Jupiter: Jurnal Pendidikan Terapan
Homepage : https://journal.diginus.id/jupiter/index
Email: jurnalpendidikanterapan@gmail.com.

p-ISSN : 2985-3214; e-ISSN : 2964-3171
Jupiter, Vol. 4, No. 4, September 2026
Page 820-834

Deep Learning Pedagogy for Arabic Pronunciation: Effects of Progressive Phonetic Instruction among Junior High School Learners

Muslimin[1*], Nurdiniawati[2], Sri Wahyuningsih[3]
[1,2,3]Universitas Muhammadiyah Bima, Bima, Indonesia

ARTICLE INFO

Article history:
Submitted: June 13, 2026
Final Revised: August 28, 2026
Accepted: September 18, 2026
Published: September 30, 2026

Keywords:
Arabic Phonetic;
Deep Learning-Based;
Instructional Materials;
Pronunciation.

ABSTRACT

Purpose: This study investigates the effectiveness of deep learning-based Arabic phonetic instructional materials in improving students' pronunciation proficiency at an Integrated Islamic Junior High School in Bima. **Methods:** The research applied a quantitative quasi-experimental approach using a one-group pre-test–post-test design. The study involved 33 seventh-grade students at Al-Mahmud Integrated Islamic Junior High School in Bima, Indonesia, who were purposively selected as research participants. The instructional materials were developed based on deep learning principles emphasizing meaningful cognitive engagement, scaffolded phonological progression, auditory discrimination, guided articulation, repetition, contextualized pronunciation practice, and corrective feedback. Data were collected through questionnaires, then analyzed using descriptive statistics and paired sample t-test analysis. **Findings:** The findings revealed a significant improvement in students' Arabic pronunciation skills following the implementation of the developed instructional materials. The Shapiro–Wilk normality test yielded a value of $W=0.953$ with a significance level of $p=0.163$, indicating that the data met the normality assumption, as the significance value was greater than 0.05. Furthermore, the paired-samples t-test revealed a statistically significant difference in students' pronunciation performance before and after the implementation of the instructional materials, with a result of $t(32)=11.006$ and $p<0.001$. The students' mean score increased from 54.00 in the pre-test to 74.15 in the post-test, representing an average improvement of 20.15 points. In addition, the effect size analysis using Cohen's dz yielded a value of 1.92, indicating a large effect. These findings confirm that the developed instructional materials were effective in improving students' Arabic pronunciation skills. The improvement was particularly evident in students' ability to pronounce difficult Arabic phonemes such as /ع/, /ث/, /ظ/, /ض/, and /ق/. **Research Implications:** The study implies that deep learning-based phonetic instruction can strengthen articulatory awareness, pronunciation accuracy, and communicative confidence through systematic and meaningful learning experiences. **Originality:** The originality of this research lies in integrating deep learning pedagogy with progressive Arabic phonetic instruction to create an innovative cognitive-phonological framework for Arabic language learning in Islamic junior secondary education contexts.

Doi: https://doi.org/10.61255/jupiter.v4i4.1458

INTRODUCTION

Pronunciation is a fundamental component of communicative competence in second and foreign language learning because it directly affects intelligibility, comprehensibility, and effective interaction (Levis et al., 2016; Levis, 2005). Inaccurate pronunciation may cause misunderstanding and reduce learners' confidence in oral communication (Winke & Brunfaut, 2021). This issue is particularly important in Arabic, whose phonological system contains several sounds that are unfamiliar to non-native learners (Al-Ani, 2014), including emphatic consonants (/ش/, /ض/, /ط/, /ز/), pharyngeal sounds (/ع/, /خ/), and uvular and velar sounds (/ق/, /خ/, /غ/). These phonemes can be difficult for learners whose first language lacks comparable articulatory features, often resulting in phonological transfer and persistent pronunciation errors (De Angelis & Selinker, 2001). Recent syntheses also indicate that pronunciation instruction can improve targeted segmental and suprasegmental performance when learning outcomes are measured appropriately (Saito & Plonsky, 2019; Saito, 2021).

Previous studies have documented persistent difficulties in Arabic pronunciation, particularly in producing emphatic and pharyngeal sounds (Muslimin et al., 2021). Such difficulties are pedagogically significant because phonetic competence provides a foundation for speaking and listening proficiency (Al-Harkani, 2020). Nevertheless, pronunciation has received relatively limited attention in many Arabic language classrooms, including Islamic junior high schools in Indonesia, where instruction tends to emphasize grammar, vocabulary, and reading comprehension (Abicandra, 2022; Sudarmono, 2018). The problem is compounded by the limited availability of specialized instructional materials that provide systematic pronunciation practice. Conventional materials often present sounds in isolation and rely on repetitive exercises without sufficient contextualized practice, meaningful engagement, and corrective feedback (Muhammad & Sidik, 2025). Arabic pronunciation instruction has also been examined in relation to learner beliefs, classroom practices, and comprehensibility, highlighting the need for relevant pronunciation materials (Shehata, 2024).

This problem is also evident at an Integrated Islamic Junior High School in Bima, where preliminary observations identified difficulties in producing several Arabic sounds. Students frequently substituted /ط/ for /ت/, /ض/ for /د/, /ث/ for /س/, and /ع/ for أ glottal stop. These difficulties reflect the influence of familiar articulatory patterns when learners encounter unfamiliar phonological features (Bahruddin & Halomoan, 2019). The findings indicate a need for instructional materials that move beyond mechanical pronunciation drills toward systematic, progressive, and meaningful phonetic learning.

One pedagogical approach that may address these limitations is deep learning pedagogy, which emphasizes meaningful engagement, active knowledge construction, integration of new information with prior knowledge, and application across contexts (Marton & Säljö, 1976). Unlike surface learning based primarily on memorization, deep learning encourages learners to understand and actively apply knowledge. In pronunciation instruction, these principles can be operationalized through auditory discrimination, guided articulation, repeated practice, contextualized activities, feedback, and reflection (Celce-Murcia et al., 2010). Such activities can help learners develop greater phonological awareness and articulatory control. Empirical work comparing perception-based and production-based instruction likewise suggests that instructional focus may influence which pronunciation dimensions improve (Alghazo et al., 2023; Darcy et al., 2021).

The effectiveness of this approach can be further supported through carefully designed instructional materials. Language materials should respond to learners' needs, balance attention to form and meaning, and provide systematic opportunities for practice and feedback (Newton & Nation, 2020). For Arabic phonetic instruction, a progressive phonological sequence, moving from relatively familiar to more complex sounds, can provide appropriate scaffolding for learners' developing articulatory competence (Ellis & Sagarra, 2010). Multimedia and digital resources may further enhance this process by providing interactive practice and opportunities for repeated exposure and feedback (Chapelle, 2003; Godwin-Jones, 2021). Recent reviews further report beneficial outcomes from mobile-assisted pronunciation practice and computer-assisted pronunciation training (Almusharraf et al., 2024; Metruk, 2024; Tseng et al., 2022).

Despite these theoretical and pedagogical possibilities, empirical evidence on the application of deep learning pedagogy specifically to Arabic phonetic instruction at the secondary-school level remains limited. Existing research has largely examined pronunciation difficulties, general language skills, or learners in higher education, leaving insufficient evidence concerning the effectiveness of structured deep-learning-based phonetic materials for younger Arabic learners. This gap is particularly relevant in Islamic junior high school contexts, where pronunciation instruction remains comparatively underdeveloped.

