

Changes in pronunciation performance after structured tongue-twister practice among fourth-grade EFL learners in Ambato, Ecuador

Cambios en el desempeño de la pronunciación después de la práctica estructurada con trabalenguas en estudiantes de inglés como lengua extranjera de cuarto grado en Ambato, Ecuador

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Abstract

Recurring difficulties in producing the English phonemes /θ/, /ʃ/, and /ʒ/ were observed among the participating fourth-grade EFL learners. This study examined changes in learners' pronunciation performance after a structured tongue-twister intervention focused on these target phonemes. A quantitative one-group quasi-experimental pretest–posttest design was used with 25 students from a private educational institution in Ambato, Ecuador. The intervention consisted of ten 25-minute classroom sessions conducted over three weeks, progressing from target-word practice to increasingly complex tongue twisters. Pronunciation was assessed through an adapted listener-based rubric measuring comprehensibility, accentedness, and intelligibility. Data were analyzed using descriptive statistics and paired-samples t tests. Mean comprehensibility decreased from 3.64 to 2.56, accentedness decreased from 3.64 to 2.48, and intelligibility increased from 55.50% to 78.50%. Differences were statistically significant across all three dimensions ($p < .001$). Overall, learners demonstrated more favorable pronunciation performance after the intervention. However, because the study included only one group and no control group, the observed changes cannot be attributed exclusively to tongue-twister practice. Keywords: Pronunciation development; Tongue twisters; EFL learners; Phonological acquisition; Pronunciation instruction.

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Resumen

Se observaron dificultades recurrentes en la producción de los fonemas ingleses /θ/, /ʃ/ y /ɹ/ entre los estudiantes de cuarto grado participantes. Este estudio examinó los cambios en el desempeño de la pronunciación después de una intervención estructurada con trabalenguas centrada en estos fonemas. Se utilizó un diseño cuantitativo cuasiexperimental de un solo grupo con pretest y postest, con la participación de 25 estudiantes de una institución educativa privada de Ambato, Ecuador. La intervención consistió en diez sesiones de clase de 25 minutos desarrolladas durante tres semanas, con una progresión desde la práctica de palabras objetivo hasta trabalenguas de dificultad creciente. La pronunciación se evaluó mediante una rúbrica adaptada basada en la percepción del oyente, que midió comprensibilidad, influencia percibida del acento e inteligibilidad. Los datos se analizaron mediante estadística descriptiva y pruebas t para muestras relacionadas. La media de comprensibilidad disminuyó de 3,64 a 2,56, la influencia percibida del acento disminuyó de 3,64 a 2,48 y la inteligibilidad aumentó de 55,50 % a 78,50 %. Las diferencias fueron estadísticamente significativas en las tres dimensiones ($p < .001$). En conjunto, los estudiantes mostraron un desempeño de pronunciación más favorable después de la intervención. Sin embargo, debido a que el estudio incluyó un solo grupo y no contó con un grupo de control, los cambios observados no pueden atribuirse exclusivamente a la práctica con trabalenguas.

Palabras clave: Desarrollo de la pronunciación; Trabalenguas; Aprendices de EFL; Adquisición fonológica; Enseñanza de la pronunciación.

Introduction

Pronunciation plays an important role in communicative competence because it influences how clearly a spoken message is understood. Learners may possess adequate grammatical and lexical knowledge and still experience difficulties in oral communication when their pronunciation requires considerable effort from the listener. Previous research has shown that focused pronunciation instruction can improve speech intelligibility and contribute to more effective second-language communication (Saito, 2012). Similarly, instructional practices that combine listening, repetition, guided production, and feedback can help learners recognize unfamiliar sounds and develop more accurate articulatory patterns (Celce-Murcia et al., 2010).

Pronunciation can be particularly challenging for learners of English as a foreign language when the sound systems of English and their first language differ. Spanish-speaking learners may rely on familiar pronunciation patterns when producing English sounds that are absent from or articulated differently in Spanish. In the present study, particular attention was given to the phonemes /θ/, /ʃ/, and /ɹ/, which had been identified by the teacher-researcher as recurring areas of difficulty among the participating students. Inaccurate production of these phonemes may reduce speech clarity and require greater listener effort when interpreting individual words and oral messages.

Contemporary approaches to pronunciation teaching increasingly emphasize intelligibility and comprehensibility rather than the elimination of a foreign accent or complete conformity to a native-speaker model (Galante & Piccardo, 2022). From this perspective, effective pronunciation instruction should support learners in producing speech that can be understood with reasonable ease while recognizing that accentedness may remain part of their oral production. This orienta-

tion is particularly relevant in EFL contexts, where students may have limited opportunities to interact with English outside the classroom.

