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Typology of Orthographic Interference: Linguistic Foundations for Improving the National Writing System

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ABSTRACT

The article explores orthographic interference in the process of improving the normative tools of national writing. Orthographic interference is a linguistic phenomenon that arises from the interaction of different language systems, manifesting as deviations or violations of writing norms. The study analyzes changes and adaptations of linguistic norms and their impact on the writing skills of language learners. It focuses on identifying linguistic mechanisms to improve the national writing system by preventing and reducing orthographic interference. The study employs content analysis, comparative methods, and qualitative analysis. Over 60 students' written works were examined to determine the frequency, typology, and causes of orthographic errors. The analysis identified common types of interlingual and intralingual interference. Interlingual interference results from the influence of Russian and English graphic, phonological, and morphological features, while intralingual interference arises from inadequate understanding of the phonetic and phonological foundations of the language. Content analysis identified the most frequent orthographic errors, with primary causes including insufficient mastery of spelling rules, differences between native and target language writing systems, and

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teaching method shortcomings. These errors serve as indicators of students' writing experience and language proficiency. The identified types of interference contribute to improving normative tools, assessing the effectiveness of educational programs and methodologies, standardizing orthographic norms, and enhancing writing culture in multilingual societies. The findings support the codification of Kazakh orthographic norms and the development of a scientific and methodological foundation for reducing linguistic interference.

Keywords: Orthography; Orthology; Interference; Norm; Writing; Intralingual Interference; Interlingual Interference

1. Introduction

Modern linguistics is studied within the framework of the anthropocentric paradigm. The reason for this is the recognition that language is not separate from humans but, on the contrary, is closely connected to them. In the anthropocentric paradigm, the focus is on how a linguistic personality uses and perceives language, considering the socio-cultural factors that influence language comprehension, perception, and communication. In this regard, the anthropocentric paradigm examines language interaction, specifically how the rules and conventions of one language are applied in another, with the concept of the "linguistic personality" as the central focus.

Orthographic interference is a widespread phenomenon in multilingual environments, manifesting when the writing system of one language influences writing in another. This phenomenon is particularly important in the improvement of the orthographic system of the Kazakh language. Research shows that language learners' writing skills depend on the orthographic features of their native language, leading to errors in writing^[1, 2].

The significance of this research topic is justified by several aspects. First, it has theoretical importance. Analyzing the linguistic foundations of orthographic interference helps establish a scientific basis for improving the orthographic system of the Kazakh language. This aspect is confirmed by the studies of Garcia & Thompson and Johnson et al., which investigate orthographic interference in bilingual students^[1, 2].

Second, it has practical importance. The obtained results contribute to refining national orthographic standards, developing educational and methodological resources, and creating artificial intelligence-based systems for automatic spelling correction. The research by Nguyen & Bauer indicates that monitoring orthographic interference in English as

a second language (ESL) students can help improve writing skills^[3].

Third, from social and educational perspectives, this research enhances the writing culture and increases linguistic literacy among learners of the Kazakh language. The studies of Kurmangali & Kydyrbekkyzy and Sarsenbekova examine the theoretical and practical aspects of orthographic norms in Kazakh and analyze their role in education^[4, 5]. These works discuss the significance of orthographic rules in school curricula, effective teaching methods, and the challenges encountered during instruction.

The above research provides a significant scientific and practical foundation for improving the orthographic system of the Kazakh language, identifying effective methods for developing writing skills in multilingual environments, and enhancing linguistic literacy.

The term "interference" was initially used in natural sciences such as physics, chemistry, and biology. In the first half of the 20th century, Baudouin de Courtenay applied the concept of interference to linguistics, arguing that language interaction not only introduces new elements into a language but also brings languages closer together, revealing their similarities and differences^[6]. Shcherba further developed this idea, concluding that as a result of language contact, the norms of both interacting languages undergo changes^[7].

After the publication of Weinreich's *Language Contact* in 1953, the term "linguistic interference" gained widespread scientific recognition^[8]. Weinreich defined interference as a deviation from linguistic norms resulting from knowledge of a second or third language.

In general linguistics, until the 1960s, interference was understood as a deviation from linguistic norms. In 1963, Haugen redefined linguistic interference not as a negative phenomenon but as a natural feature of language interaction, arguing that any linguistic unit can simultaneously belong to two language systems^[9]. Diebold described interference

as a “linguistic change” resulting from the contact of two languages, while Hockett considered it an “individual influence”^[10, 11]. However, other linguists, such as Vereshchagin, opposed this view, arguing that interference is not merely a violation or mixing of linguistic norms^[12]. Instead, interference occurs when a linguistic personality perceives one system through the framework of another, leading to deviations from established norms. Similarly, Rosentzveig described interference as a deviation from the norm that disrupts the correlation rules of two interacting languages^[13]. Vinogradov suggested that interference occurs when linguistic systems interact in a bilingual context, causing deviations from native linguistic norms due to contact with a non-native language^[14].

Some researchers do not view interference solely as a negative deviation from linguistic norms but also as a factor that can facilitate language learning. For example, Platonov introduced the concept of “habit interference,” arguing that existing linguistic habits can help learners acquire new ones more easily^[15]. Barannikova defined interference as the modification of a language’s structure or elements under the influence of another language^[16]. Akhunzyanov described interference as a natural, unconscious process that occurs during the acquisition of two or more languages^[17]. Kobylina, in her work *Syntactic Interference and Its Research Methods*, argued that linguistic interference results from bilingual speech production and manifests at the phonological, lexical, and grammatical levels^[18].

Although research on orthographic interference remains limited, some studies have explored this issue. Psycholinguist Feoktistova’s book *Language Mixing in Bilingual Situations* provides a detailed analysis of orthographic and orthoepic interference in foreign language learning^[19]. Leontiev also examined orthographic interference as a factor influencing interlingual communication in his work *Psycholinguistics of Foreign Language Communication*^[20]. Additionally, researchers such as Ivanova, Badmaeva, and Sidorova have analyzed the causes of orthographic interference in written communication and the difficulties it presents in language learning^[21]. For example, Badmaeva investigates spelling errors among bilingual students learning Russian^[22]. The researcher argues that orthographic interference is a significant challenge for multilingual students learning a new language. She attributes spelling difficulties primarily

to the entrenched linguistic patterns of the native language in the learner’s cognitive framework. Badmaeva identifies several factors influencing orthographic interference, including the learner’s age, proficiency level, understanding of linguistic norms, teaching methods, and orthographic exercises.

Building on these findings, it is possible to identify both linguistic and non-linguistic factors affecting orthographic interference. Linguistic factors include phonetic-phonological, graphic, morphological, and lexical influences. Non-linguistic factors encompass psychological aspects, educational background, the writer’s age, cognitive perception, language usage frequency, and social factors.

In studying the impact of interlingual connections on orthographic interference, Ivanova and Trifonova examine the nature of interference as a linguistic phenomenon, its types, and its causes^[23]. The authors explain the emergence of orthographic errors in foreign language learning through interlingual connections. Meanwhile, Martínez and Hill analyze the effect of interlingual connections on orthographic norms in multilingual settings^[24]. Their study demonstrates how interlingual connections influence the orthographic skills of students learning multiple languages.