Therefore, this study investigates the effectiveness of Deep Learning Pedagogy for Arabic Pronunciation: Effects of Progressive Phonetic Instruction among Junior High School Learners. Using a quantitative quasi-experimental design, the study examines changes in students' pronunciation performance before and after the implementation of the

instructional materials. The study is expected to provide empirical evidence for the use of meaningful, progressive, and learner-engaged phonetic instruction and to contribute to the development of more systematic approaches to Arabic pronunciation teaching.

METHOD

This study employed a quantitative approach using a quasi-experimental one-group pre-test–post-test design (Creswell & Creswell, 2018; Fraenkel et al., 2019). It was conducted at Al-Mahmud Integrated Islamic Junior High School, Bima, Indonesia, involving 33 seventh-grade students served as the units of analysis. The participants were selected from three available grade levels, namely Grade VII, Grade VIII, and Grade IX, at Al-Mahmud Integrated Islamic Junior High School in Bima, Indonesia. The researchers purposively selected Grade VII as the research group.

The intervention involved researcher-developed Arabic phonetic instructional materials grounded in deep learning pedagogy. It was implemented over six instructional sessions, with each session lasting 35 minutes. The instructional activities included phonetic awareness, auditory sound discrimination, guided articulation, repetitive pronunciation practice, contextualized learning activities, and corrective feedback. These activities were designed to provide progressive and scaffolded learning experiences in recognizing and producing Arabic sounds.

Data were collected using an Arabic pronunciation test as the primary instrument. The pronunciation test was administered before and after the intervention to assess changes in students' pronunciation performance. Both assessments were evaluated using a structured scoring rubric. Phonetic components were treated as assessment items nested within student-level data.

The data were analyzed using descriptive statistics and a paired-samples t-test at a significance level of $\alpha = 0.05$. The analysis involved 33 students (N = 33), with 32 degrees of freedom (df = 32). Before conducting the paired-samples t-test, the normality of the difference scores between the post-test and pre-test was examined. The analysis focused on identifying statistically significant differences in students' pronunciation performance before and after the intervention. Because the study did not include a control group, the findings were interpreted as evidence of changes in students' pronunciation performance following the intervention rather than as definitive evidence of a causal relationship. The sequence of the research procedures is illustrated in Figure 1.

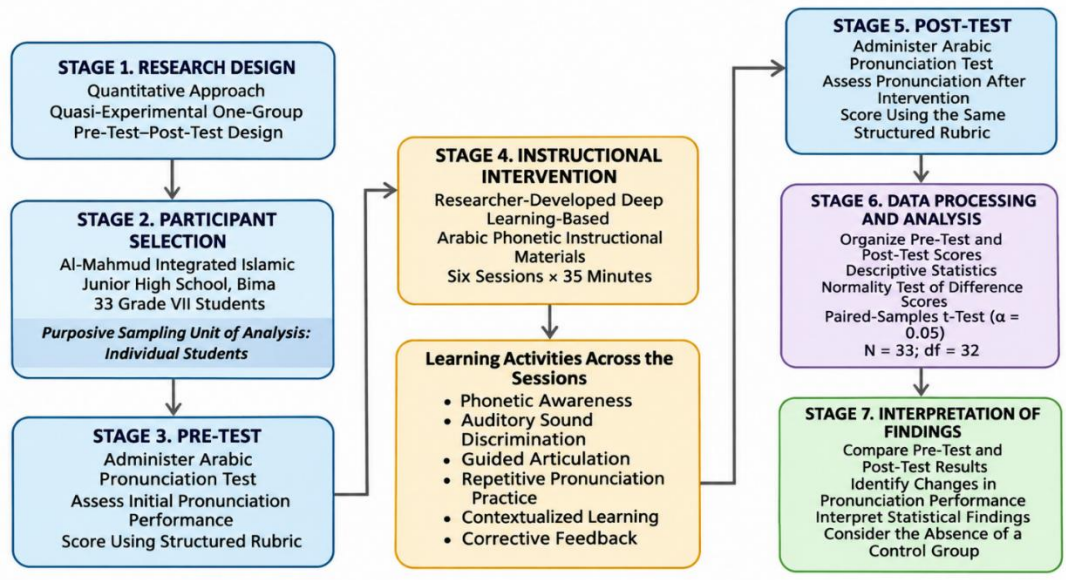


Figure 1. Research Design and Implementation Procedures

Figure 1 presents the sequence of procedures implemented in this study, beginning with participant selection and pre-test administration, followed by the six-session instructional intervention and post-test administration. The collected scores were subsequently processed and analyzed using descriptive statistics, a normality test of the difference scores, and a paired-samples t-test. This figure provides a concise overview of the research implementation and the sequence of data analysis.

RESULTS

Instructional Intervention

The intervention involved 33 seventh-grade students at Al-Mahmud Integrated Islamic Junior High School in Bima, Indonesia. It was conducted over six instructional sessions, with each session lasting 35 minutes, resulting in a total intervention duration of 210 minutes. The instructional materials were organized progressively, beginning with relatively simple Arabic sounds and moving toward phonemes with more complex articulatory characteristics. The learning activities were designed to help students recognize, distinguish, understand, and accurately produce Arabic sounds through systematic pronunciation practice.

1. Stages of Instructional Implementation

   The instructional intervention consisted of five main stages, as follows.

   a. Orientation and Activation of Prior Knowledge

      At the initial stage, the teacher introduced the learning objectives and connected the instructional materials to students' prior knowledge of Arabic letters and sounds. Students were encouraged to identify and recognize Arabic sounds through listening activities and pronunciation demonstrations provided by the teacher. This stage aimed to establish students' readiness to learn and activate their existing knowledge before proceeding to more complex phonetic materials.

   b. Introduction and Understanding of Phonetic Characteristics

      At this stage, the teacher introduced the phonetic characteristics of Arabic letters, including their articulation points (*makhārij al-ḥurūf*) and distinctive features (*ṣifāt al-ḥurūf*). Students listened to pronunciation examples, observed differences among Arabic phonemes, and identified the articulatory characteristics of each sound. These activities were intended to develop students' understanding of how Arabic sounds are produced rather than simply memorizing or imitating their pronunciation.

   c. Sound Discrimination and Articulation Practice

      Students participated in activities designed to distinguish Arabic sounds with similar or contrasting articulatory characteristics. They practiced listening to, comparing, and producing individual phonemes through guided articulation and repeated pronunciation exercises. Particular attention was given to phonemes that were relatively difficult for students to pronounce, such as /ع/, /ث/, /ظ/, /ض/, and /ق/. During this stage, the teacher provided immediate corrective feedback to help students identify and improve their pronunciation errors.

   d. Contextualized Pronunciation Practice

      At this stage, students applied their phonetic knowledge by pronouncing syllables, words, phrases, and simple sentences. The activities were conducted individually and in groups to provide opportunities for repeated practice and meaningful language use. The teacher monitored students' pronunciation performance and provided feedback on articulation accuracy. This stage aimed to help students apply their understanding of Arabic phonetic characteristics in increasingly complex linguistic contexts.

   e. Reflection and Reinforcement

      At the final stage, students evaluated their pronunciation performance by identifying the sounds they had successfully mastered and those that still required improvement. The teacher provided feedback, reinforced previously learned materials, and encouraged students to practice difficult sounds independently. This stage was intended to strengthen students' awareness of their pronunciation development and support continuous improvement.