Tongue twisters provide a practical form of controlled pronunciation practice because they require repeated production of similar sound sequences and sustained attention to articulation, rhythm, and accuracy (Cook, 2001). Their repetitive structure allows learners to practice target phonemes in different lexical combinations and to gradually increase the complexity of oral production. When incorporated into a structured instructional sequence, tongue twisters can therefore serve as focused pronunciation activities rather than merely as recreational language exercises.

Although pronunciation instruction has been widely examined in second-language research, it remains useful to investigate how specific classroom practices function within particular educational contexts. In the participating class, recurring difficulties were observed in the production of /θ/, /ʃ/, and /ɪ/, which led to the development of a structured intervention in which students progressed from the practice of individual target words to phrases and increasingly complex tongue twisters. The intervention was designed to provide repeated and guided opportunities to practice these phonemes within a classroom setting.

Using pretest and posttest pronunciation assessments, the study examined changes in learners' comprehensibility, accentedness, and intelligibility following the instructional intervention. Therefore, the study aimed to examine changes in the pronunciation performance of fourth-grade EFL learners after structured tongue-twister practice in a private educational institution in Ambato, Ecuador.

Research Question

RQ1. What changes occurred in fourth-grade EFL learners' comprehensibility, accentedness, and intelligibility after a structured tongue-twister intervention focused on the phonemes /θ/, /ʃ/, and /ɪ/?

Objectives

General objective

To examine changes in fourth-grade EFL learners' comprehensibility, accentedness, and intelligibility after a structured tongue-twister intervention focused on the phonemes /θ/, /ʃ/, and /ɪ/.

Specific objectives

1. To assess learners' initial pronunciation performance in terms of comprehensibility, accentedness, and intelligibility.

2. To implement a structured sequence of tongue-twister activities focused on the production of the phonemes /θ/, /ʃ/, and /ɹ/.
3. To compare learners' pretest and posttest pronunciation performance after the instructional intervention.

Theoretical Framework

Pronunciation is a central component of spoken communication in a second or foreign language. It involves both segmental features, such as consonants and vowels, and suprasegmental features, including stress, rhythm, and intonation. Effective pronunciation does not necessarily require learners to reproduce native-like speech. Rather, its primary function is to support communication by making spoken language sufficiently clear and understandable to the listener. From this perspective, pronunciation performance can be examined through comprehensibility, intelligibility, and accentedness, which are related but conceptually distinct dimensions.

The present study is grounded in three complementary theoretical perspectives: Articulatory Phonology, the Speech Learning Model, and the Output Hypothesis. Together, these perspectives provide a framework for understanding how learners physically produce unfamiliar speech sounds, how first-language phonetic categories may influence second-language pronunciation, and how repeated oral production and feedback may contribute to the development of new pronunciation patterns.

Articulatory Phonology

Articulatory Phonology conceptualizes speech production as a coordinated system of physical gestures involving structures such as the tongue, lips, jaw, and vocal tract. Browman and Goldstein (1992), explain that speech sounds emerge through the temporal coordination of these articulatory movements. From this perspective, accurate pronunciation depends not only on learners' knowledge of how a sound should be produced but also on their ability to coordinate the physical movements required to articulate it consistently.

This perspective is particularly relevant to the present study because tongue twisters require learners to repeat sound sequences while coordinating multiple articulatory movements. The phonemes /θ/, /ʃ/, and /ɹ/ were selected because they had been identified by the teacher-researcher as recurring areas of difficulty among the participating students. Their articulation requires specific configurations of the tongue, lips, teeth, and airflow that may differ from familiar patterns in Spanish.

For example, the production of /θ/ requires the tongue to be positioned between or close to the teeth, whereas /ʃ/ involves a different configuration of the tongue and lips. Similarly, the

English phoneme /ɹ/ differs from the Spanish rhotic sounds commonly represented by /r/ and /r/. These articulatory differences help explain why repeated and guided practice may be necessary when learners are developing control over unfamiliar English sounds.

Within this framework, tongue twisters can be understood as controlled pronunciation activities that provide repeated opportunities to coordinate and refine articulatory gestures. Repetition across words, phrases, and increasingly complex sound sequences may help learners become more aware of the movements required to produce the target phonemes.

The Speech Learning Model

The Speech Learning Model explains second-language speech development in relation to the phonetic categories that learners have already established in their first language. Flege (1995) proposes that learners may perceive unfamiliar second-language sounds through existing first-language categories. When a new sound is interpreted as sufficiently similar to a familiar sound, learners may rely on the existing category rather than develop a distinct phonetic representation.

The revised Speech Learning Model proposed by Flege and Bohn (2021), further emphasizes that second-language speech development can continue throughout the learning process. Learners may establish or modify phonetic categories when they receive sufficient exposure and opportunities for perception and production. From this perspective, progress depends partly on learners' ability to distinguish target-language sounds from similar sounds in their first language.

