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THE EFFECTIVENESS OF INTERACTIVE METHODS IN DEVELOPING PHONOLOGICAL AWARENESS AND PHONETIC KNOWLEDGE AMONG PRIMARY SCHOOL PUPILS

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Abstract

This article examines the pedagogical and methodological effectiveness of interactive methods in developing phonological awareness and phonetic knowledge among primary school pupils. The study focuses on learners' ability to understand sound-letter relationships, distinguish vowels and consonants, segment words into syllables, perform simple phonetic analysis, and explain the connection between pronunciation and spelling. A quasi-experimental design was used with 64 second-grade pupils divided into an experimental group (n = 32) and a control group (n = 32). In the experimental group, phonetic topics were taught through brainstorming, cluster mapping, Venn diagrams, role-play, INSERT, pair analysis, and phonetic games, whereas the control group received instruction through conventional explanation, model-based exercises, and oral questioning. The results showed that the experimental group demonstrated a substantially higher increase in overall achievement, rising from 45.6% to 81.9%, compared with the control group, which increased from 48.1% to 62.5%. The post-test difference between the two groups was statistically meaningful, $t(62) = 6.69$, $p < .001$, Cohen's $d = 1.67$. The findings suggest that interactive instruction strengthens not only phonetic knowledge but also pupils' cognitive engagement, oral participation, independent reasoning, and self-monitoring. The article

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proposes a six-stage instructional model for teaching phonetic concepts through motivation, observation and analysis, classification, comparison, practical application, and reflection. The findings support the view that phonetic instruction in primary grades should be organized as an activity-based process rather than as mechanical memorization of rules.

Keywords: Primary education; phonological awareness; phonetic knowledge; interactive methods; sound-letter relationship; literacy; speech competence; active learning; phonetic analysis.

1. Introduction

Primary education creates the foundation for pupils' later academic progress, speech development, and literacy. Within mother tongue instruction, the formation of phonetic knowledge is particularly important because it directly influences accurate pronunciation, the ability to distinguish sounds and letters, syllable segmentation, stress placement, and the prevention of spelling errors in written speech. Therefore, teaching phonetics in the primary grades should not be limited to memorizing rules. It should be closely connected with listening, pronunciation, comparison, analysis, and practical use in reading and writing activities.

International research recognizes phonological awareness as one of the essential predictors of children's reading and spelling development. The National Reading Panel (2000) concluded that systematic instruction in phonemic awareness has a positive impact on children's reading and spelling outcomes. Similarly, Hogan et al. (2005) emphasized that phonological awareness is closely related to later reading achievement. These findings indicate that phonetic knowledge in primary grades should be taught not as abstract information but as practical activity that develops pupils' ability to hear, distinguish, manipulate, and relate sounds to written symbols.

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In traditional instruction, phonetic concepts are often presented through ready-made rules, teacher explanations, and repetitive exercises. Although this approach may help pupils reproduce definitions, it does not always ensure conscious understanding. Classroom observations show that some pupils can state the difference between vowels and consonants but still struggle to identify them independently in words. Others know the definition of a syllable but make mistakes when segmenting multisyllabic words. Such difficulties reveal the need to use active and interactive approaches in teaching phonetic topics.

Interactive methods are valuable because they transform pupils from passive recipients of information into active participants who observe, discuss, compare, justify, classify, and apply knowledge. Freeman et al. (2014), in a large meta-analysis, found that active learning improves students' achievement compared with traditional lecturing. Although their study focused on STEM disciplines, the general pedagogical implication is relevant to language education: learning becomes more effective when students actively construct knowledge rather than only receive explanations.

The relevance of the present study lies in the fact that phonetic instruction in primary grades is often organized within the narrow framework of rule explanation and exercise completion. As a result, pupils may experience difficulty applying phonetic concepts in real speech and writing tasks. Interactive methods, by contrast, connect phonetic knowledge with pupils' speech experience, auditory perception, communicative activity, and creative engagement. This study therefore aims to determine the effectiveness of interactive methods in developing phonological awareness and phonetic knowledge among primary school pupils.