2. Distribution of Instructional Materials and Learning Activities

   The intervention was organized into six instructional sessions, with the distribution of materials and activities presented in the following Table 1.

Table 1. Distribution of Instructional Materials and Learning Activities Across Six Sessions

Session	Instructional Materials	Main Learning Activities
1	Introduction to Arabic phonetics and basic sounds	Identifying Arabic sounds, listening to pronunciation models, and practicing basic articulation
2	Pronunciation of Arabic letters with relatively simple articulatory characteristics	Sound discrimination, imitation, and repeated pronunciation practice
3	Pronunciation of Arabic letters with similar phonetic characteristics	Comparing sounds, practicing guided articulation, and receiving corrective feedback
4	Pronunciation of Arabic letters with complex articulatory characteristics	Practicing articulation points and distinctive features, particularly difficult phonemes

5	Arabic suprasegmental features	Practicing long and short vowels, *tashdīd*, *sukūn*, and intonation
6	Integration and application of phonetic skills	Pronouncing words, phrases, and sentences, followed by evaluation and reflection

3. Allocation of Instructional Time

Each instructional session lasted 35 minutes and was divided into five learning activities. The time allocation is presented in Table 2.

Table 2. Time Allocation for Each Stage of the Instructional Intervention

Instructional Stages	Time Allocation
Orientation and activation of prior knowledge	5 minutes
Introduction and understanding of phonetic characteristics	8 minutes
Sound discrimination and articulation practice	10 minutes
Contextualized pronunciation practice	8 minutes
Reflection and reinforcement	4 minutes
Total	**35 minutes**

Overall, the instructional intervention was designed to develop students' Arabic pronunciation skills through a systematic, progressive, active, and reflective learning process. The integration of *deep learning* principles into Arabic phonetic instruction was expected to help students not only produce Arabic sounds more accurately but also understand the phonetic characteristics and articulatory processes underlying their production.

Pre-Test and Post-test Results

To determine the effectiveness of applying Arabic phonetics teaching materials based on deep learning on improving the phonetics of students at the Bima Integrated Islamic Junior High School, the researcher conducted a pre-test and post-test in a large group with *seventh-grade students* at the school. The pre-test aimed to assess the students' proficiency and ability to pronounce Arabic sounds before the application of the developed teaching materials, while the post-test aimed to assess the students' proficiency and ability after the application of the developed teaching materials.

1. Pre-test score

After the limited pilot study, the researcher implemented the developed textbook with students at Al-Muhammad Islamic Intermediate School in Bima as the research sample. Before teaching Arabic phonetics using the textbook authored by the researcher, a pre-test was administered. The results of the pre-test are as follows:



Figure 2. Pre-test Score

The pre-test results provide a baseline assessment of students' Arabic phonetic proficiency prior to the implementation of the deep learning–based instructional materials. The findings reveal that the participants demonstrated a relatively low level of pronunciation competence, with a grand mean score of 54, representing 64% of the maximum attainable score. The total score obtained by the students was 1,782, indicating that substantial deficiencies existed in both segmental and suprasegmental aspects of Arabic pronunciation. These results suggest that the students entered the instructional program with limited mastery of Arabic phonological features and required systematic intervention to improve their pronunciation skills.

The distribution of achievement categories further illustrates the students' initial phonetic difficulties. Only 18% of the assessed phonetic items were categorized as Excellent, while 27% were classified as Good. In contrast, 39% of the items fell within the Very Low category, representing the largest proportion of the assessment outcomes. Additionally, 6% were classified as Low and 9% as Fair. This pattern indicates that students' pronunciation competence was concentrated primarily in a limited number of familiar phonetic elements, whereas a substantial proportion of Arabic sounds remained inadequately mastered. The predominance of the Very Low category highlights the urgent need for targeted phonetic instruction and articulatory training.

Analysis of individual phonemes reveals a clear distinction between familiar and unfamiliar sounds. High scores were achieved in phonemes such as ل (92%, ر (93%), م (94%), ن (96%), ب (90%), س (90%). These sounds are relatively easier for Indonesian learners because they possess articulatory characteristics that are comparable to those found in the learners' native language. Consequently, positive transfer from the first language appears to facilitate accurate pronunciation of these phonemes.

Conversely, students experienced substantial difficulties with several uniquely Arabic phonemes. The lowest scores were recorded for ظ (31%), ث (27%), ض (24%), ز (19%), ه (36%), ش (33%), ع (38%). These phonemes require articulatory movements involving emphatic, interdental, pharyngeal, and fricative features that are largely absent in Indonesian phonology. The low achievement levels observed in these sounds indicate limited articulatory awareness and insufficient exposure to authentic Arabic pronunciation patterns.

The results also reveal weaknesses in suprasegmental aspects of pronunciation. While students achieved moderate scores in أصوات قصيرة (71%), أصوات طويلة (68%), and سكون (76%), considerably lower performance was observed in تشديد (52%) and تنغيم (29%). These findings suggest that students encountered greater challenges in controlling stress, emphasis, vowel length, and intonation patterns than in producing isolated phonemes. Since suprasegmental features contribute significantly to intelligibility and communicative effectiveness in Arabic, the low scores indicate a need for instructional approaches that integrate prosodic awareness with phonetic training.

From a pedagogical perspective, the pre-test findings provide strong empirical justification for the implementation of specialized phonetic instructional materials. The dominance of low and very low achievement categories, combined with the poor performance on difficult Arabic phonemes and prosodic features, suggests that conventional instructional practices were insufficient for developing accurate pronunciation. Therefore, a structured instructional framework emphasizing phonological progression, auditory discrimination, guided articulation, repetitive practice, and corrective feedback was necessary to address these deficiencies. The pre-test results consequently establish a critical benchmark against which the effectiveness of the deep learning–based phonetic intervention can be evaluated and demonstrate the need for innovative approaches to Arabic pronunciation instruction in Islamic secondary education contexts.

2. Post-test score

Before administering the post-test, the researcher conducted six instructional sessions using the developed textbook, which was designed based on a progressive phonological sequence, moving from simpler to more complex sounds. Error analysis was employed to identify students' difficulties in producing specific Arabic sounds and to guide the instructional process. Each instructional session lasted 35 minutes, and all 33 students were provided with the developed textbook as the primary learning resource throughout the intervention. Upon completion of all six instructional sessions, a post-test was administered to evaluate students' Arabic pronunciation proficiency and measure their learning progress following the implementation of the developed instructional materials. The post-test results are presented below:

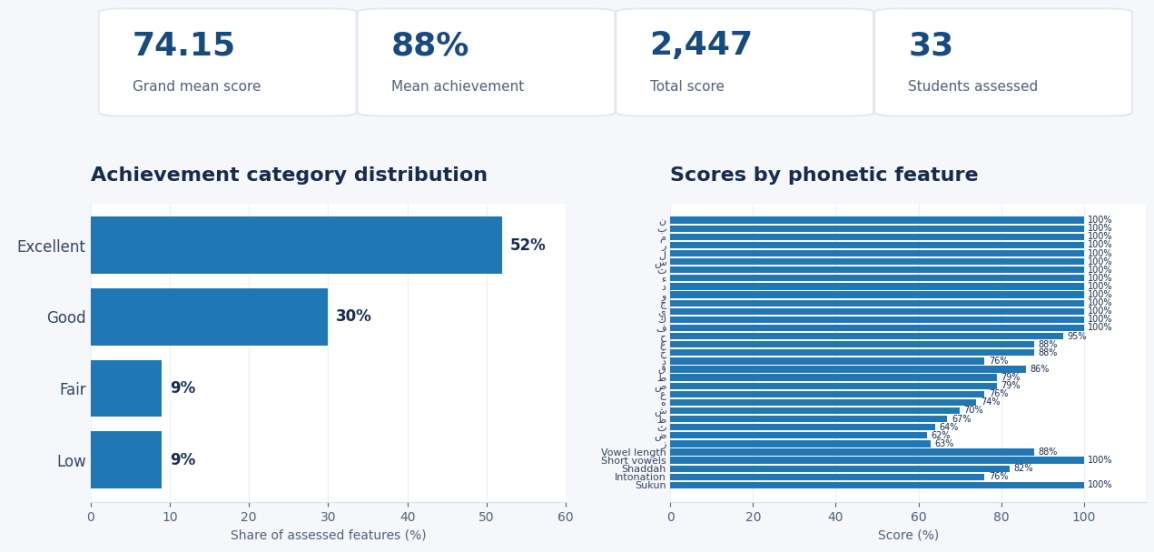


Figure 3. Post-test Score

The post-test results indicate that students achieved a high level of Arabic phonetic proficiency following the implementation of the deep learning–based instructional materials. The overall mean score reached 74.15, equivalent to 88% of the maximum score, while the total score attained by the participants was 2,447. These findings suggest that the instructional intervention successfully facilitated students' mastery of Arabic phonological features and enabled them to achieve a substantially higher level of pronunciation accuracy.

An examination of the distribution of achievement categories reveals a predominance of high-performance outcomes. More than half of the assessed phonetic items (52%) were classified in the Excellent category, while 30% were categorized as Good. Only 9% of the items remained in the Fair category and another 9% in the Low category. Importantly, none of the assessed phonetic aspects fell into the Very Low category, indicating that all students achieved at least a minimum level of phonetic competence after the instructional treatment. This distribution demonstrates a substantial shift toward higher proficiency levels and reflects the effectiveness of the instructional approach in reducing pronunciation deficiencies.

At the segmental level, students demonstrated exceptional mastery of many Arabic phonemes. Fourteen phonemes, including /ك/, /ي/, /ج/, /و/, /د/, /ء/, /ت/, /س/, /ل/, /ر/, /م/, /ب/, /ن/, and /ف/, achieved perfect scores of 100%, indicating complete mastery across the participant group. Moreover, traditionally challenging sounds such as خ (88%), غ (88%), ح (95%), and ق (86%) also attained high levels of accuracy. These results suggest that students developed considerable articulatory control and phonological awareness through repeated exposure, guided articulation practice, and systematic phonological progression.

Although several phonemes remained relatively more difficult than others, their achievement levels were still substantially satisfactory. The phonemes ث (64%), ظ (67%), ض (62%), ز (63%) recorded the lowest scores among the segmental features; however, all of them exceeded the 60% threshold and were categorized within acceptable levels of mastery. This finding indicates that even the most complex Arabic sounds, which involve emphatic, interdental, and fricative articulations, were pronounced more accurately after the intervention.

The results also demonstrate significant achievement in suprasegmental and prosodic features. Short vowels (أصوات القصيرة) and sukūn (سكون) achieved perfect scores of 100%, while long vowels (أصوات الطويلة) reached 88%. Furthermore, students attained 82% in tashdīd and 76% in tanġīm (intonation), indicating a strong level of competence in rhythm, stress, vowel duration, and intonation patterns. These findings suggest that the instructional materials successfully addressed both segmental and suprasegmental dimensions of Arabic pronunciation, contributing to a more comprehensive development of phonological competence.

From a pedagogical perspective, the post-test findings provide strong evidence that deep learning–based phonetic instruction promotes meaningful and sustained improvement in Arabic pronunciation. The high percentage of Excellent and Good performance categories, combined with the absence of Very Low outcomes, indicates that students benefited substantially from instructional activities emphasizing phonological progression, error analysis, guided articulation, repetitive practice, and corrective feedback. Consequently, the results support the conclusion that deep

learning–based phonetic instructional materials constitute an effective pedagogical framework for enhancing Arabic pronunciation proficiency among junior secondary learners and may serve as a valuable model for Arabic language education in similar educational contexts.

3. Comparison of Pre-test and post-test scores

Based on the Figure 2 and 3, the comparison of pre-test and post-test segmental phoneme scores reveals several important findings, namely:

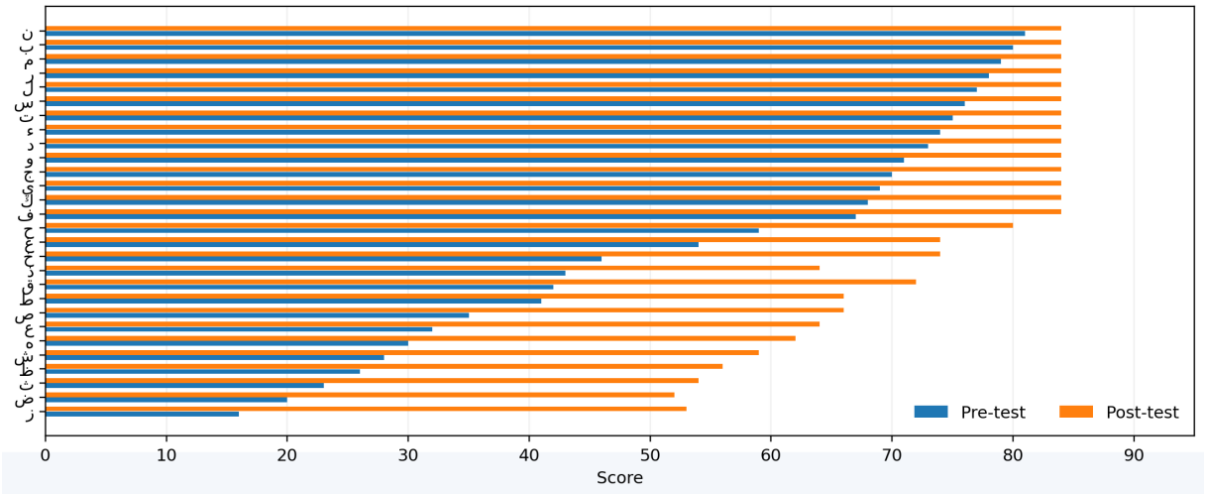


Figure 4. Segmental Phoneme Scores

Based on the Figure 4, several important findings can be identified from the comparison, as follow all phonemes showed improvement. This indicates that the development of pronunciation skills was not limited to specific sounds but extended across all the phonemes assessed. Second, the greatest improvement was observed in the phoneme /ز/. Its score increased from 16 to 53, representing a gain of 37 points. Other substantial improvements were found in the phonemes /ه/ ,/ع/, and /ض/, each of which increased by 32 points. Third, phonemes with lower initial scores tended to demonstrate greater improvements. For example, the score for /ز/ increased by 37 points, whereas /ن/ improved by only 3 points, as its initial score was already relatively high. The average score across the 28 segmental phonemes increased from 54.75 to 74.00, representing an overall gain of 19.25 points.