Kalibek and Alimbayev investigate the impact of Kazakh-Russian linguistic interaction on orthographic interference. Their study compares the graphic and phonetic systems of Kazakh and Russian, identifying points of influence that lead to orthographic errors^[25]. Mukhamedkaliyev analyzes the orthography of foreign words in the Kazakh language, exploring how the orthographic features of loanwords affect students’ writing skills^[26]. These studies comprehensively highlight the effects of linguistic connections on orthographic interference.

Orthographic interference is a phenomenon caused by the influence of a multilingual student’s native language on their writing skills. This issue is extensively studied from both psycholinguistic and neurolinguistic perspectives. Psycholinguistically, Petrova thoroughly examines how interference affects the development of orthographic skills in bilingual and multilingual students^[27]. Her research demonstrates that the orthographic norms of the native language significantly influence the literacy of bilingual children, particularly when they learn languages with distinct phonetic and graphic systems.

The cognitive mechanisms of orthographic interference

have been studied by Rossi et al., who found that the speed and accuracy of lexical processing in bilingual individuals depend on orthographic similarities between languages^[28]. Their research indicates that multilingual individuals frequently make mistakes when switching from one language to another during writing and reading.

From a neurolinguistic perspective, interference has been examined by Johnson et al.^[29]. Using Functional Magnetic Resonance Imaging (fMRI) and Electroencephalography (EEG) methods, the researchers analyzed brain activity patterns in response to visual orthographic signals while processing words in a second language. Their findings show that, in the initial stages of reading acquisition, the writing system of the native language significantly affects brain activity. This suggests that stable orthographic models form in the human linguistic system, potentially causing interference when learning a new language.

Overall, studies confirm that orthographic interference develops due to various psycholinguistic and neurolinguistic factors. The orthographic system of the native language influences the development of writing skills in a second language, potentially leading to interference. This highlights the need for specialized methods to enhance students' orthographic skills in multilingual education.

Our research builds on the work of Kalibek and Alimbayev^[25]. Additionally, we emphasize the comparative-contrastive analyses conducted by Nguyen and Bauer^[25, 30]. These studies use experimental methods to compare the graphic and phonetic systems of Kazakh and Russian, identifying areas where mutual influence leads to orthographic errors. Meanwhile, Smith and Li used surveys and interviews to determine how the orthographic features of the native language hinder learning English as a second language^[31]. Furthermore, the study by Abramova and Sokolova provides a detailed examination of effective methods for correcting orthographic interference^[32]. Their research offers strategies for addressing orthographic interference in teaching Russian as a foreign language. These include comparative-contrastive analysis, specialized exercises and assignments, the use of visual and auditory materials, game-based learning techniques, and immersive language environments. To enrich the linguistic environment, they recommend activities such as reading books, watching films, and participating in speaking clubs.

Nurlanov explores the nature of orthographic errors in elementary school students' writing and proposes methods for their prevention^[33]. Sarsenbekova examines the causes of orthographic errors in university-level Kazakh language courses, suggesting correction methods and strategies for preventing interference^[34]. These studies contribute to a deeper understanding of orthographic interference.

Summarizing this review, orthographic interference is influenced not only by interlingual connections but also by psycholinguistic and neurolinguistic factors. The impact of the native language's orthographic system on students' writing skills, the role of cognitive mechanisms, and the characteristics of brain activity all highlight the multidimensional nature of orthographic interference. This underscores the need to apply diverse scientific approaches in its study. Additionally, several key issues require special attention:

First, interference is the result of one language's influence on another, meaning that the norms of one language are applied in written or spoken communication in another language. In other words, interference occurs when the influence of a second language causes deviations from the norms and system of the native language.

Second, interference is studied from multiple perspectives and analyzed through various lenses. Specifically, in language learning, the influence of previously acquired skills is examined from a psycholinguistic perspective; the effects of ethnic connections are analyzed from a sociolinguistic perspective; linguistic errors made by native speakers of a language are explored from a methodological perspective; cognitive aspects consider issues related to thinking, perception, and reasoning; and linguistic aspects examine the mixing of language knowledge and norms. Research on linguistic interference is conducted in connection with linguistic disciplines and language units^[17].

Third, difficulties in oral and written communication resulting from linguistic interference should not be viewed solely as a negative effect. In writing or perceiving text in the native language, universal linguistic properties that do not negatively impact communication are realized through "positive transfer." Positive transfer is a mechanism frequently observed in the speech and cognitive activities of multilingual individuals. In the linguistic consciousness of a speaker, similar language units from two different languages may interact, facilitating second-language acquisition. However,

if the native language is not actively used in oral and written communication, this can lead to negative transfer. The ability to recognize and comprehend interfering language units depends on the individual's educational background and socio-cultural level.

While previous studies have examined interference in general terms, our research identifies specific types of orthographic interference and systematically analyzes the causes of errors. This analysis provides a theoretical basis for developing methodological recommendations aimed at reducing orthographic interference and for designing orthographic exercises and assignments. Furthermore, it has practical applications for automated orthographic error correction using artificial intelligence and for processing Kazakh-language texts.

The primary objective of this research is to identify the types and causes of orthographic interference in the Kazakh language, assess its impact on national writing culture, and develop recommendations for stabilizing orthographic norms.

2. Materials and Methods

During the study, both primary and auxiliary materials were used. One of the main sources was The Orthographic Dictionary of the Kazakh Language. This dictionary serves as a practical tool aimed at improving and standardizing the orthographic system of the Kazakh language. It provides a fundamental basis for understanding orthographic norms and was therefore used as the primary normative material in the research.

The research materials included over 60 essays written by university students. These written works were collected during the regular learning process, ensuring the authenticity of the study. The participants were aged between 20 and 30 years. The selection strategy focused on students proficient in Kazakh, Russian, and English. The study considered students with intermediate to upper-intermediate language proficiency (B1, B2), acknowledging the presence of orthographic errors in their writing. The selection process was conducted randomly. The collected data were processed using Excel, and through content analysis, errors were classified, and their frequency and typology were identified. A comparative-contrastive analysis helped determine the man-

ifestations of linguistic interference. Additionally, surveys and interviews provided insights into the causes of orthographic errors. Statistical analysis revealed correlations between the causes and frequency of orthographic errors.

Ethical considerations were given special attention. Participants' anonymity was maintained, and the confidentiality of written works was ensured. The research results were used solely for scientific purposes. Participants were informed, both verbally and in writing, that their materials would remain confidential, with no personal information such as names or educational institutions disclosed. Accordingly, the study does not include any identifying data about the authors of the materials. All collected information is kept confidential, adhering to ethical principles to ensure the objectivity and fairness of the research.