2. Literature Review

The development of early literacy has been widely studied in international educational research. Phonological awareness, phonemic hearing, sound-letter

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correspondence, and the ability to analyze words phonetically are considered core components of early reading and spelling development. Moats and Tolman (n.d.) argue that phonological awareness is crucial for learning any alphabetic writing system because children must first understand that spoken words can be segmented into smaller sound units before they can effectively connect those units with letters.

Milankov et al. (2021) examined the relationship between phonological awareness and reading acquisition among primary school pupils learning to read in a transparent orthography. Their findings confirmed that phonological skills are strongly associated with early reading and writing development. This supports the idea that teaching phonetics should not focus only on theoretical characteristics of sounds but should also involve practical activities in which pupils distinguish, compare, segment, and apply sounds in oral and written language.

In Uzbek methodology, the teaching of mother tongue in primary grades is also viewed as a process aimed at developing oral and written speech, literacy, and the practical mastery of language units. Matchonov et al. (2021) emphasize that phonetic knowledge is closely connected with pupils' pronunciation, reading, and writing skills. From this perspective, phonetic instruction should function not as an isolated theoretical topic but as an applied tool for developing literacy and speech competence.

Pedagogical literature on interactive methods stresses that active learning increases learners' participation, motivation, communication, and independent thinking. Interactive methods are especially important in primary education because young learners acquire knowledge more successfully through observation, movement, play, dialogue, visual support, and group activity. When applied to phonetics lessons, such methods allow pupils to learn sounds, letters, syllables, and stress not only by memorization but also by hearing, pronouncing, comparing, grouping, and reflecting.

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3. Research Aim, Questions, and Novelty

3.1. Research Aim

The aim of the study is to determine the effectiveness of interactive methods in developing phonological awareness and phonetic knowledge among primary school pupils and to justify methodological opportunities for organizing phonetics lessons on the basis of active learning principles.

3.2. Research Tasks

1. to analyze the theoretical and methodological foundations of teaching phonetic knowledge in primary grades;
2. to identify the relationship between phonological awareness and phonetic knowledge;
3. to select and systematize interactive methods suitable for phonetics lessons;
4. to develop a model for forming phonetic knowledge through interactive methods;
5. to determine assessment criteria for measuring the influence of interactive methods on pupils' mastery of phonetic concepts.

3.3. Research Questions

6. How do interactive methods influence primary school pupils' conscious understanding of sound-letter relationships?
7. Do phonetics lessons organized through interactive methods improve pupils' ability to distinguish vowels and consonants, segment words into syllables, and perform simple phonetic analysis?
8. What opportunities do interactive methods provide for increasing pupils' interest, classroom activity, and speech participation in phonetic topics?

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3.4. Scientific Novelty

The scientific novelty of the study lies in proposing a systematic model for developing phonological awareness through interactive methods in the process of teaching phonetic knowledge in primary grades. In this model, phonetic knowledge is not treated as a separate theoretical unit but as an applied speech competence formed through listening, pronunciation, comparison, classification, role-based expression, sound-letter analysis, and reflection.

4. Methodology

4.1. Research Design and Participants

The study used a quasi-experimental research design. A total of 64 second-grade pupils participated in the experiment. They were divided into an experimental group (n = 32) and a control group (n = 32). The initial diagnostic results of the two groups were similar, which made it possible to compare the effects of the instructional approaches applied during the experiment.

4.2. Instructional Intervention

In the experimental group, phonetic topics were taught through interactive methods, including brainstorming, cluster mapping, Venn diagrams, role-play, the INSERT strategy, pair analysis, and phonetic games such as “Find the Sound,” “Continue the Syllable,” “Vowel or Consonant?” and “Sound Chain.” Each method was selected according to lesson objectives, pupils’ age characteristics, and the content of the topic. In the control group, lessons were organized mainly through teacher explanation, textbook exercises, model-based practice, and oral question-and-answer activities.