These findings indicate that students made progress in recognizing and producing Arabic sounds. The improvements observed in phonemes with initially low scores also suggest that progressive phonetic practice may help students overcome articulatory difficulties.

Table 3. Overall Improvement in Pronunciation Performance

Assessment indicators	Pre-test	Post-test	Improvement
Grand mean score	54.00	74.15	+20.15
Achievement percentage	64%	88%	+24 percentage points
Total score	1,782	2,447	+665
Excellent category	18%	52%	+34 percentage points
Good category	27%	30%	+3 percentage points
Very Low category	39%	0%	−39 percentage points

The comparison between the pre-test and post-test results demonstrates a substantial improvement in students' Arabic phonetic proficiency following the implementation of the deep learning–based instructional materials. Prior to the intervention, students achieved a grand mean score of 54 (64%), which was categorized as a fair level of pronunciation proficiency. After six instructional sessions employing phonological progression, auditory discrimination, guided articulation, contextualized practice, and corrective feedback, the grand mean increased to 74.15 (88%), indicating a transition from a fair level to a high level of phonetic competence. The overall score increased from 1,782 in the pre-test to 2,447 in the post-test, reflecting a gain of 665 points and an overall improvement of approximately 25%.

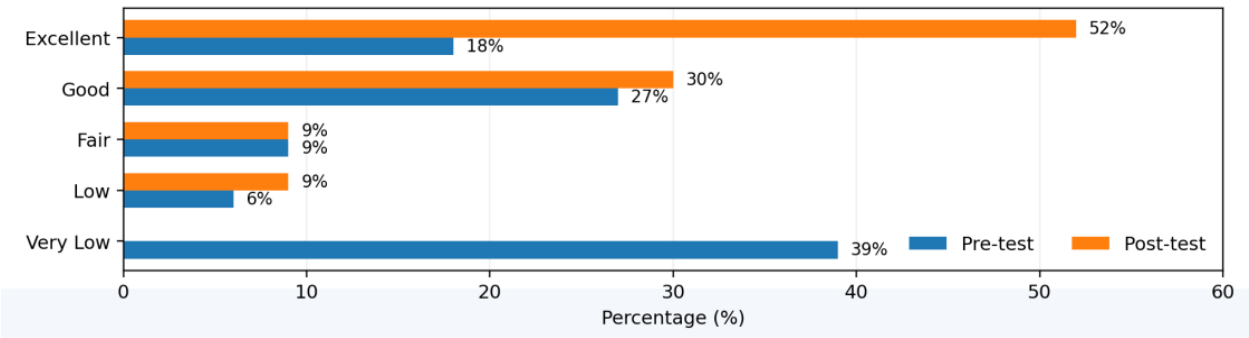


Figure 5. Achievement Category Distribution

The distribution of achievement categories further confirms the effectiveness of the instructional intervention. In the pre-test, only 18% of phonetic items were classified as Excellent, whereas 39% were categorized as Very Low. Following the intervention, the proportion of Excellent items increased dramatically to 52%, while the Very Low category was completely eliminated. Similarly, the Good category increased from 27% to 30%, demonstrating broader mastery across phonetic components. These findings indicate a significant shift from low-performance categories toward higher levels of phonological proficiency.

Table 4. Comparison of Segmental Phoneme Pronunciation Ability

Arabic phoneme	Pre-test	Post-test	Improvement
ز	19%	63%	+44
ض	24%	62%	+38
ث	27%	64%	+37
ظ	31%	67%	+36
ش	33%	70%	+37
ع	38%	76%	+38

At the segmental level, notable improvements were observed in difficult Arabic phonemes that initially posed major challenges for students. The phoneme /ز/ increased from 19% to 63%, representing a gain of 44 percentage points. Likewise, /ض/ improved from 24% to 62%, /ث/ from 27% to 64%, /ظ/ from 31% to 67%, /ش/ from 33% to 70%, and /ع/ from 38% to 76%. These gains suggest that the instructional materials effectively addressed articulatory difficulties associated with emphatic, pharyngeal, and fricative sounds, which are generally absent from the learners' native phonological system.

Table 5. Comparison of Suprasegmental Pronunciation Ability

Pronunciation aspects	Pre-test	Post-test	Improvement
تشديد	52%	82%	+30
تنغيم (intonation)	29%	76%	+47
أصوات الطويلة	68%	88%	+20
أصوات القصيرة	71%	100%	+29
سكون	76%	100%	+25

Significant progress was also evident in suprasegmental and prosodic features. Students' performance in تشديد increased from 52% to 82%, while تنغيم (intonation) rose from 29% to 76%. Similarly, mastery of أصوات الطويلة improved from 68% to 88%, and أصوات القصيرة increased from 71% to 100%, and سكون from 76% to 100%. These findings indicate that the intervention not only enhanced students' ability to articulate individual phonemes but also strengthened their awareness of rhythm, stress, vowel length, and intonation patterns, all of which are essential components of intelligible Arabic pronunciation.

From a pedagogical perspective, the findings provide strong empirical evidence supporting the effectiveness of deep learning–based phonetic instruction. The substantial gains across both segmental and suprasegmental aspects suggest that meaningful cognitive engagement, systematic phonological progression, and continuous corrective feedback contribute significantly to pronunciation development. The elimination of the Very Low category and the marked increase in Excellent performance indicate that students developed greater articulatory control, phonological awareness, and communicative confidence. Therefore, the results confirm that deep learning–based Arabic phonetic

instructional materials constitute an effective approach for improving pronunciation proficiency among junior secondary learners and offer a promising framework for Arabic language instruction in Islamic educational contexts.

Table 6. Results of the Shapiro–Wilk Normality Test

Data	N	Shapiro–Wilk Statistic (W)	Sig. (p)	Interpretation
Pre-test	33	0.909	0.009	Not normally distributed
Post-test	33	0.804	0.000039	Not normally distributed
Difference (Post-test – Pre-test)	33	0.953	0.163	Normally distributed

The normality test was conducted using the Shapiro–Wilk method on the pre-test scores, post-test scores, and the difference scores obtained from 33 students. The results indicated that the pre-test scores had a Shapiro–Wilk statistic of 0.909 with a significance value of 0.009, while the post-test scores had a statistic of 0.804 with a significance value of 0.000039. Both significance values were below 0.05, indicating that the pre-test and post-test scores were not normally distributed when examined individually.

Nevertheless, the normality assumption for the *paired-samples t-test* primarily concerns the distribution of the difference scores between the post-test and pre-test. The Shapiro–Wilk test results for the difference scores showed a statistic of 0.953 with a significance value of 0.163. Since this value was greater than 0.05, the difference scores were considered normally distributed. Consequently, the normality assumption for conducting the *paired-samples t-test* was satisfied, allowing the analysis to proceed to examine the statistical significance of the differences in students' Arabic pronunciation performance before and after the instructional intervention. The difference scores satisfied the normality assumption, with a Shapiro–Wilk significance value of 0.163 ($p > 0.05$). Therefore, the data were suitable for further analysis using a *paired-samples t-test*.