The study employed content analysis, comparative-contrastive analysis, and statistical analysis. Content analysis involved selecting orthographic errors from student essays and examining interference-related errors in each text. Errors were classified based on their frequency and typology. The comparative-contrastive analysis compared the graphic and phonetic systems of Kazakh and Russian to identify areas where mutual influence leads to orthographic errors. Statistical analysis was used to determine the frequency distributions, percentage values, and arithmetic averages, helping to establish relationships between error causes and their occurrence rates.

Students were given writing assignments on various topics, allowing for a comprehensive assessment of their language skills and writing styles. Each written work was carefully examined, focusing on orthographic errors and signs of linguistic interference. Errors were categorized and processed in Excel, and content analysis helped determine their frequency and typology. It was found that errors were related to cognitive perception, previously acquired language skills, ethnic connections, and linguistic knowledge level. Thus, the study did not merely classify orthographic errors but also analyzed their origins and the impact of linguistic interference.

A comparative analysis of the orthographic rules of Kazakh, English, and Russian was conducted. This method helped identify both interlingual and intralingual types of orthographic interference. It also facilitated the development of practical recommendations for reducing orthographic in-

terference. Through comparison, differences in the phonetic systems, phonological features, and writing norms of Kazakh and Russian were identified, providing insights into the causes of linguistic interference and mechanisms behind orthographic errors.

The comparative analysis consisted of several stages. First, a review of orthographic rules in Kazakh, Russian, and English was conducted. Second, the causes of interference were identified. The study applied a comprehensive approach, integrating multiple methods to investigate orthographic interference in the process of refining national writing. The collected data allowed for the development of practical solutions to improve national writing efficiency and minimize orthographic interference.

A qualitative analysis was conducted to examine the underlying causes of orthographic errors. This method helped determine whether errors resulted from linguistic interference, lack of knowledge of writing rules, or insufficient language proficiency.

The significance of the research is multifaceted, covering theoretical, practical, social, and educational aspects. From a theoretical perspective, the study offers a new direction in Kazakh orthography research and contributes to the development of new theoretical foundations. Practically, the findings provide a basis for improving national orthographic standards, developing educational and methodological resources, and creating automated tools (including artificial intelligence systems) to enhance writing culture.

3. Results

Analysis of the written works revealed two main types of orthographic interference: interlingual and intralingual. These types of interference were found to be directly related to students' linguistic environment, language experience, and proficiency in orthographic norms.

Interlingual interference refers to orthographic errors that occur due to the influence of one language on another. The study showed that although Kazakh is the students' primary language, all participants had a strong command of Russian and frequently used it in daily life.

The research identified that interlingual orthographic interference, particularly graphemic interference, is widespread in students' writing. The main causes of this

interference were classified as follows:

(1). Differences in graphemic systems: The graphical similarities and phonetic differences between Kazakh and Russian (e.g., the interference between [к] and [к], [н] and [н], and between vowels such as [ү], [ү], and [y]) lead to spelling errors.

(2). Capitalization differences: Errors caused by differences in the use of capital letters between Kazakh and English were frequently observed. This was especially evident in writing titles, where English-language conventions disrupted Kazakh orthographic rules.

(3). Disruptions in letter-sound correspondence: The phonetic systems of Kazakh and Russian differ in the number and quality of vowels and consonants, as well as in stress placement, leading to inconsistencies in letter-sound correspondence. The variation in the use of the "Ы" letter was found to contribute to interference.

(4). Phonetic-graphical interference: Difficulties arise when students struggle to distinguish between phonetic and graphic features of Kazakh and Russian. For example, confusion occurs when writing the sounds [н] vs. [н], [и] vs. [ый], and [й].

The study also found that intralingual orthographic interference is common in writing practice. This type of interference was categorized into three subtypes: habitual, grammatical, and phonetic.

(1). Habitual interference: Errors in the use of spacing, hyphenation, and compound words result from the mismatch between old writing habits and new rules. Mistakes such as "эр түрлі" and "мекен-жай" indicate the persistence of outdated writing habits. Intuitive spelling was also observed, where students wrote words incorrectly due to a lack of explicit knowledge of the rules. Examples include "көз қарас" and "дүние жүзі".

(2). Grammatical interference: Errors caused by the inability to distinguish between postpositions and suffixes. Examples include "Студентпен оқытушы" and "жазуда адамға әсер етеді", where confusion arises due to a misunderstanding of grammatical structures.

(3). Phonetic interference: Errors resulting from confusion in the relationships between phonemes, variants, and variations. For instance, incorrect spellings of "жайлы", "тамамдау", and "жаһандық" were identified as phonetic interference, caused by neglecting phonemic principles and

misunderstanding Kazakh vowel harmony rules.

To minimize these types of interference, the study highlights the necessity of enhanced instruction in orthographic rules and grapheme systems, with a focus on deepening students' understanding of phonetic and orthographic systems in Kazakh. It also recommends implementing phonetic exercises, interlingual teaching methods, writing-focused training, and explicit instruction on the distinct features of each language's writing system. These approaches are particularly important for reducing interlingual interference.

To minimize intralingual interference, the study suggests intensified orthographic instruction, including detailed explanations of grammatical and phonetic rules, phonetic training, and structured exercises aimed at improving writing literacy.

The study results emphasize the importance of researching orthographic interference in improving the national writing system. Identifying the causes of interlingual and intralingual interference and addressing them through comprehensive strategies contributes to the development of the national writing system. The proposed solutions enhance the effectiveness of the education process and improve students' writing skills in Kazakh.

As noted earlier, the analysis confirmed the existence of two types of orthographic interference: intralingual and interlingual.

- Intralingual orthographic interference is associated with lack of knowledge or disregard for spelling norms and the opposition of "new" vs. "old" rules, where writing based on habit takes precedence over rule-based writing. This issue is most frequently observed in cases involving the writing of words together, separately, or with a hyphen.

- Intralingual orthographic interference can be further divided into habitual, grammatical, and phonetic interference. Each type reflects specific difficulties at different linguistic levels, providing a deeper understanding of the sources of orthographic errors.

This type of orthographic interference is most commonly observed in words written together, separately, or with a hyphen. It arises during adaptation to changes in linguistic norms and is caused by the modification of spelling rules and writing habits.

A habitual process refers to the stabilization of a specific spelling norm or rule at a given stage. This process

occurs when a particular spelling form becomes ingrained in the writer's cognitive framework. For example, words that were previously written together may now be written separately or with a hyphen, but writers continue to rely on old spelling habits, leading to errors.

Examples of words written together, separately, or with a hyphen:

- әр түрлі / әр-түрлі → Correct: әртүрлі
- жан талас (жан талас өмір) → Correct: жанталас

өмір

- дүние жүзі → Correct: дүниежүзі
- адам зат → Correct: адамзат
- түп нұсқа → Correct: түпнұсқа
- қос тілділік → Correct: қостілділік
- кез-келген → Correct: кез келген
- ара-қатынас → Correct: арақатынас
- ат салысу → Correct: атсалысу
- мекен-жай → Correct: мекенжай
- алғы шарт → Correct: алғышарт
- көз қарас → Correct: көзқарас
- ісшара → Correct: іс-шара
- алақұла → Correct: ала-құла

The causes of incorrect spelling can be attributed to two main factors:

- (1). Habitual process – A linguistic norm that existed at a particular stage and was widely used in practice.
- (2). Intuitive writing – Writing words based on intuition rather than knowledge of the rule.