This model is relevant to the production of /θ/, /ʃ/, and /ɹ/ among the participants in the present study. If learners interpret these sounds through familiar Spanish phonetic categories, substitutions or less accurate productions may occur. Structured pronunciation practice can therefore direct learners' attention toward the differences between the target sounds and their possible first-language approximations.

In the intervention, learners first practiced the target phonemes in individual words and later produced them in phrases and increasingly complex tongue twisters. This progression provided repeated opportunities to distinguish and produce the selected English sounds in different phonetic combinations.

The Output Hypothesis

The Output Hypothesis highlights the role of active language production in second-language development. Swain (2005), argues that producing language can help learners notice differences between what they intend to communicate and what they are able to produce. Output therefore functions not only as the result of learning but also as part of the learning process.

Several functions of output are particularly relevant to pronunciation instruction. First, oral production may help learners become aware of difficulties in their pronunciation. Second, re-

peated production allows them to test different ways of articulating a sound and compare their performance with the target form. Third, feedback may promote reflection and adjustment when learners recognize aspects of their production that require modification.

Tongue twisters provide repeated opportunities for this type of productive practice. As learners attempt to pronounce similar sound sequences, they may identify difficulties, adjust their articulation, and attempt new productions. Teacher feedback can further support this process by directing attention to relevant articulatory features such as tongue position, airflow, voicing, or lip placement. The importance of repeated production is also consistent with research on speech motor control, which suggests that practice contributes to the development and refinement of the movements involved in speech production (Guenther, 2006).

Theoretical Integration

The three theoretical perspectives provide a complementary basis for understanding the instructional intervention used in this study. Articulatory Phonology explains the physical coordination required to produce the target phonemes. The Speech Learning Model accounts for the influence of first-language phonetic categories and the possibility of developing or modifying second-language sound representations. The Output Hypothesis explains how active production, noticing, feedback, and adjustment may support pronunciation development.

Within this integrated framework, tongue twisters are understood as structured pronunciation activities rather than as simple recreational exercises. Their pedagogical value lies in the repeated production of specific phonemic patterns, the attention they direct toward articulation, and the opportunities they provide for feedback and self-correction.

The structured progression used in the study—from individual target words to phrases and increasingly complex tongue twisters—is consistent with this theoretical orientation. Previous research cited in the manuscript also indicates that explicit and systematic pronunciation instruction can support changes in second-language speech production (Saito & Plonsky, 2019). However, the effectiveness of a specific classroom activity should be examined within its instructional context rather than assumed in advance.

State of the Art

Research on second-language pronunciation has gradually shifted from an emphasis on native-like speech toward the development of clear and understandable communication. Contemporary approaches increasingly recognize that learners can communicate effectively while retaining features of their first-language accent. Within this perspective, pronunciation instruction tends to prioritize intelligibility and comprehensibility rather than the complete elimination of accented speech. This orientation is particularly relevant in EFL contexts, where learners may have limited opportunities for exposure to English outside the classroom.

Research on explicit pronunciation instruction has generally reported favorable changes in learners' oral performance. Derwing et al. (1998), found that focused pronunciation instruction can contribute to clearer speech and more effective oral communication. Their findings suggest that pronunciation should not be treated as an isolated mechanical exercise, but rather as part of broader communicative development. Similarly, Thomson and Derwing (2015), concluded that structured pronunciation practice can support improvements in second-language speech when instruction is sustained and connected to specific learning goals.

Saito and Plonsky (2019), further examined the effects of pronunciation instruction through a meta-analytic perspective. Their findings indicate that improvements in second-language pronunciation are influenced by multiple factors, including instructional design, practice conditions, assessment procedures, and learner characteristics. This evidence suggests that repetition alone is unlikely to account for pronunciation development. Structured practice is more meaningful when learners receive clear models, focused guidance, opportunities for production, and feedback that helps them recognize and modify inaccurate pronunciation.

The assessment of pronunciation has also evolved in response to the growing emphasis on communicative effectiveness. Munro and Derwing (1995), distinguish three related but conceptually different dimensions: accentedness, comprehensibility, and intelligibility. Accentedness refers to the extent to which a speaker's pronunciation differs from an expected pronunciation pattern, whereas comprehensibility concerns the degree of effort required by a listener to understand speech. Intelligibility, in contrast, refers to the extent to which the spoken message is actually understood. These dimensions should not be treated as interchangeable because a learner may retain a noticeable foreign accent while still producing speech that is both comprehensible and intelligible.