Based on the statistical analysis, the effect size was calculated as follows:

$$d_z = \frac{20.15}{10.52}$$

$$d_z = 1.92$$

Therefore, the calculated effect size was 1.92.

The effect size was calculated using Cohen's d_z for paired samples to determine the magnitude of the improvement in students' Arabic pronunciation performance following the instructional intervention. Based on the analysis of 33 paired observations, the mean pre-test score was 54.00, while the mean post-test score increased to 74.15, resulting in a mean difference of 20.15 points. The standard deviation of the difference scores was 10.52. The calculated effect size was 1.92, indicating a large effect according to Cohen's conventional benchmarks. This result suggests that the observed improvement in students' pronunciation performance was substantial in magnitude following the implementation of the deep learning-based Arabic phonetic instructional materials.

Table 7. Descriptive Statistical Results

Statistical Component	Pre-test	Post-test
Number of students (N)	33	33
Total score	1,782	2,447
Mean score	54.00	74.15
Mean improvement	—	20.15

The results indicate an increase in the students' mean Arabic pronunciation scores of 20.15 points following the implementation of the deep learning-based phonetic instructional materials.

Table 8. Paired-Samples t-Test Results

Statistical Component	Result
Number of participants (N)	33
Mean difference	20.15
Standard deviation of differences	10.52
Standard error	1.83
t-value	11.006
Degrees of freedom (df)	32
Sig. (2-tailed)	$p < 0.001$
Cohen's d_z	1.92

The hypotheses were formulated as follows:

1. H_0: There is no significant difference in students' Arabic pronunciation abilities before and after the implementation of deep learning-based phonetic instructional materials.
2. H_1: There is a significant difference in students' Arabic pronunciation abilities before and after the implementation of deep learning-based phonetic instructional materials.

The decision-making criteria were as follows:

1. If the significance value (Sig. 2-tailed) is less than 0.05, H_0 is rejected and H_1 is accepted.
2. If the significance value (Sig. 2-tailed) is greater than 0.05, H_0 is not rejected.

A paired-samples t-test was conducted to examine the difference in students' Arabic pronunciation performance before and after the implementation of the deep learning-based phonetic instructional materials. The analysis involved 33 Grade VII students. The results revealed that the mean pre-test score was 54.00, while the mean post-test score increased to 74.15, indicating a mean improvement of 20.15 points. The statistical analysis yielded a t-value of 11.006 with 32 degrees of freedom and a significance level of $p < 0.001$. Since the significance value was lower than the predetermined significance level of 0.05, the null hypothesis was rejected, indicating a statistically significant difference between students' Arabic pronunciation performance before and after the intervention. Furthermore, the effect size analysis produced a Cohen's d_z value of 1.92, which indicates a large effect.

Based on the statistical analysis, the calculated t-value was 11.006, with 32 degrees of freedom and a significance level of $p < 0.001$. Since the significance value was below the 0.05 threshold, H_0 was rejected and H_1 was supported. This indicates a statistically significant difference between the students' pre-test and post-test scores.

DISCUSSION

The findings of this study demonstrate that deep learning–based Arabic phonetic instructional materials significantly improved students' pronunciation proficiency at Al-Mahmud Integrated Islamic Junior High School in Bima. The Shapiro–Wilk normality test conducted on the difference scores (*post-test–pre-test*) yielded a value of W=0.953 with a significance level of p=0.163, indicating that the data met the normality assumption, as the significance value was greater than 0.05. Furthermore, the paired-samples t-test revealed a statistically significant difference between students' pronunciation performance before and after the implementation of the instructional materials, with a result of t(32)=11.006 and p<0.001. The students' mean score increased from 54.00 in the pre-test to 74.15 in the post-test, representing an average improvement of 20.15 points. In addition, the effect size analysis using Cohen's d_z yielded a value of 1.92, indicating a large effect. These findings confirm that the instructional intervention effectively enhanced students' mastery of Arabic phonetic articulation, particularly in difficult consonantal sounds such as / ,ث/ ,ظ/ ,ض/ ع//, and /ق/. The improvement suggests that the integration of deep learning principles into phonetic instruction can provide learners with meaningful and sustained engagement in pronunciation practice. At this stage, the researcher focused primarily on the results of the phonetic components.

The improvement in students' pronunciation ability can be interpreted through the perspective of deep learning theory proposed by (Marton & Säljö, 1976) and further developed by (Biggs & Tang, 2011). Deep learning emphasizes active cognitive engagement, meaningful understanding, and the integration of new knowledge with learners' previous experiences. In this study, students were not merely exposed to isolated phonetic drills; rather, they participated in scaffolded pronunciation activities involving auditory discrimination, guided articulation, corrective feedback, repetition, and contextualized pronunciation practice. Such learning processes enabled learners to internalize Arabic phonological patterns more effectively than conventional rote-based instruction. The deep learning approach used in the instructional materials also contributed to reducing students' phonetic anxiety and increasing articulatory awareness, particularly for sounds absent from their first language.

The findings are consistent with previous studies emphasizing the importance of systematic phonetic instruction in second language acquisition. Research by (Bahruddin & Halomoan, 2019) found that Arabic learners often experience persistent difficulties in producing emphatic and pharyngeal sounds due to first-language interference. Similarly, (Colantoni et al., 2015; Lan & Wu, 2013) Speech Learning Theory explains that learners tend to substitute unfamiliar target-language sounds with familiar native-language phonemes. The present study supports these theoretical perspectives, as students initially demonstrated serious pronunciation problems in emphatic consonants and pharyngeal articulations. However, unlike earlier studies that mainly described phonological errors, this research provides empirical evidence that deep learning–based instructional materials can substantially reduce such pronunciation difficulties through intensive and meaningful phonetic engagement.

Furthermore, the results align with multimedia learning theory proposed by (Mayer, 2009), which argues that learning becomes more effective when learners process information through multiple cognitive channels. The integration of multimodal activities within the instructional materials-including listening exercises, visual articulatory guidance, imitation practice, and interactive correction-appears to have strengthened learners' phonological awareness and retention. Research on technology-supported pronunciation practice similarly emphasizes the potential of automated feedback and computer-assisted practice, while noting that feedback quality and task design matte (Silpachai et al., 2024)

This study also contributes new insights to the existing body of knowledge by demonstrating that deep learning pedagogy can be effectively adapted to Arabic phonetic instruction at the junior secondary education level. Most previous studies concerning Arabic pronunciation focused either on university students or on traditional phonetic instruction emphasizing memorization and repetition. In contrast, the present study integrates deep learning principles, phonological progression, and contextual pronunciation activities into a unified instructional model specifically designed for adolescent learners in Islamic schools. This represents a pedagogical innovation in Arabic language teaching, particularly within the Indonesian educational context where pronunciation instruction is often marginalized in favor of grammar and vocabulary learning. This pedagogical focus is consistent with recent reviews that identify pronunciation teaching as an important component of instructed second-language acquisition (Alghazo et al., 2023; Saito & Plonsky, 2019).

The novelty of this research lies in the application of deep learning theory to Arabic phonetic instruction. The findings suggest that pronunciation mastery is more effectively achieved when phonetic instruction moves gradually from familiar sounds to more complex articulations while simultaneously engaging learners cognitively and communicatively. This modified framework extends existing pronunciation teaching theories by emphasizing the interaction between cognitive depth, phonological sequencing, and learner engagement. Consequently, the study proposes that effective Arabic phonetic acquisition requires not merely repetitive articulation practice, but also meaningful cognitive processing and contextualized learning experiences.