For example, the word әртүрлі has historically been written both together and separately. The unconscious habitual process is evident, as this word was once commonly written separately. This orthographic norm became ingrained in linguistic consciousness. Writers unfamiliar with the updated spelling norms from the Kazakh Language Orthographic Dictionary (2013) may continue to write it the old way, resulting in spelling errors. This is an example of psycholinguistic challenges in spelling acquisition.

Similarly, words such as қостілділік, арақатынас, мекенжай, алғышарт are specified as compound words in the Orthographic Dictionary (2013).

The increasing number of compound words is driven by two factors:

- (1). The semantic principle of language development
- (2). The tendency toward linguistic economy – It is

easier and more efficient to perceive a single word unit rather than two separate parts.

Currently, the number of compound words is increasing due to linguistic and psycholinguistic factors. However, the process of standardizing compound words does not happen instantly—words undergo linguistic practice in different spellings before one form is officially codified.

For example, the word мекенжай was historically written in various forms:

- In the Orthographic Dictionary (1963), it was written separately.

- In the Orthographic Dictionary (1978), it appeared with a hyphen (мекен-жай).

- In the Orthographic Dictionaries from 1988, 2005, 2008, and 2013, it was officially codified as a compound word (мекенжай).

Professor K. Kuderinova explains this phenomenon as follows:

“In modern Kazakh spelling, the word жай (‘place’) is not only used in мекенжай but also in many other words such as қонақжай, еружай, егінжай, орынжай, жағажай, саяжай, әуежай, жылыжай, кемежай, қонысжай, панажай, тұрақжай. These words historically carried the meaning of ‘location, building, or structure.’ Initially, мекен and жай were used synonymously, leading to the early hyphenated form мекен-жай in the 1970s. Over time, the second part (жай) became a bound morpheme, and in the 2000s, it was officially codified as a compound word (мекенжай).”

Thus, while rules exist, practical spelling usage often differs due to automatic cognitive processes.

When writing, we often rely on ingrained, automated cognitive patterns rather than actively considering spelling rules. Changes in spelling norms disrupt this automatization, creating difficulties for writers. This process is particularly evident in orthographic interference caused by habitual writing patterns.

The degree of orthographic interference depends on various factors, including:

- The writer’s age
- Education level
- Frequency of written language use
- Degree of responsibility in writing

Thus, habitual processes in orthographic interference

occur due to deeply ingrained linguistic habits, and their replacement with new knowledge takes time.

Table 1 illustrates habitual and intuitive processes in spelling errors identified in student essays.

These results highlight the key psycholinguistic and linguistic factors contributing to orthographic interference and inform strategies for improving spelling norms.

Intuitive orthography refers to writing words according to phonetic principles, disregarding complex spelling rules and exceptions that may challenge both language learners and native speakers. It aligns with the idea that words should be written as they sound, rather than following established orthographic conventions.

As a unique reflection of linguistic cognition, intuitive orthography requires an analysis of cognitive processes such as perception and thinking to understand spelling difficulties in writing practice.

For example, words such as қоз қарас, жан талас, дүние жүзі, адам зат, түп нұсқа, алақұла, ісшара appear in both separate and compound forms due to the writer’s intuitive decision-making. The tendency to write these words separately is not due to habit but rather stems from phonetic logic and visual association.

- A writer with strong phonetic logic may spell words exactly as they are pronounced.

- If a writer imagines or hears words as separate units, they will intuitively write them separately, even if the official rule states otherwise.

Thus, despite the rule specifying that a word should be written together, a writer may still intuitively separate it due to individual perception.

In addition to phonetic logic, visual association also influences spelling. If a writer associates a word’s spelling with its external appearance or with similar-looking words, they may subconsciously deviate from the standard norm.

This phenomenon plays a role in word codification, as it allows linguists to identify language units that are undergoing standardization. The existence of linguistic variability is directly linked to intuitiveness, as competing word forms emerge before one is officially codified.

The analysis of habitual and intuitive processes confirms that intralingual orthographic interference is responsible for these spelling errors. This interference is characterized by the interaction of different spelling rules, where

Table 1. Habitual and Intuitive Spelling Processes.

№	Habitual Process (Writing Based on Prior Knowledge)	Intuitive Process (Writing Based on Intuition)
1	әр түрлі / әр-түрлі	қоз қарас
2	қос тілділік	жан талас
3	кез-келген	дүние жүзі
4	ара қатынас	адам зат
5	мекен жай/ мекен-жай	Түп нұсқа
6	ара қатынас	алақұла
7	ат салысу	ісшара
8	алғы шарт	

Table 2. Intralingual Orthographic Interference.

Habitual Process (Writing Based on Prior Knowledge)	Interference Type (Rule-Rule Interaction)	Intuitive Process (Writing Based on Intuition)	Interference Type (Rule-Association Interaction)
әр түрлі/әр-түрлі	Separate and hyphenated spelling	қоз қарас	Phonetic logic, visual association
қос тілділік	Root word spelling	жан талас	Phonetic logic, visual association
кез-келген	Hyphenated spelling	дүние жүзі	Phonetic logic, visual association
ара қатынас	Root word spelling	адам зат	Phonetic logic, visual association
мекен жай/мекен-жай	Separate and hyphenated spelling	түп нұсқа	Phonetic logic, visual association
ара қатынас	Root words	алақұла	Phonetic logic, visual association
ат салысу	Root words	ісшара	Phonetic logic, visual association
алғы шарт	Root words		

the spelling norm for separate words influences the rule for writing words together, and vice versa.

Table 2 illustrates the types of intralingual orthographic interference observed in students' writing.

Intralingual grammatical interference occurs when one grammatical structure interferes with another. This form of orthographic interference is particularly evident in cases where writers fail to differentiate between function words and affixes.

While the previous example demonstrated rule-rule interference, in this case, the interference occurs between grammar and orthography.

Phonetic and grammatical similarities between function words and suffixes contribute to grammatical-orthographic interference.

Examples of grammatical interference due to phonetic similarities include:

Incorrect Form	Correct Form
студентпен оқытушы	студент пен оқытушы
жазуда адамға әсер етеді	жазу да адамға әсер етеді
ең басында ЭИ деп қарастырсада	ең басында ЭИ деп қарастырса да
оданда басқа	одан да басқа
ешқандай қатысы болмасада	ешқандай қатысы болмаса да

Endings and Postpositions:

Examples: -пен / пен, -да/да, -де/де.

Intralingual orthographic interference is also observed in the spelling of disharmonic syllable words. In general, writing disharmonic words in Kazakh orthography presents difficulties.