4.3. Assessment Criteria

Diagnostic tasks were developed according to five criteria: (a) distinguishing sounds and letters; (b) identifying vowels and consonants; (c) segmenting words

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into syllables; (d) performing simple phonetic analysis; and (e) explaining the relationship between pronunciation and spelling. Pupils' results were classified as low, medium, or high for the general level of phonetic knowledge, and as correct or incorrect for specific skills.

4.4. Data Analysis

The results were analyzed using descriptive statistics, percentage growth, and comparison of group means. In addition, an independent-samples t-test was used to compare post-test achievement between the experimental and control groups. Cohen's d was calculated to estimate the practical magnitude of the difference between the two groups.

5. Interactive Model for Developing Phonetic Knowledge

5.1. Motivational Stage

At this stage, pupils' interest in the topic is activated. The teacher asks problem-based questions such as "Why do some sounds form syllables?", "Why is the final letter in the word kitob pronounced differently in speech?", and "Does the meaning of a word change when a sound changes?" Through brainstorming, pupils express their assumptions freely. Incorrect answers are not rejected immediately; rather, they become a basis for further discussion and clarification.

5.2. Observation and Analysis Stage

At this stage, pupils observe, pronounce, and compare sounds in words such as olma, ona, aka, bola, and kitob. They identify vowels and consonants and observe whether the air stream passes freely or meets an obstacle during pronunciation. The teacher does not provide conclusions immediately but guides pupils to formulate their own conclusions through observation.

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5.3. Classification Stage

Cluster mapping is used to systematize phonetic concepts. The word Sounds is written in the center of the board, and branches such as vowels, consonants, voiced consonants, voiceless consonants, syllable, and stress are developed. Pupils provide examples for each branch. This helps them understand phonetic concepts as interrelated elements rather than isolated terms.

5.4. Comparison Stage

Venn diagrams are used to compare vowels and consonants. Pupils identify the distinctive features of vowels, such as their ability to form syllables and the free passage of air during pronunciation, and the features of consonants, such as the presence of an articulatory obstacle. As common features, pupils note that both groups are speech sounds and participate in distinguishing word meanings.

5.5. Practical Application Stage

Role-play, phonetic games, and pair work are used at this stage. For example, one pupil plays the role of the sound A and says, “I am a vowel; I can form a syllable.” Another pupil plays the role of the sound B and says, “I am a consonant; the lips participate in my pronunciation.” Such activities make abstract phonetic concepts more vivid and strengthen pupils’ oral participation and creativity.

5.6. Reflection Stage

The INSERT strategy is used to develop pupils’ self-monitoring. Pupils read a short text on a phonetic topic and mark it with symbols: + for information they already know, ! for new information, and ? for unclear points. At the end of the lesson, questions marked with ? are discussed. This stage develops pupils’ ability to evaluate their own understanding and ask meaningful questions.

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6. Results

The experimental work was aimed at determining the effectiveness of interactive methods in developing phonological awareness and phonetic knowledge among primary school pupils. At the beginning of the experiment, both groups completed diagnostic tasks based on five criteria: distinguishing sounds and letters, identifying vowels and consonants, segmenting words into syllables, performing simple phonetic analysis, and explaining the relationship between pronunciation and spelling.

Table 1 Initial Level of Pupils' Phonetic Knowledge

Group	Number of pupils	Low level	Medium level	High level
Experimental group	32	13 pupils 40.6%	15 pupils 46.9%	4 pupils 12.5%
Control group	32	12 pupils 37.5%	16 pupils 50.0%	4 pupils 12.5%

Table 1 shows that the initial level of phonetic knowledge in both groups was almost equal. In both groups, high-level pupils accounted for 12.5%, indicating that the groups were comparable before the intervention.

During the intervention, phonetic topics in the experimental group were taught through interactive methods. For example, the topic "Vowels and Consonants" was taught using a Venn diagram; "Sound and Letter" was taught through cluster mapping; "Word Syllabification" was practiced through phonetic games; "Pronunciation and Spelling" was developed through pair analysis; and "Stress" was taught through role-play and INSERT. In each lesson, pupils were encouraged to hear, pronounce, compare, classify, and explain sounds through practical examples.