Another important finding concerns the differential improvement across phonetic categories. Students showed rapid improvement in familiar consonants and short vowels, while more complex sounds such as /ظ/ ,/ض/, and /ع/ continued to present moderate difficulty even after the intervention. This indicates that certain Arabic phonemes require longer exposure, more intensive articulatory training, and possibly technology-assisted pronunciation feedback. Nevertheless, the significant overall improvement suggests that the developed instructional materials successfully reduced the gap between familiar and unfamiliar phonetic structures. This finding enriches second language phonology research by illustrating that pronunciation difficulties are not equally distributed across phoneme categories and therefore require differentiated pedagogical treatment.

From a theoretical perspective, this study reinforces the view that pronunciation instruction should occupy a central position in Arabic language pedagogy. The findings challenge traditional approaches that prioritize grammar and reading skills while neglecting phonetic competence. Since pronunciation serves as the foundation for speaking and listening comprehension, inadequate phonetic mastery may hinder broader communicative competence. Therefore, the study strengthens communicative language teaching theory by emphasizing that accurate pronunciation contributes significantly to learners' confidence, intelligibility, and communicative effectiveness.

Practically, the findings have important implications for Arabic language teachers, curriculum developers, and educational institutions. Teachers are encouraged to adopt deep learning–based instructional strategies that promote active participation, reflective learning, and contextualized pronunciation practice. Curriculum developers should consider integrating systematic phonetic progression into Arabic instructional materials, especially at the beginner level. Additionally, schools should provide greater support for pronunciation-focused instruction through multimedia resources, interactive learning environments, and continuous phonetic assessment. The success of the intervention in this study indicates that innovative pronunciation materials can significantly enhance students' oral proficiency and learning motivation.

The study also has implications for future research. Although the findings demonstrate the effectiveness of deep learning–based phonetic materials, the research employed a one-group pre-test–post-test design without a control group. Future studies may apply experimental designs with larger and more diverse samples to strengthen the generalizability of the findings. Further investigations may also explore the integration of artificial intelligence, speech recognition technology, or mobile-assisted language learning applications to support Arabic phonetic acquisition. Additionally, longitudinal studies are needed to examine the long-term retention of pronunciation skills acquired through deep learning approaches.

Overall, this study confirms that deep learning–based Arabic phonetic instructional materials significantly improve students' pronunciation proficiency and provide a meaningful contribution to Arabic language pedagogy. The research not only validates the effectiveness of progressive phonetic instruction but also introduces an innovative instructional framework that integrates cognitive engagement, phonological sequencing, and communicative learning. These findings contribute both theoretically and practically to the development of more effective Arabic pronunciation teaching in Islamic educational contexts and beyond.

CONCLUSION

Based on the results of the normality test, effect size analysis, and paired-samples t-test, this study concludes that the deep learning-based Arabic phonetic instructional materials demonstrated positive results in improving the Arabic pronunciation proficiency of Grade VII students at Al-Mahmud Integrated Islamic Junior High School in Bima. The Shapiro–Wilk normality test conducted on the difference scores (*post-test–pre-test*) yielded a value of $W=0.953$ with a significance level of $p=0.163$, indicating that the data met the normality assumption, as the significance value was greater than 0.05. Furthermore, the paired-samples t-test revealed a statistically significant difference between students' pronunciation performance before and after the implementation of the instructional materials, with a result of $t(32)=11.006$ and $p<0.001$. The students' mean score increased from 54.00 in the pre-test to 74.15 in the post-test, representing an average improvement of 20.15 points. In addition, the effect size analysis using Cohen's d_z yielded a value of 1.92, indicating a large effect. These findings suggest that the implementation of deep learning-based phonetic instructional materials was associated with a substantial improvement in students' Arabic pronunciation proficiency. Therefore, the developed instructional materials have the potential to serve as an alternative instructional approach to support students in mastering Arabic phonetic articulation more effectively. Nevertheless, since this study employed a one-group pre-test–post-test design without a control group, the findings should be interpreted as evidence of improvement following the intervention rather than definitive proof that the intervention was the sole cause of the observed improvement. particularly in difficult consonantal sounds such as /ع/ ,/ث/ ,/ظ/ ,/ض/, and /ق/.

REFERENCE

Abicandra, M. N. H. (2022). Application of authentic assessment in Arabic language teaching in the program of studying the Arabic language at the Idrisi Islamic Boarding School for Boys, Jember. *ARKHAS: Journal of Arabic Language Teaching, 2*(1), 1–16. https://doi.org/10.35719/arkhas.v2i1.1267

Al-Ani, S. H. (2014). *Arabic phonology: An acoustical and physiological investigation*. De Gruyter Mouton. https://doi.org/10.1515/9783110878769 (Original work published 1970)

Alghazo, S., Jarrah, M., & Al Salem, M. N. (2023). The efficacy of the type of instruction on second language pronunciation acquisition. *Frontiers in Education, 8*, Article 1182285. https://doi.org/10.3389/feduc.2023.1182285

Al-Harkani, M. J. F. (2020). Morphological research between Rukn Al-Din Al-Istrabadi and Al-Khader Al-Yazdi in their explanations on Al-Shafia. *International Journal of Innovation, Creativity and Change, 14*(11), 1059–1074. https://www.ijicc.net/images/Vol_14/Iss_11/141181_Harkani_2020_E_R.pdf

Almusharraf, A., Mahdi, H. S., Al-Nofaie, H., & Aljasser, A. (2024). The effect of settings, educational level and tools on computer-assisted pronunciation training: A meta-analysis. *Journal of Computer Assisted Learning, 40*(4), 1605–1615. https://doi.org/10.1111/jcal.12974

Bahruddin, U., & Halomoan, H. (2019). Tahlîl al-akhthâ al-syafahiyah al-syâi'ah lada thullâb qism ta'lîm al-lughah al-'arabiyah fî al-jâmi'ah al-islâmiyah al-hukûmiyah bi Malang. *Arabi: Journal of Arabic Studies, 4*(2), 201–214. https://doi.org/10.24865/ajas.v4i2.186

Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university: What the student does* (4th ed.). Open University Press. https://books.google.com/books?id=XhjRBrDAESkC

Celce-Murcia, M., Brinton, D. M., & Goodwin, J. M. (2010). *Teaching pronunciation: A course book and reference guide* (2nd ed.). Cambridge University Press. https://books.google.com/books?id=Y-Q4ngEACAAJ

Chapelle, C. A. (2003). *English language learning and technology: Lectures on applied linguistics in the age of information and communication technology*. John Benjamins Publishing Company. https://doi.org/10.1075/lllt.7

Colantoni, L., Steele, J., & Escudero, P. (2015). *Second language speech: Theory and practice*. Cambridge University Press. https://doi.org/10.1017/CBO9781139087636

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications. https://books.google.com/books?vid=ISBN9781506386706

Darcy, I., Rocca, B., & Hancock, Z. (2021). A window into the classroom: How teachers integrate pronunciation instruction. *RELC Journal, 52*(1), 110–127. https://doi.org/10.1177/0033688220964269