In certain positions, the opposition between back and front vowels becomes “obscured,” making it considerably difficult to distinguish whether a vowel is front or back. This results in challenges in writing practice. Examples include:

Incorrect Form	Correct Form
а-кі-рет	а-қы-рет
құ-ды-рет	құ-ді-рет
ла-гі-нет	ла-ғы-нет
ке-се-пат	ке-са-пат
қа-бы-лет	қа-бі-лет
мү-бә-рак	мү-бә-рек
қа-ре-кет	қа-ре-кет
тә-кап-пар	тә-кәп-пар
қа-гі-лез	қа-ғы-лез
тақ-сы-рет	тақ-сі-рет
қа-сы-рет	қа-сі-рет
тау-кі-мет	тау-қы-мет
та-кі-лет	та-қы-лет
қо-ша-мет	қо-ше-мет

Grammatical Similarity: The Similarity in the Forms of Case

Firstly, when a back and front vowel meet, the consonant in between harmonizes with the vowel it is paired with. For example:

- қа-ғы-лез (not қа-гі-лез, not қағ-іл-ез),
- тә-кәп-пар (not тә-кап-пар).

Spelling қагілез, тәкаппар, тақілет would disrupt the syllabic structure of Kazakh words, as syllables such as -кі, -ка are not typical for Kazakh phonetics.

Secondly, among the above-mentioned words, those such as қабілет, қарекет, тақсірет have an alternative syllabic division:

- қа-бі-лет / қа-бы-лет,
- қа-ре-кет / қа-ра-кет,
- тақ-сі-рет / тақ-сы-рет.

The second variant (қа-бы-лет, тақ-сы-рет) leads to pronunciation as қа-был-ет, тақ-сыр-ет, қа-ра-кет, where the consonants *p* and *л* assimilate to the *ы* vowel, making them indistinguishable from free word combinations such as қабыл ет, тақсыр ет, қара кет.

By distinguishing the syllabic boundaries as қа-бі-лет, тақ-сі-рет, қа-ре-кет, the consonants *б*, *с*, *р* remain adapted to *і*, *е* vowels, preserving their phonetic integrity and differentiating them from free word combinations.

One type of intralanguage interference is phonetic interference. Phonetic interference arises from confusion in the “phoneme – variant – variation” relationship. This type of interference results from a failure to distinguish between phonemes and sounds.

As a result, writers may mistakenly spell words as they are pronounced. Examples include:

- жайлы → жәйлі,
- тамамдау → тәмәмдау,
- тақырып → тақырыб,
- жазса → жасса,
- жаһандық → жақандық.

Such errors stem from a misunderstanding of the phonematic principle of Kazakh orthography. If writers understood that Kazakh orthography is based on the phonematic principle, such errors would not occur. According to this principle, only the primary variant of a phoneme is marked in writing, while additional variations are not. The primary variant serves as the basis for distinguishing word meanings.

To reduce intralanguage interference, it is crucial to explain the differences between phoneme – sound – letter.

These relationships are reflected in phonology through “invariant – variant – variation”:

- The invariant phoneme is represented by a letter in writing.
- The variant of an invariant phoneme (e.g., басшы → башшы) and
- The variation (e.g., хатшы → хатчы) are heard in speech but not marked in writing.

Failure to distinguish between phonemes and sounds leads to variant and variation phenomena appearing in spelling. For example:

- In шай and жай, the vowel’s primary phoneme is *a*, but it is realized as [ə] when adjacent to *ш* and *ж*:
- шай (written) – шәй (spoken),
- жай (written) – жәй (spoken).

Spelling тамамдау as тәмәмдау or жазса as жасса also indicates reliance on the phonetic principle. Writers naturally use тәмәмдау in spoken language rather than тамамдау. Similarly, тақырып may be written as тақырыб due to a failure to recognize the phonematic principle.

Furthermore, the fact that words in Kazakh do not end in *б* (except for borrowed words such as клуб, штаб, актив, штатив, педагог, монолог, округ, араб, жад) suggests that a lack of knowledge about this rule contributes to orthographic interference.

It is also worth noting that spelling тақырып as тақырыб may result from both intralanguage and interlanguage interference. Determining which type of interference is at play requires interviewing the writer to understand their linguistic background and writing habits.

Intralanguage phonetic-orthographic interference is also observed in the spelling of the global word as жақандық instead of жаһандық. This orthographic issue is related to the phonetic status of the sounds *қ*, *х*, and *һ*. It can be seen that these three sounds share many common features. From the perspective of audibility, the sounds *қ*, *х*, and *һ* are consonantal, voiceless, fricative, and articulated in the middle of the tongue, which leads to difficulties in writing due to their acoustic-articulatory characteristics. However, Professor Ä. Jünisbek states: “There are no glottal sounds in the Kazakh language. Therefore, replacing the borrowed letters *x* and *h* with the symbol *қ* is sufficient.” This conclusion suggests that the linguistic mechanism of Kazakh writers’ thinking is well-developed.

In writing, the consideration of phonetic, positional, and combinatorial changes in marking causes orthographic interference. Therefore, it is essential to explain to writers that positional and combinatorial sound variations, that is, sounds with different additional meanings, belong only to spoken language. To reduce this type of orthographic interference, it is possible to clarify the weak positional variations of the invariant phoneme and explain the writing system through phonetic-phonological and orthographic models.

To minimize the phonetic-phonological type of orthographic interference, attention should be paid to the following important issues related to the differences between phonemes and sounds:

(1). Kazakh orthographic rules are based on the phonetic-phonological principle. That is, Kazakh orthography is mostly based on phonemes rather than sounds.

(2). Allophones do not affect orthography. For example, the sound *д* has four different variations. However, only the main invariant form is considered and marked in writing:

- [д] when adjacent to back unrounded vowels;
- [д'] when adjacent to front unrounded vowels;
- [д°] when adjacent to back rounded vowels;
- [д''] when adjacent to front rounded vowels.

(3). The function of phonemes in distinguishing meaning. Proper recognition and usage of phonemes help avoid errors that can change the meaning of words. For instance, replacing one phoneme with another (e.g., /с/ and /к/ in *сан*, *нан*, *қан*) alters the meaning of the word.

A clear understanding of the differences between phonemes and sounds helps in the correct application of spelling rules, avoiding errors in writing, and better understanding the structure of the language. Phonemes form the basis of orthographic rules, while sounds represent their actual realization in speech.

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One of the complex issues in Kazakh orthography is the attachment of affixes to the root. In the Kazakh language, the addition of affixes to the root word depends on the law of harmony. According to harmony, the affix is attached in accordance with the backness or frontness of the

final sound of the root word. A back root takes a back affix: *балалар+ға*, *мектеп+тер*; a front root takes a front affix: *көше+ге*, *күні+мен*. This is one of the fundamental and main rules in the Kazakh language. Such a rule does not exist in Russian or English. The differences in linguistic rules between such languages cause interlanguage orthographic interference.

Due to this issue, the following errors have been found in students' written work:

(1). *Феномен+ға* → *Феноменге*: The word *феномен* is front, so the front affix *-ге* is attached.