This distinction has important implications for pronunciation instruction and assessment. The primary objective of pronunciation teaching does not necessarily need to be the elimination of a learner's first-language accent. Instead, instruction can focus on facilitating clearer communication and reducing the effort required from the listener. Galante and Piccardo (2022), support an approach centered on intelligibility and comprehensibility, in which accent is considered one aspect of speech rather than the sole indicator of pronunciation ability. Within this perspective, pronunciation assessment should focus on communicative effectiveness rather than complete conformity to a native-speaker model.

Research has also examined how pronunciation instruction can be incorporated into classroom practice. Celce-Murcia et al. (2010), propose an instructional progression that includes perception, controlled production, guided practice, and communicative use. Such a progression allows learners to first recognize a target sound, then practice its articulation, and subsequently produce it in increasingly complex contexts. This type of structured sequence is particularly relevant to the present study because the intervention progressed from individual words to phrases and tongue twisters of increasing articulatory complexity.

Explicit explanation may also support pronunciation learning. Couper (2011), emphasizes the importance of helping learners understand what aspects of their pronunciation require modification and how those adjustments can be made. In pronunciation instruction, this may involve guidance related to tongue position, airflow, voicing, and other articulatory features. Feedback is therefore an important component of instruction because it provides learners with information that can help them identify inaccurate productions and make more deliberate adjustments.

Classroom-based research has further shown that pronunciation teaching may involve a range of techniques, including repetition, sound discrimination, modeling, corrective feedback, reading aloud, and communicative practice. Foote et al. (2016), observed that pronunciation work is often integrated into broader language lessons rather than taught as an entirely separate component. Although this integration may facilitate the inclusion of pronunciation in regular classroom instruction, it also highlights the importance of maintaining a clear and systematic instructional sequence.

Within this broader instructional context, tongue twisters can be understood as a form of controlled pronunciation practice. Their repetitive sound patterns require learners to attend to articulation, accuracy, rhythm, and coordination. They may also introduce an element of challenge into pronunciation activities. However, their pedagogical value should not be assumed solely because they involve repetition. Their usefulness depends on factors such as the selection of appropriate target phonemes, the progression of difficulty, the quality of teacher guidance and feedback, and the relationship between controlled practice and more complex oral production.

Within the literature reviewed in this study, less direct evidence was identified regarding the structured use of tongue twisters with young Spanish-speaking EFL learners, particularly when instruction focuses on specific English phonemes. The present study therefore examines changes in comprehensibility, intelligibility, and accentedness following a structured intervention centered on /θ/, /ʃ/, and /ɹ/. Rather than assuming that tongue twisters are inherently effective, the study compares learners' pronunciation performance before and after the instructional sequence and examines their pedagogical usefulness within a specific EFL classroom context in Ambato, Ecuador.

Methodology

Research Design

This study employed a quantitative one-group quasi-experimental pretest–posttest design to examine changes in the pronunciation performance of fourth-grade learners of English as a foreign language. The same group of students was assessed before and after a structured classroom intervention based on tongue-twister practice.

The design allowed the researcher to compare learners' comprehensibility, accentedness, and intelligibility at two measurement points. No control or comparison group was included. Therefore, the study focused on changes observed within the participating group and did not seek to establish that the intervention was the sole cause of those changes.

Participants and Setting

The study was conducted at Nuevo Mundo Educational Center, a private educational institution located in Ambato, Ecuador. The participants were 25 fourth-grade students from Class E.

The class was selected from three existing fourth-grade groups because the teacher-researcher had observed recurring difficulties in the students' production of English phonemes, words, and phrases. The sampling procedure was non-probabilistic and involved an intact classroom group.

Students were included if they were enrolled in the selected class, attended lessons regularly, were willing to participate, and had written authorization from their legal guardians. Students who did not provide the required authorization were excluded from the study.

Pronunciation Assessment Instrument

Pronunciation performance was assessed using an adapted listener-based rubric based on the framework proposed by Munro and Derwing (1995). The instrument evaluated three related but distinct dimensions: comprehensibility, accentedness, and intelligibility.

Comprehensibility referred to the amount of effort required by the evaluator to understand the student's oral production. Accentedness represented the perceived influence of the student's first-language accent when producing the selected English phonemes. Intelligibility referred to the proportion of target words correctly recognized by the evaluator.

Comprehensibility and accentedness were assessed using five-point scales. Both dimensions followed the same scoring direction, with lower scores representing more favorable performance and higher scores indicating greater listener difficulty or stronger perceived accent influence.

Intelligibility was calculated using eight target words containing the phonemes /θ/, /ʃ/, and /ɪ/: *three, think, thirty, she, shell, shoe, rabbit, and run*. The intelligibility percentage was calculated by dividing the number of correctly recognized words by eight and multiplying the result by 100.

For descriptive interpretation in this study, intelligibility scores were classified as high (80%–100%), moderate (50%–79%), or low (0%–49%). The same rubric and scoring criteria were applied during both the pretest and posttest. Students' oral productions were recorded and evaluated by the researcher.