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Table 2 Final Level of Pupils' Phonetic Knowledge

Group	Number of pupils	Low level	Medium level	High level
Experimental group	32	3 pupils 9.4%	12 pupils 37.5%	17 pupils 53.1%
Control group	32	8 pupils 25.0%	17 pupils 53.1%	7 pupils 21.9%

The final diagnostic results show a substantial increase in the experimental group. The number of high-level pupils in this group increased from 4 pupils (12.5%) to 17 pupils (53.1%), while the number of low-level pupils decreased from 13 pupils to 3 pupils. The control group also showed improvement, but the growth was less pronounced: high-level pupils increased from 4 to 7, and low-level pupils decreased from 12 to 8.

Table 3 Growth Dynamics of Specific Phonetic Skills in the Experimental Group

Assessment criterion	Correct at pre-test	Correct at post-test	Growth
Distinguishing sounds and letters	18 pupils 56.3%	29 pupils 90.6%	+34.3%
Identifying vowels and consonants	17 pupils 53.1%	28 pupils 87.5%	+34.4%
Segmenting words into syllables	16 pupils 50.0%	27 pupils 84.4%	+34.4%
Performing simple phonetic analysis	12 pupils 37.5%	24 pupils 75.0%	+37.5%
Explaining pronunciation-spelling relationships	10 pupils 31.3%	23 pupils 71.9%	+40.6%

As shown in Table 3, the greatest improvement in the experimental group was observed in pupils' ability to explain the relationship between pronunciation and spelling. This indicator increased from 31.3% to 71.9%. A considerable increase

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was also found in simple phonetic analysis, which rose from 37.5% to 75.0%. These results suggest that interactive activities such as pair analysis, phonetic games, and role-play supported pupils' ability to apply phonetic concepts in practical tasks.

Table 4 Growth Dynamics of Specific Phonetic Skills in the Control Group

Assessment criterion	Correct at pre-test	Correct at post-test	Growth
Distinguishing sounds and letters	19 pupils 59.4%	23 pupils 71.9%	+12.5%
Identifying vowels and consonants	18 pupils 56.3%	22 pupils 68.8%	+12.5%
Segmenting words into syllables	16 pupils 50.0%	21 pupils 65.6%	+15.6%
Performing simple phonetic analysis	13 pupils 40.6%	18 pupils 56.3%	+15.7%
Explaining pronunciation-spelling relationships	11 pupils 34.4%	16 pupils 50.0%	+15.6%

The control group also demonstrated positive change, but the growth in all indicators was noticeably lower than that of the experimental group. The difference was especially visible in practical skills, such as explaining pronunciation-spelling relationships and performing simple phonetic analysis.

Table 5 Overall Achievement Indicators in the Experimental and Control Groups

Group	Pre-test mean score	Post-test mean score	Overall growth
Experimental group	45.6%	81.9%	+36.3%
Control group	48.1%	62.5%	+14.4%

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The overall achievement indicators show that the experimental group increased from 45.6% to 81.9%, whereas the control group increased from 48.1% to 62.5%. An independent-samples t-test confirmed that the post-test difference between the groups was statistically significant, $t(62) = 6.69$, $p < .001$. The effect size was large (Cohen's $d = 1.67$), indicating a strong practical effect of the interactive instructional approach.

7. Discussion

The findings demonstrate that interactive methods contribute to the conscious mastery of phonetic concepts rather than mechanical memorization. The use of Venn diagrams helped pupils compare the distinctive and common features of vowels and consonants. Cluster mapping helped pupils organize concepts such as sound, letter, syllable, and stress into a meaningful system. Role-play made abstract phonetic concepts more concrete and memorable. The INSERT strategy encouraged pupils to monitor their own understanding and formulate questions about unclear points.

The results are consistent with international research emphasizing the importance of phonological awareness for reading and spelling development (Hogan et al., 2005; Milankov et al., 2021; National Reading Panel, 2000). The findings also support the broader claim that active learning improves student performance by increasing participation, engagement, and meaningful processing of learning material (Freeman et al., 2014).