De Angelis, G., & Selinker, L. (2001). Interlanguage transfer and competing linguistic systems in the multilingual mind. In J. Cenoz, B. Hufeisen, & U. Jessner (Eds.), *Cross-linguistic influence in third language acquisition: Psycholinguistic perspectives* (pp. 42–58). Multilingual Matters. https://doi.org/10.21832/9781853595509-004

Ellis, N. C., & Sagarra, N. (2010). The bounds of adult language acquisition: Blocking and learned attention. *Studies in Second Language Acquisition, 32*(4), 553–580. https://doi.org/10.1017/S0272263110000264

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to design and evaluate research in education* (10th ed.). McGraw-Hill Education. https://www.mheducation.com/highered/product/how-to-design-and-evaluate-research-in-education-fraenkel.html

Godwin-Jones, R. (2021). Evolving technologies for language learning. *Language Learning & Technology, 25*(3), 6–26. https://doi.org/10.64152/10125/73443

Lan, Y., & Wu, M. (2013). Application of form-focused instruction in English pronunciation: Examples from Mandarin learners. *Creative Education, 4*(9B), 29–34. https://doi.org/10.4236/ce.2013.49B007

Levis, J. M. (2005). Changing contexts and shifting paradigms in pronunciation teaching. *TESOL Quarterly, 39*(3), 369–377. https://doi.org/10.2307/3588485

Levis, J., Le, H., Lucic, I., Simpson, E., & Vo, S. (Eds.). (2016). *Proceedings of the 7th annual Pronunciation in Second Language Learning and Teaching Conference*. Iowa State University. https://apling.engl.iastate.edu/wp-content/uploads/sites/221/2016/08/PSLLT7_July29_2016_B.pdf

Marton, F., & Säljö, R. (1976). On qualitative differences in learning: I. Outcome and process. *British Journal of Educational Psychology, 46*(1), 4–11. https://doi.org/10.1111/j.2044-8279.1976.tb02980.x

Mayer, R. E. (2009). *Multimedia learning* (2nd ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511811678

Metruk, R. (2024). Mobile-assisted language learning and pronunciation instruction: A systematic literature review. *Education and Information Technologies, 29*(13), 16255–16282. https://doi.org/10.1007/s10639-024-12453-0

Muhammad, Z., & Sidik, F. (2025). The evaluation of the speaking skill teaching method at the Quranic School of Dewan Da'wah in Jakarta in light of the criteria of Abdulrahman Ibrahim Al-Fawzan. *Proceeding of International Conference on Islamic Studies (INCISST), 7*(1), 1971–1985. https://proceedingincisst.arraayah.ac.id/index.php/incisst/article/view/31

Muslimin, M., Hamid, M. A., Bahruddin, U., & Sahid, M. M. (2021). An errors analysis of Arabic phoneme in non-Arabic speaking students at junior high school. *Izdihar: Journal of Arabic Language Teaching, Linguistics, and Literature, 4*(2), 225–242. https://doi.org/10.22219/jiz.v4i2.16230

Newton, J. M., & Nation, I. S. P. (2020). *Teaching ESL/EFL listening and speaking* (2nd ed.). Routledge. https://www.routledge.com/Teaching-ESL-EFL-Listening-and-Speaking/Newton-Nation/p/book/9780367195533

Saito, K. (2021). What characterizes comprehensible and native-like pronunciation among English-as-a-second-language speakers? Meta-analyses of phonological, rater, and instructional factors. *TESOL Quarterly, 55*(3), 866–900. https://doi.org/10.1002/tesq.3027

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

Shehata, A. (2024). Arabic pronunciation instruction: Learner cognition and speech comprehensibility. *Journal of Second Language Pronunciation, 10*(2), 179–203. https://doi.org/10.1075/jslp.23015.she

Silpachai, A., Neiriz, R., Novotny, M., Gutierrez-Osuna, R., Levis, J. M., & Chukharev, E. (2024). Corrective feedback accuracy and pronunciation improvement: Feedback that is "good enough." *Language Learning & Technology, 28*(1), 1–16. https://doi.org/10.64152/10125/73582

Sudarmono, M. (2018). Development of health education materials for junior high school students. In *Proceedings of the International Seminar on Public Health and Education 2018 (ISPHE 2018)* (pp. 199–201). Atlantis Press. https://doi.org/10.2991/isphe-18.2018.46

Tseng, W.-T., Chen, S., Wang, S.-P., Cheng, H.-F., Yang, P.-S., & Gao, X. A. (2022). The effects of MALL on L2 pronunciation learning: A meta-analysis. *Journal of Educational Computing Research, 60*(5), 1220–1252. https://doi.org/10.1177/07356331211058662

Winke, P., & Brunfaut, T. (Eds.). (2021). *The Routledge handbook of second language acquisition and language testing*. Routledge. https://www.routledge.com/The-Routledge-Handbook-of-Second-Language-Acquisition-and-Language-Tes/Brunfaut-Winke/p/book/9781138490680

ACKNOWLEDGEMENT

Thank you to the Directorate General of Research and Development, Ministry of Higher Education, Science, and Technology (Kemdiktisaintek) through the Publication Assistance Program in Reputable Journals, so that the implementation of Publication activities can be carried out smoothly and successfully according to the achievements of the indicators compiled.

AUTHOR CONTRIBUTION STATEMENT

The authors contributed collaboratively to all stages of this research and manuscript preparation, from the initial conceptualization to the final conclusions. **M** was primarily responsible for conceptualizing the research, formulating the research objectives and questions, developing the research design, preparing the instructional materials, coordinating the research implementation, and drafting the initial manuscript. **N** contributed to the development and refinement of the research methodology, research instruments, data collection procedures, and critical review of the instructional intervention. **SW** contributed to data organization, statistical analysis, interpretation of the findings, and discussion of the research results. All authors participated in reviewing and revising the manuscript, refining the theoretical framework and literature review, interpreting the research findings, and formulating the conclusions and implications. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the research.

AI DISCLOSURE STATEMENT

The authors used ChatGPT during the preparation of this manuscript solely to improve language and grammar and enhance the clarity of the text. All AI-generated suggestions and outputs were carefully reviewed, verified, and edited by the authors to ensure their accuracy, relevance, and consistency with the research findings and academic standards. The authors take full responsibility for the originality, accuracy, interpretation, and final content of this manuscript.

***Muslimin (Corresponding Author)**
Arabic Language Education Study Program, Faculty of Islamic Studies,
Universitas Muhammadiyah Bima,
Jl. Anggrek No. 16, Ranggo, Kelurahan Na'e, Kecamatan Rasana'e Barat, Kota Bima, 84113, NTB, Indonesia
Email: musliminm679@gmail.com

Nurdiniawati
Arabic Language Education Study Program, Faculty of Islamic Studies,
Universitas Muhammadiyah Bima,
Jl. Anggrek No. 16, Ranggo, Kelurahan Na'e, Kecamatan Rasana'e Barat, Kota Bima, 84113, NTB, Indonesia
Email: dininurdiniawati@gmail.com

Sri Wahyuningsih
Arabic Language Education Study Program, Faculty of Islamic Studies,
Universitas Muhammadiyah Bima,
Jl. Anggrek No. 16, Ranggo, Kelurahan Na'e, Kecamatan Rasana'e Barat, Kota Bima, 84113, NTB, Indonesia
Email: clie.wahyu1@gmail.com