(2). *Аспектi+дан* → *Аспектіден*: The word *аспект* is front, so the front affix *-ден* is attached.

(3). *Еңбектер+дың* → *Еңбектердің*: The word *еңбектер* is front, so the front affix *-дің* is attached.

(4). *Жеткілік+сыз* → *Жеткіліксіз*: The word *жеткілік* is front, so the front affix *-сіз* is attached.

The occurrence of such errors can be explained by the writer's incomplete understanding of the law of harmony in Kazakh, that is, a lack of understanding of morphological and phonetic rules or low linguistic proficiency. To solve this problem, it is necessary to improve the writer's linguistic knowledge and develop tools that explain the natural process of language development and the features of the phonetic system.

Interlanguage orthographic interference is often associated with graphemic characteristics. That is, it can be understood as the incorrect spelling of capital letters and foreign words according to established norms. Interlanguage orthographic interference is the influence of one language's orthographic system on another language's orthography.

Features of the Graphemic System

Each language has its own graphemic system. For example, similarities between Cyrillic and Latin alphabets cause interlanguage interference. Although Kazakh and Russian are not genetically related languages, there are significant graphemic similarities. These similarities cause orthographic interference when using the language.

In writing practice, orthographic interference occurs in the spelling of Kazakh words involving the following sounds:

- [Ғ] vs. [Ғ]
- [Ң] vs. [Ң]
- [Ү], [Ү] vs. [Ү]

- [F] vs. [r]

For example, in the Kazakh word қарама, the replacement of the letter қ with к (карама) is due to the influence of the Russian language. These errors occur not only because of graphemic similarities but also due to a lack of knowledge about phonetic systems, limited writing practice, and the influence of the linguistic environment.

To solve this problem, it is necessary to provide language learners with in-depth instruction on Kazakh orthographic rules and develop writing skills in the Kazakh language.

Graphemic interference is the result of the mutual influence of the writing systems of two or more languages, leading to errors. This phenomenon is especially common in multilingual environments and among language learners. Since English is taught alongside Russian in Kazakhstan, graphemic interference is a widespread issue.

The rules for using capital letters in orthography differ from other orthographic rules and form a distinct system.

In Kazakh orthography, the use of capital and lowercase letters is based on semantic, syntactic, and sometimes symbolic principles. The semantic principle considers lexical units according to their contextual meaning (proper nouns are written with a capital letter), while the syntactic principle is used to distinguish parts of a text (a new sentence begins with a capital letter). The semantic principle is also referred to in linguistic literature as ideographic or lexical. The symbolic principle in capital letter usage is applied when emphasizing a particular word within a sentence.

Typically, proper nouns and the first letter of the first word in a sentence are capitalized, while common nouns and all other words in the sentence are written in lowercase. Additionally, the following categories are written with capital letters:

- Anthroponyms (personal names),
- Toponyms (geographical names),
- Theonyms (religious terms),
- Zoonyms (animal names),
- Astronyms (names of celestial bodies),
- Chrononyms (time periods associated with historical events),
- Ideonyms (names of cultural or ideological concepts).

Some common nouns, when used with emphatic into-

nation or as a symbol of something, are also written with a capital letter. To determine whether a word should be written with a capital or lowercase letter, it is first necessary to distinguish between common and proper nouns.

Proper nouns transition quickly from one linguistic system to another. The creation of proper nouns is a continuous process. As public consciousness and social functions become more complex and new forms emerge, proper nouns are also created anew, changing their meaning and place in the language.

For example, debates frequently arise regarding whether to exclude the names of books, periodicals, and transportation vehicles from the category of proper nouns. Some researchers (Суперанская) argue that trademarks and ethnonyms should not be considered proper nouns. This makes it more challenging to classify proper nouns, distinguish their types and categories, describe them, and establish rules for their capitalization.

One of the significant difficulties in capitalization stems from the complexity of objects, particularly their multi-component nature. For instance, consider the names:

- Абай атындағы Қазақ ұлттық педагогикалық университеті (Abai Kazakh National Pedagogical University),
- А.Байтұрсынұлы атындағы Тіл білімі институты Фонетика бөлімі (A. Baitursynuly Institute of Linguistics, Phonetics Department),
- Әл-Фараби атындағы Қазақ ұлттық университеті Тарих, археология және этнология факультеті (al-Farabi Kazakh National University, Faculty of History, Archaeology, and Ethnology), etc.

In the last example, the name consists of three parts:

- (1). әл-Фараби атындағы (al-Farabi Kazakh National University) – al-Farabi is a proper noun within the name;
- (2). Қазақ ұлттық университеті (Kazakh National University) – this part consists of three keywords. Should all three be capitalized, or just the first one?
- (3). тарих, археология және этнология факультеті (Faculty of History, Archaeology, and Ethnology).

To clearly indicate the boundaries of a multi-component name and emphasize its individuality, it is practical to capitalize only the first word. However, some names follow different principles, such as:

- Алматы үздіксіз білім беру университеті (Almaty

University of Continuing Education),

- Қазақстан Республикасы Ғылым және жоғары білім министрлігі (Ministry of Science and Higher Education of the Republic of Kazakhstan),

- Қазақстан Республикасы Мәдениет және спорт министрлігі (Ministry of Culture and Sports of the Republic of Kazakhstan),

- Білім, ғылым және мәдениет мәселелері ұйымы – ЮНЕСКО (UNESCO) (United Nations Educational, Scientific and Cultural Organization (UNESCO)),

- Орталық мәдениет және демалыс саябағы (Central Park of Culture and Recreation), etc.

Here, two capitalization patterns emerge: in one, words such as Мәдениет (Culture) and Білім (Education) are capitalized, while in the other, they are written in lowercase. This distinction depends on the classification of білім (education) and мәдениет (culture) as parts of larger administrative units. In Білім және ғылым министрлігі (Ministry of Science and Higher Education), the phrase represents a single large entity, making it logical to capitalize only the first word of the multi-component name.

However, this rule conflicts with the capitalization of geographical names containing multiple components. According to the rules, if a name describes two objects, a hyphen should be used between them, and the second part should also be capitalized, e.g.:

- Беломор-Балтық каналы (Belomor-Baltic Canal),

- Соколов-Сарыбай кен байыту орны (Sokolov-Sarybay Mining and Processing Plant).

Here, two key factors stand out:

(1). Both components represent geographic locations (land or water features).

(2). Each retains its distinct and independent identity.

Similarly, the name Баспасөз және бұқаралық ақпарат істері жөніндегі Ұлттық агенттік (National Agency for Press and Mass Media Affairs) can appear in three different forms in writing:

(1). Баспасөз және бұқаралық ақпарат істері жөніндегі Ұлттық агенттік (National Agency for Press and Mass Media Affairs) – full form.

(2). Баспасөз агенттігі (Press Agency) – retaining only the first component and the keyword агенттік (agency).

(3). Ұлттық агенттік (National Agency) – a shortened form.

