, orthography should be addressed explicitly. Teachers should explain that the spelling “th” has two pronunciations and that English spelling cannot always be decoded according to Uzbek reading habits. Learners should be taught to associate sounds with phonetic symbols and auditory models, not only with letters. This is especially important in university-level phonetics and phonology courses, where students can learn to connect spelling, phonemic transcription, and acoustic evidence.

Fourth, pronunciation teaching should use technology where possible. Praat is particularly useful for university students because it allows them to see spectrograms, voicing bars, and intensity differences. Visual acoustic feedback can make abstract pronunciation differences more concrete. Even if Praat is not used in every classroom, teacher-training programs can introduce it as a diagnostic tool.

Fifth, these findings can be applied to the new context of Uzbek higher education curriculum development. English Philology and Foreign Language programs should include short but regular pronunciation modules rather than treating pronunciation as a minor part of speaking classes. A practical module could focus on one sound group per week, combining perception, production, spelling awareness, and communicative practice.

Conclusion. This article has re-examined Uzbek EFL learners’ acquisition of English fricatives by comparing earlier findings, reinterpreting previous data, and developing a broader theoretical discussion based on the dissertation. The central argument is that the 2024 article and the dissertation should not be treated as conflicting studies, but as two stages in the development of a research program. The earlier article identified the specific problem of interdental fricatives, near-sound substitution, and orthographic confusion. The dissertation expanded this problem into a wider analysis of six English fricatives, markedness, acoustic evidence, and the perception-production interface.

The synthesis shows that Uzbek learners' pronunciation difficulties are systematic and theoretically meaningful. Interdental fricatives are difficult because they are absent from Uzbek, typologically marked, orthographically confusing, and close enough to existing alveolar sounds to invite substitution. The voiced postalveolar fricative /ʒ/ adds another dimension, showing that even marginal or borrowed sounds may create production difficulty. Across the studies, markedness appears to affect production more strongly than perception, while perception and production remain related but partially independent.

For teaching practice, the findings suggest that pronunciation instruction in Uzbekistan should be more systematic, phonetics-based, and integrated into regular language courses. Teachers should combine perception and production practice, explicitly address English orthography, focus on the fricative system rather than isolated sounds, and use acoustic tools where appropriate. For research, future studies should examine broader learner groups, additional sound classes, spontaneous speech, and longitudinal development.

Overall, the development from the 2024 article to the dissertation demonstrates the evolution of an academic idea: from identifying a pronunciation problem to explaining the mechanisms behind it. This evolution provides a strong foundation for further research on Uzbek EFL phonological acquisition and for improving pronunciation pedagogy in Uzbekistan.

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