Table 1. Summary of the pronunciation assessment instrument

Dimension	Assessment criterion	Scoring and interpretation
Comprehensibility	Effort required to understand the student's production of words and tongue twisters containing the target phonemes	1 = Very easy to understand; 2 = Easy to understand; 3 = Moderately difficult to understand; 4 = Difficult to understand; 5 = Very difficult to understand
Accentedness	Perceived influence of the student's first-language accent when producing the target English phonemes	1 = Minimal accent influence; 2 = Slight accent influence; 3 = Moderate accent influence; 4 = Strong accent influence; 5 = Very strong accent influence
Intelligibility	Number of eight target words correctly recognized by the evaluator	Correctly recognized words ÷ 8 × 100. High = 80%–100%; Moderate = 50%–79%; Low = 0%–49%

Source: adapted from the framework proposed by Munro and Derwing (1995).

Instrument Review

Before its application, the pronunciation rubric was reviewed by three educators whose professional experience was related to language teaching and educational research. They evaluated the clarity of the instructions, the relevance of the assessment criteria, the wording of the descriptors, the interpretation of the scales, and the visual organization of the instrument.

The reviewers identified ambiguous descriptions and recommended the use of a shorter rating scale. Based on their observations, unclear wording was revised, the organization of the rubric was improved, and the scale was reduced to five points. The final instrument used a consistent scoring direction in which a score of 1 represented the most favorable performance and a score of 5 represented the least favorable performance for both comprehensibility and accentedness.

Instructional Intervention

The instructional intervention lasted three weeks and consisted of ten 25-minute classroom sessions focused on the production of the English phonemes /θ/, /ʃ/, and /ɪ/. Four sessions were conducted during each of the first two weeks, followed by two sessions during the third week. These phonemes had previously been identified by the teacher-researcher as recurring areas of difficulty among the participating students.

Each session followed a structured five-part sequence. Approximately 5 minutes were devoted to presenting the target words, 5 minutes to watching a short pronunciation video, 5 minutes to completing a worksheet, 5 minutes to practicing the tongue twister as a group, and 5 minutes to individual pronunciation as an exit ticket.

During group practice, students repeated each tongue twister three times: slowly, at medium speed, and quickly. Each student then pronounced the tongue twister individually. Students who experienced difficulties practiced again in pairs before repeating the individual pronunciation task.

The teacher introduced the target words, presented the pronunciation video, guided the worksheet activity, modeled the tongue twister, and monitored both group and individual practice. When pronunciation errors occurred, the teacher modeled the appropriate production, explained the position of the tongue, lips, or teeth when necessary, and asked students to repeat the relevant sound or word. Students who continued to experience difficulty practiced again in pairs before repeating the exit-ticket activity.

The intervention followed a progressive sequence. Sessions 1–3 focused on /θ/, sessions 4–6 on /ʃ/, sessions 7–9 on /ɹ/, and session 10 combined the three target phonemes. The activities progressed from individual target words to phrases and increasingly complex tongue twisters. For /θ/, practice progressed from three, think to Three think thirty things and then to Three think thirty things on Thursday. For /ʃ/, students progressed from she, shell, shoe to She shows a shell and a shoe and then to She shows shells and shoes in a shiny shop. For /ɹ/, practice progressed from rabbit, run to A rabbit runs and then to A rabbit runs and runs around. The final session combined the three target sounds in the sequence Three think thirty things while she shows shells and a rabbit runs.

Procedure

The study was conducted in three phases: pre-intervention assessment, instructional intervention, and post-intervention assessment.

During the first phase, written authorization was obtained from the students' legal guardians. The guardians were informed about the purpose of the research and the voluntary nature of participation. After the required authorizations had been obtained, students completed the pretest. Their pronunciation was recorded while they produced words and tongue twisters containing the target phonemes /θ/, /ʃ/, and /ɹ/.

During the second phase, the 25 participants completed the ten-session instructional intervention described above. The activities progressed from individual target words to phrases and increasingly complex tongue twisters.

During the third phase, students completed the posttest. Their oral production was recorded and evaluated using the same pronunciation dimensions and scoring criteria applied during the pretest. Scores from both assessments were then compared to identify changes in comprehensibility, accentedness, and intelligibility.

Data Analysis

The data were analyzed using descriptive and inferential statistics. Means and standard deviations were calculated for comprehensibility, accentedness, and intelligibility. Individual changes and the distribution of participants across the intelligibility categories were also examined.

Because the same 25 students completed both the pretest and posttest, paired-samples *t* tests were used to compare the two measurement points. Differences were calculated as posttest minus pretest, and statistical significance was established at $p < .05$.