It is important to note that interactive methods do not completely replace traditional explanation. Rather, they enrich explanation, demonstration, and practice with active learning elements. A teacher's theoretical explanation becomes more effective when it is followed by pupils' own examples, group comparison, oral justification, practical analysis, and reflection. Therefore, the effective teaching of phonetics requires a balanced combination of explanation, guided practice, interactive tasks, and self-assessment.

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The study also indicates that interactive methods develop not only phonetic knowledge but also broader learning skills, including independent thinking, cooperation, oral expression, and self-monitoring. This is especially significant in primary education, where linguistic knowledge and general cognitive development are closely connected.

8. Conclusion

The development of phonological awareness and phonetic knowledge among primary school pupils is of major pedagogical and methodological importance. Phonetics is directly related to pupils' literacy, pronunciation, syllable segmentation, sound-letter understanding, and accuracy in written speech. Teaching phonetic knowledge only through definitions and rules is insufficient; it should be based on listening, pronunciation, comparison, classification, analysis, practical application, and reflection.

The interactive model proposed in this study includes six stages: motivation, observation and analysis, classification, comparison, practical application, and reflection. Brainstorming, cluster mapping, Venn diagrams, role-play, phonetic games, pair analysis, and INSERT increased pupils' classroom activity, strengthened independent thinking, and supported the conscious mastery of phonetic concepts.

The experimental results showed that the interactive approach produced higher achievement than the traditional approach. The experimental group's overall achievement increased by 36.3%, compared with 14.4% in the control group. The post-test comparison confirmed a statistically significant and practically strong effect of the intervention. These findings suggest that interactive methods should be systematically integrated into phonetics lessons in primary grades.

Based on the findings, the following recommendations can be made: phonetic topics should be taught through listening, pronunciation, and practical analysis; interactive methods should be combined with traditional explanation; sound-

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letter analysis, syllable segmentation, vowel-consonant classification, and stress identification should be organized through games, pair work, and group discussion; assessment should consider not only rule reproduction but also pupils' ability to apply phonetic knowledge; and interactive tasks aimed at developing phonological awareness should be more widely reflected in primary school textbooks and methodological guides.

References

1. Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. Proceedings of the National Academy of Sciences, 111(23), 8410–8415. https://doi.org/10.1073/pnas.1319030111
2. Hogan, T. P., Catts, H. W., & Little, T. D. (2005). The relationship between phonological awareness and reading: Implications for the assessment of phonological awareness. Language, Speech, and Hearing Services in Schools, 36(4), 285–293. https://doi.org/10.1044/0161-1461(2005/029)
3. Kholiqov, A. (2019). Zamonaviy pedagogik texnologiyalar [Modern pedagogical technologies]. Fan va texnologiya.
4. Matchonov, S., Bakiyeva, H., G'ulomova, X., Yo'ldosheva, Sh., & Xolboyeva, G. (2021). Boshlang'ich sinflarda ona tili o'qitish metodikasi [Methods of teaching mother tongue in primary grades]. Toshkent.
5. Milankov, V., Golubović, S., Krstić, T., & Golubović, Š. (2021). Phonological awareness as the foundation of reading acquisition in students reading in transparent orthography. International Journal of Environmental Research and Public Health, 18(10), Article 5440. https://doi.org/10.3390/ijerph18105440
6. Moats, L., & Tolman, C. (n.d.). Why phonological awareness is important for reading and spelling. Reading Rockets. Retrieved June 9, 2026, from

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https://www.readingrockets.org/topics/early-literacy-development/articles/why-phonological-awareness-important-reading-and

7. National Reading Panel. (2000). Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. National Institute of Child Health and Human Development. https://www.nichd.nih.gov/publications/pubs/nrp/findings
8. Republic of Uzbekistan. (2020). Law of the Republic of Uzbekistan "On Education" (No. ZRU-637, September 23, 2020).
9. Yo'ldoshev, J., & Usmonov, S. (2018). Pedagogik texnologiyalar va pedagogik mahorat [Pedagogical technologies and pedagogical mastery]. O'qituvchi.