The latter two are abbreviated names that have developed naturally. Such abbreviated names are capitalized because they serve to distinguish the entity from general terms such as мәдениет басқармасы (cultural management) or ғылыми-техникалық кеңес (scientific-technical council). This also helps maintain the proper noun status of the name.

Another important issue concerns the capitalization of key (core) words in multi-component names. Regardless of their position in the name, keywords should be capitalized. However, when two or three keywords appear together, only the first one is capitalized, e.g.:

- Қазақстан Республикасының Мемлекеттік орталық мұражайы (State Central Museum of the Republic of Kazakhstan),

- Қазақстан Республикасының Мемлекеттік қызмет істері агенттігі (Agency for Civil Service Affairs of the Republic of Kazakhstan).

This leads to the question of which words should be classified as keywords.

Among complex proper names, the individualization of syntactic phrases is a frequent linguistic phenomenon. It is important to distinguish names that have not undergone differentiation, meaning those that could be perceived as either proper or common nouns depending on context.

For example, қылмыстық кодексі (criminal code) and экономикалық форум (economic forum) can function as either proper or common nouns. Context determines their interpretation. In the phrase білім, мәдениет, спорт министрліктерінде (in the ministries of education, culture, and sports), the use of the plural suffix indicates that the phrase refers to general ministries rather than specific ones, so the words are written in lowercase.

Similarly, distinguishing between ресми және бейресми атаулар (official and unofficial names) also affects capitalization.

Such complex issues in writing arise due to two main factors:

(1). A lack of understanding of linguistic rules.

(2). Orthographic interference.

Orthographic interference is particularly noticeable in the capitalization of names of жоғарғы мемлекеттік ұйымдар мен құрылымдар, жоғарғы қызметтер, басқарылатын атаулар (high-level state organizations, structures, positions, and other ranked names), especially when

comparing Kazakh and English orthography.

In English, capitalization rules are often transferred incorrectly into Kazakh, especially in titles. For example, in Kazakh, a title such as «Сапаға қойылатын әмбебап талаптарға сай болу» (Complying with Universal Quality Requirements) should only have the first word capitalized. However, many writers incorrectly apply English capitalization rules, writing:

- «Сапаға Қойылатын Әмбебап Талаптарға Сай Болу»,
- «Көшбасшылық Стильдердің Барлық Озық Тәжірибелерін Біріктіру»,
- «Көшбасшылық Стильдердің Шектеулерін Жою».

This happens due to a misunderstanding of the differences between Kazakh and English orthographic rules, the dominant influence of English in everyday communication, and the automation of English-based writing conventions.

Each language has its own unique phonetic-phonological system

Interference in the correspondence between letters and sounds occurs in cases where graphemes in Russian and Kazakh appear similar. Although the alphabetic order and composition of Russian and Kazakh share similarities, Kazakh has its own phonetic characteristics that create significant differences.

For example, the Kazakh sound [к] does not correspond to the Russian sound [к], as they possess different phonetic characteristics. Similarly, [ң], [ө], [ү] are frequently used in Kazakh, but these sounds do not exist in Russian. These distinctions become evident in writing practices, particularly when representing native Kazakh phonemes.

Even when letter shapes appear similar, their phonetic equivalents are influenced by the national identity of the language. This is clearly demonstrated when comparing certain letters and sounds in Russian and Kazakh. Although the letter “ы” looks the same in both languages, its function, usage, and meaning differ. These differences can be classified as follows:

a) Phonetic Differences

A comparison of Kazakh and Russian reveals several significant phonetic distinctions, primarily in terms of the number and composition of phonemes:

- Kazakh has 29 phonemes: 9 vowels and 17 conso-

nants.

- Russian has 43 phonemes: 6 vowels and 37 consonants.

The key difference lies not just in the total number of phonemes but in the qualitative and structural differences between vowel and consonant systems in the two languages. This distinction is closely linked to the phonetic nature of each language and the quantitative and qualitative characteristics of their phonemes.

In phonetics, the concept of “sound quality” is closely related to articulatory-acoustic properties. Vowel phonemes are classified based on the following features:

- Tongue position: back (velar) and front (palatal) vowels.
- Jaw openness: close (high), mid, and open (low) vowels.
- Lip rounding: rounded (labialized) and unrounded vowels.

For consonants, place and manner of articulation, presence of voicing, and degree of noise are relevant characteristics.

One key typological distinction in Russian consonants is palatalization, which does not exist in Kazakh. In Russian, consonants can be hard (non-palatalized) or soft (palatalized), and these contrasts function phonemically (i.e., they distinguish words). Some examples include:

- дал – даль (dal – dal’)
- мол – моль (mol – mol’)
- сидит – сидеть (sidit – sidet’)
- ходок – ходьба (khodok – khod’ba)

Kazakh does not have contrastive palatalized consonants similar to those in Russian. This difference creates challenges for Kazakh speakers in acquiring Russian orthoepic norms, particularly in pronouncing palatalized consonants such as л, ж, ш, д, т, etc.

However, the “softness” of consonants in Kazakh and Russian is not identical. Russian soft consonants tend to be much more palatalized than their Kazakh equivalents. In many cases, Kazakh speakers substitute palatalized Russian consonants with slightly “softer” Kazakh consonants, though they may not fully replicate the degree of palatalization found in Russian.

Thus, in certain phonetic positions, Russian palatalized consonants may not be fully palatalized when pronounced

in Kazakh. This reflects phonetic interference between the two languages and highlights the challenges of adapting Russian phonological structures within a Kazakh phonetic framework.

As established in linguistic typology, in languages where vowels predominate, they tend to play an active role, while consonants are passive. Conversely, in languages with fewer vowels, such as Russian, consonants play an active role.

A prime example of the first type is Kazakh, where vowels play a dominant role. In Kazakh, the pronunciation of consonants as either velar (back) or palatal (front) depends on the accompanying vowel. Unlike in Russian, there is no full-fledged phonological opposition based on consonant hardness and softness. Consider the following examples:

- бар – бәр (bar – bär),
- мал – мәл (mal – mäl),
- тор – төр (tor – tör),
- тал – тел (tal – tel).

In other words, harmony in Kazakh applies not only to vowels but also to consonants (vowel harmony and consonant assimilation). In contrast, Russian, which has only six vowel phonemes, relies on consonants to determine vowel hardness or softness. This phenomenon can be illustrated by the following Russian examples:

- мал – мял (mal – myal),
- танк – тянет (tank – tyanet),
- сад – сядь (sad – syad'),
- воз – вяз (voz – vyaz).

Russian is a language with mobile stress, meaning that stress can fall on the root or affixes of a word. Moreover, stress in Russian often serves as a grammatical marker that differentiates word forms.

In contrast, in Kazakh, stress is predominantly fixed and falls on the last syllable of the root word. Because of this fixed stress pattern, Kazakh does not use stress as a productive grammatical tool.

Additionally, when Russian words are borrowed into Kazakh, changes in vowels are more frequent than changes in consonants. This reflects the dominant role of vowels in Kazakh phonology.