For comprehensibility and accentedness, negative differences represented more favorable posttest performance because lower scores indicated less listener effort and less perceived first-language accent influence. For intelligibility, positive differences represented improvement because they indicated a higher percentage of correctly recognized target words.

The statistical values reported in the Results section were calculated from the individual participant scores included in the study data.

Ethical Considerations

Participation was voluntary and required written authorization from the students' legal guardians. Guardians were informed about the purpose and general procedures of the study. Pronunciation recordings and assessment results were treated as confidential and were used only for academic purposes related to the research.

Results

The analysis compared the pronunciation performance of the 25 participants before and after the structured tongue-twister intervention. All students included in the study completed both the pretest and posttest.

Comprehensibility and accentedness were measured using five-point scales, in which lower scores represented more favorable performance. Intelligibility was expressed as the percentage of eight target words correctly recognized by the evaluator.

Descriptive Results

Table 2 presents the means, standard deviations, and mean changes observed between the pretest and posttest for the three pronunciation dimensions.

Table 2. Descriptive Statistics for Pretest and Posttest Pronunciation Performance

Pronunciation dimension	Pretest M	Pretest SD	Posttest M	Posttest SD	Mean change
Comprehensibility	3.64	0.81	2.56	0.87	-1.08
Accentedness	3.64	0.86	2.48	0.92	-1.16
Intelligibility (%)	55.50	16.96	78.50	18.23	+23.00

Source: prepared by the author. Mean change was calculated as posttest minus pretest. Lower scores represented more favorable performance in comprehensibility and accentedness, whereas higher percentages represented better intelligibility.

The mean comprehensibility score decreased from 3.64 in the pretest to 2.56 in the posttest, representing a mean change of -1.08. Because lower scores indicated lower listener effort, this change reflected more favorable posttest performance.

The mean accentedness score decreased from 3.64 to 2.48, representing a mean change of -1.16. According to the scoring direction of the instrument, the lower posttest score indicated less perceived influence of the students' first-language accent when producing the target English phonemes. This finding refers specifically to the pronunciation tasks included in the assessment and should not be interpreted as the elimination of the students' accents.

Mean intelligibility increased from 55.50% in the pretest to 78.50% in the posttest, representing an increase of 23 percentage points. According to the categories established for descriptive interpretation in the study, the posttest group mean remained within the moderate-intelligibility range because the high category began at 80%. Nevertheless, the posttest mean was close to this threshold and represented a greater proportion of correctly recognized target words.

Changes Across Individual Participants

Individual participant results also showed differences between the two measurement points.

For comprehensibility, 24 of the 25 students obtained a lower and more favorable posttest score, whereas one student maintained the same score. No participant obtained a less favorable posttest result.

For accentedness, 20 students obtained lower and more favorable posttest scores, while five maintained the same score. No participant obtained a higher, less favorable posttest score.

All 25 participants increased their intelligibility percentages. In the pretest, two students were classified within the high-intelligibility category, 16 within the moderate category, and seven within the low category. In the posttest, 14 students reached the high-intelligibility category and 11 remained within the moderate category. No participant was classified within the low-intelligibility range after the intervention.

Although the posttest group mean of 78.50% remained within the moderate range, the individual classifications showed that more than half of the participants reached the high-intelligibility category.

Inferential Results

Paired-samples *t* tests were conducted to determine whether the differences between the pretest and posttest scores were statistically significant.

Table 3. Paired-samples *t*-test results

Pronunciation dimension	Mean difference	<i>t</i>	<i>df</i>	<i>p</i>
Comprehensibility	−1.08	−10.95	24	< .001
Accentedness	−1.16	−7.25	24	< .001
Intelligibility (%)	+23.00	10.82	24	< .001

Source: prepared by the author. Differences were calculated as posttest minus pretest. Negative differences in comprehensibility and accentedness indicate more favorable posttest performance, whereas a positive difference in intelligibility indicates a greater percentage of correctly recognized target words.

Comprehensibility scores decreased significantly from the pretest to the posttest, $t(24) = -10.95$, $p < .001$. This result indicated that students' oral production required less effort from the evaluator during the posttest.

Accentedness scores also showed a statistically significant reduction, $t(24) = -7.25$, $p < .001$. According to the scoring direction of the instrument, this difference represented less perceived influence of the students' first-language accent during production of the target English phonemes.

Intelligibility increased significantly between the two assessments, $t(24) = 10.82$, $p < .001$. The positive difference reflected an increase in the percentage of target words correctly recognized by the evaluator.

Overall, the descriptive and inferential results showed more favorable posttest performance across all three assessed dimensions. Students' pronunciation required less listener effort, showed less perceived first-language accent influence, and included a higher percentage of correctly recognized target words after the instructional sequence.

These results describe changes within the participating group. Because the study did not include a control or comparison group, the findings do not establish that tongue-twister practice was the sole cause of the observed differences.

Discussion

This study examined changes in the pronunciation performance of 25 fourth-grade EFL learners following a structured classroom intervention based on tongue-twister practice. The findings showed more favorable posttest performance across the three assessed dimensions: comprehensibility, accentedness, and intelligibility. Students' oral production required less effort from the evaluator, showed less perceived influence of their first-language accent, and included a higher proportion of correctly recognized target words.

The reduction in comprehensibility scores is particularly relevant because this dimension reflects the amount of effort required by a listener to understand spoken production rather than the complete absence of pronunciation errors. Munro and Derwing (1995), distinguish comprehensibility from intelligibility, explaining that comprehensibility concerns how easy or difficult speech is to understand, whereas intelligibility refers to the extent to which the spoken message is actually understood. In the present study, the improvement observed in both dimensions suggests that students' pronunciation became easier for the evaluator to process and that a greater proportion of the selected target words was successfully recognized.

The intelligibility results provide further evidence of this change. Mean intelligibility increased from 55.50% in the pretest to 78.50% in the posttest, and all participants obtained higher posttest percentages. Although the posttest group mean remained below the 80% threshold established for the high-intelligibility category, the number of students classified within this category increased from two to 14. At the same time, no participant remained in the low-intelligibility category. This pattern indicates that the observed change was distributed across the group rather than being limited to only a small number of participants.

The accentedness findings should be interpreted with particular caution. The decrease in mean accentedness from 3.64 to 2.48 indicated that the evaluator perceived less influence of the students' first-language accent when they produced the target words and phonemes included in the assessment. However, this result should not be interpreted as the elimination of accented speech or as evidence that students developed native-like pronunciation. Contemporary approaches to pronunciation teaching increasingly prioritize intelligibility and comprehensibility rather than complete conformity to a native-speaker model (Galante & Piccardo, 2022). From this perspective, the observed reduction in accentedness is better understood as a change in the pronunciation of the target sounds assessed in this study rather than as the disappearance of learners' first-language accent.

The findings are broadly consistent with previous research showing that focused pronunciation instruction can produce measurable changes in second-language speech (Saito & Plonsky, 2019). Nevertheless, the results should not be attributed to repetition alone. The intervention followed a structured progression in which students first practiced target words and later produced phrases and increasingly complex tongue twisters. Instruction also included pronunciation mo-

dels, guided practice, teacher feedback, group repetition, individual production, and additional pair practice when students experienced difficulty. This instructional sequence is consistent with approaches to pronunciation teaching that move from controlled production toward increasingly complex oral practice (Celce-Murcia et al., 2010).

The pedagogical value of tongue twisters in the present study therefore lies not simply in their repetitive nature but in the way they were incorporated into a planned instructional sequence. The activities concentrated practice on the phonemes /θ/, /ʃ/, and /ʒ/, which had previously been identified by the teacher-researcher as recurring areas of difficulty. Across the intervention, students progressed from individual target words to longer and more complex sound combinations. This structure provided repeated opportunities to practice the selected phonemes while receiving guidance and corrective feedback.

At the same time, the findings should remain limited to the dimensions that were actually assessed. The study did not measure motivation, confidence, enjoyment, anxiety, cognitive development, or general fluency. Therefore, it cannot be concluded that the students improved because the activities were enjoyable or that the intervention produced changes in these additional areas. The evidence obtained in this study is restricted to comprehensibility, accentedness, and intelligibility.

Several methodological limitations must also be considered. The study involved one intact class of 25 students from a single private educational institution, and the participants were selected through a non-probability procedure. In addition, no control or comparison group was included. Consequently, other factors, such as continued exposure to regular English instruction or increased familiarity with the assessment task, cannot be excluded as possible contributors to the observed changes.

Another limitation concerns the assessment process. The researcher both implemented the instructional intervention and evaluated the pronunciation recordings, which may have influenced the ratings. Furthermore, the posttest was administered after the instructional sequence, so the study does not provide evidence about whether the observed changes were maintained over time. These limitations reinforce the need to interpret the findings as evidence of within-group change rather than as proof that tongue-twister practice alone caused the improvement.

Future research could address these limitations by including larger and more diverse samples, control or comparison groups, independent evaluators, and delayed posttests. It would also be valuable to examine each target phoneme separately, compare tongue twisters with other pronunciation strategies, and investigate whether improvements observed in controlled pronunciation tasks transfer to spontaneous oral communication. Student self-assessment could also be explored as a complementary source of information.

Conclusion

This study examined changes in the pronunciation performance of 25 fourth-grade EFL learners following a structured tongue-twister intervention focused on the phonemes /θ/, /ʃ/, and /ɪ/. The findings showed more favorable posttest performance in comprehensibility, accentedness, and intelligibility. Students' oral production required less listener effort, showed less perceived influence of their first-language accent, and included a higher proportion of correctly recognized target words after the instructional sequence.