In Russian, phonological oppositions are mainly consonant-based, while in Kazakh, phonological contrasts are primarily vowel-based. This fundamental difference in

phonological structure contributes to orthographic interference when switching between the two languages.

b) Functional Differences

The usage of the letter “ы” differs significantly between Kazakh and Russian:

- In Kazakh, the “ы” sound can appear at the beginning, middle, or end of words and is widely used across the lexicon.

- Examples: кыз, мұрын, қыстау.

- In Russian, the “ы” sound typically appears only in the middle or end of words.

c) Semantic Differences

Each language assigns different functional and semantic roles to its sounds.

- In Kazakh, the “ы” sound is crucial for distinguishing meaning.

- Examples: қал (“stay”) vs. қыл (“do/make”).

- In Russian, “ы” also plays a meaningful role, but its function differs from that in Kazakh.

d) National Identity of Sound Systems

Each language’s phonetic system is deeply intertwined with its culture and history. While some letters in Russian and Kazakh may appear graphically identical, their phonetic equivalents differ significantly due to the distinct phonological nature of each language.

Thus, even when written forms seem the same, their pronunciation and functional roles in phonetic contexts can vary considerably between the two languages.

If graphemic, phonological, and phonetic differences are not considered in writing, orthographic interference becomes widespread.

To summarize the above, this type of interference is frequently observed in learners of the Kazakh language or bilingual writers. Interlingual orthographic interference often appears in the writing of language learners and may hinder their proper acquisition of the language. To address this issue, it is crucial to first explain the differences in orthographic rules and grapheme systems to language learners.

Interference related to the correspondence between letters and sounds in Kazakh and Russian appears at various levels. To eliminate this interference, a deep understanding of the phonetic and orthographic systems of both languages is necessary, along with clear explanations of these differences to language learners. Phonetic-graphic interference

arises when students fail to properly distinguish the phonetic and graphic features of Kazakh and Russian.

Studies by linguists indicate that this issue is widespread and that teaching orthographic rules, practicing phonetic exercises, and using interlingual teaching methods are essential for overcoming it. Graphic interference is a frequent challenge in interlingual education.

To reduce interference in writing between the Kazakh sounds [н] and [Һ], [и] and [ыӏ], [й] and [йӏ], it is essential to teach students the phonetic and orthographic features of the Kazakh language. Addressing this interference will help students develop correct and literate writing skills in Kazakh.

4. Conclusions

The study of orthographic interference plays a crucial role in the process of improving national writing. Identifying the causes of orthographic errors and implementing measures to reduce them ensures the stability of national writing norms. Intralingual orthographic interference arises from conflicts between writing habits and orthographic norms. Resolving these conflicts not only contributes to the development of national writing but also serves as a foundation for writing culture.

Updating educational programs is one of the key steps in improving national writing. Developing modern teaching materials focused on orthographic norms can help reduce intralingual interference. The use of concrete examples and interactive exercises in the learning process allows for a more practical understanding of spelling rules.

Furthermore, modern technologies play a significant role in improving national writing and reducing orthographic interference. Interactive tools and automated proofreading systems help identify and correct errors promptly.

In the process of enhancing national writing, it is also essential to focus on the cognitive processes of writers, particularly in mastering phonetic logic and understanding the fundamental principles of the national writing system.

Interlingual orthographic interference is a relevant linguistic phenomenon that occurs in multilingual environments where multiple languages are learned and used simultaneously. This phenomenon is particularly evident in the interactions between Kazakh, Russian, and English. The primary cause of interference is the differences in the graphemic and

phonetic systems of these languages. Graphemic differences often lead to interference between Kazakh and Russian. For example, the mismatch of Kazakh sounds ([к] vs. [к], [Һ] vs. [Һ], [Ү] vs. [ү]) with their Russian equivalents results in spelling errors. These mistakes arise due to a lack of deep understanding of phonetic systems, insufficient writing skills, and the influence of the linguistic environment. A clear example of this is the substitution of the letter [к] with [к] in the word “қапша”, which demonstrates the influence of Russian orthography. This confirms that graphemic differences in phonetic systems are a key factor in orthographic interference.

Additionally, differences in capitalization rules represent another form of graphical interference. Although the use of capital letters in Kazakh is similar to Russian, it differs from English, leading to frequent inconsistencies in writing.

In summary, studying orthographic interference in the process of improving national writing is an important direction that contributes to developing a literate writing culture and stabilizing orthographic norms. This process is effectively implemented through the improvement of educational programs, the use of modern technologies, and the development of cognitive processes.

Qualitative analysis has shown that the occurrence of orthographic errors is influenced by both linguistic and non-linguistic factors.

Linguistic factors include:

- Misinterpretation of linguistic features – inadequate mastery of phonetic or grammatical norms of a language.
- Lack of Kazakh-based thinking – reliance on the structure of another language in the thought process, which negatively impacts spelling.
- Automatic application of foreign language rules – unconscious adaptation of spelling or grammatical rules from one language to another, leading to errors.

Non-linguistic factors include:

- Neglect of general spelling rules – errors resulting from insufficient language knowledge or carelessness in applying rules.
- Low writing culture – a lack of attentiveness and responsibility in writing.
- Deficiencies in the education system – methodological shortcomings in language instruction and insufficient practical training.

To reduce interference, learners should receive in-depth instruction on orthographic rules and grapheme system differences. Strengthening the phonetic and orthographic proficiency of Kazakh learners, conducting phonetic exercises, and employing interlingual teaching methods are essential. Additionally, structured writing exercises and separate instruction on each language's unique writing system should be emphasized. These measures are particularly important for correcting interlingual interference.

To minimize intralingual interference, emphasis should be placed on deepening knowledge of orthographic, grammatical, and phonetic rules. Special attention should be given to phonetic exercises and structured tasks designed to enhance writing literacy.

By studying orthographic interference and applying measures to reduce it, it is possible to improve the quality of national writing, develop writing culture, and increase literacy levels. This process should be continuous and systematically implemented at all levels of the education system to achieve effective and lasting results.

Author Contributions

Conceptualization, N.A. and A.S. (Alfiya Soltanbekova); methodology, S.U.; software, T.R.; verification, A.S. (Alfiya Soltanbekova), M.Z.; formal analysis, A.S. (Ainagul Sadyk); research, N.A.; resources, T.R.; data processing, S.U.; writing —preparation of the initial project, A.N.; written review and editing, N.A.; visualization, A.S. (Ainagul Sadyk); author's supervision, S.U.; project administration, T.R. All the authors have reviewed the published version of the manuscript and agreed with it.

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Informed Consent Statement

Informed consent was obtained from all participants in the study.

Data Availability Statement

The study was conducted in accordance with the Helsinki Declaration and approved by the Institutional Supervisory Board (or Ethics Committee) named after the Akhmet Baytursinov Institute of Linguistics (Protocol Code No. 15 dated 02/19/2025) for research involving researchers.

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Conflicts of Interest

The authors declare that there is no conflict of interest.

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