These findings answer the research question by demonstrating measurable differences between the pretest and posttest across the three assessed dimensions. In the context of this study, tongue twisters functioned as structured pronunciation activities rather than as isolated recreational exercises. Their use involved progressive practice from individual words to more complex sound combinations, together with teacher guidance, feedback, group repetition, individual production, and additional practice when difficulties occurred. For this reason, the observed changes should be associated with the complete instructional sequence rather than with repetition alone.

The study contributes classroom-based evidence regarding the use of tongue twisters with young EFL learners. The intervention addressed pronunciation difficulties previously identified by the teacher-researcher and provided systematic practice with the target phonemes /θ/, /ʃ/, and /ɪ/. Its principal pedagogical contribution was to transform a commonly used recreational activity into a structured pronunciation exercise connected to specific learning objectives.

The findings should nevertheless be interpreted within the limitations of the research design. The study involved one intact group from a single private educational institution, did not include a control or comparison group, and relied on pronunciation ratings completed by the researcher. Consequently, the results cannot establish that the intervention was the sole cause of the observed changes, nor can they be generalized to other educational contexts without caution.

Future research should include larger and more diverse samples, control or comparison groups, independent evaluators, and delayed posttests. Further studies could also examine each target phoneme separately, compare tongue twisters with other pronunciation strategies, and evaluate whether improvements observed in controlled pronunciation activities transfer to spontaneous oral communication.

References

- Browman, C. P., & Goldstein, L. (1992). Articulatory phonology: An overview. *Phonetica*, 49(3–4), 155–180. <https://doi.org/10.1159/000261913>
- Celce-Murcia, M., Brinton, D. M., & Goodwin, J. M. (2010). *Teaching pronunciation: A course book and reference guide*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511733735>
- Cook, V. (2001). *Second language learning and language teaching*. Arnold.

- Couper, G. (2011). What makes pronunciation teaching work? Testing for the effect of two variables: Social dynamics and teacher explanation. *Language Teaching Research*, 15(2), 159–182. <https://doi.org/10.1177/1362168810388693>
- Derwing, T. M., Munro, M. J., & Wiebe, G. (1998). Evidence in favor of a broad framework for pronunciation instruction. *Language Learning*, 48(3), 393–410. <https://doi.org/10.1111/0023-8333.00047>
- Flege, J. E. (1995). Second language speech learning: Theory, findings, and problems. In W. Strange, (ed.). *Speech perception and linguistic experience: Issues in cross-language research* (pp. 233–277). York Press.
- Flege, J. E., & Bohn, O.-S. (2021). The revised Speech Learning Model (SLM-r). In R. Wayland, (ed.). *Second language speech learning: Theoretical and empirical progress* (pp. 3–83). Cambridge University Press. <https://doi.org/10.1017/9781108886901.002>
- Foote, J., Trofimovich, P., Collins, L., & Urzúa, F. (2016). Pronunciation teaching practices in communicative second language classes. *The Language Learning Journal*, 44(2), 181–196. <https://doi.org/10.1080/09571736.2013.784345>
- Galante, A., & Piccardo, E. (2022). Teaching pronunciation: Toward intelligibility and comprehensibility. *ELT Journal*, 76(3), 375–386. <https://doi.org/10.1093/elt/ccab060>
- Guenther, F. H. (2006). Cortical interactions underlying the production of speech sounds. *Trends in Cognitive Sciences*, 10(7), 344–352. <https://doi.org/10.1016/j.tics.2006.03.006>
- Munro, M. J., & Derwing, T. M. (1995). Foreign accent, comprehensibility, and intelligibility in the speech of second language learners. *Language Learning*, 45(1), 73–97. <https://doi.org/10.1111/j.1467-1770.1995.tb00963.x>
- Saito, K. (2012). Effects of instruction on L2 pronunciation development: A synthesis of 15 quasi-experimental intervention studies. *TESOL Quarterly*, 46(4), 842–854.
- Saito, K., & Plonsky, L. (2019). Effects of second language pronunciation teaching revisited: A proposed measurement framework and meta-analysis. *Language Learning*, 69(3), 652–708. <https://doi.org/10.1111/lang.12345>
- Swain, M. (2005). The output hypothesis: Theory and research. In E. Hinkel, (ed.). *Handbook of research in second language teaching and learning* (pp. 471–483). Lawrence Erlbaum.
- Thomson, R. I., & Derwing, T. M. (2015). The effectiveness of L2 pronunciation instruction: A narrative review. *Language Teaching*, 48(3), 326–344. <https://doi.org/10.1017/S0261444814000491>

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