The Impact of Contrastive Analysis on Turkish Linguistic Competence: An Empirical Investigation Among Students in Kazakhstan

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ABSTRACT

This study aims to examine the impact of contrastive analysis on the linguistic competence of Kazakh students. The study sample consisted of 66 basic-level Kazakh students studying Turkish as a foreign language at Abai Kazakh National Pedagogical University. A quasi-experimental pretest-posttest control group design, a quantitative research method, was utilized in the study. The study included an experimental group that received contrastive analysis instruction and a control group that followed traditional teaching methods. Data were collected through the Turkish Level Test and Turkish Proficiency Exam, both developed by Gazi TÖMER, along with a personal information form to collect variables affecting outcomes. A mixed-design ANOVA was used to examine both between-group differences and within-subject changes over time. The results revealed a statistically significant interaction effect, showing that contrastive analysis had a positive impact on the students' Turkish linguistic competence. Based on these findings, it was concluded that contrastive analysis supported Kazakh students' acquisition of Turkish structures. Therefore, it is recommended that foreign language instruction—especially between typologically similar languages—integrate contrastive approaches and utilize the native language as a translanguaging resource.

KEYWORDS

Contrastive analysis; language transfer; foreign language pedagogy; Kazakh students; linguistic competence.

INTRODUCTION

The language's role is closely related to its application in the educational system. Despite its deep historical roots, Turkish has yet to achieve full integration into educational frameworks. Currently, it is taught as a foreign language in various institutions both in Türkiye and internationally. Türkiye's rich cultural heritage and strategic geopolitical position encourage foreigners to learn Turkish for a range of purposes. This interest has especially increased in Central Asia, where historical and cultural connections have fostered a growing demand for Turkish language education.

To address this demand effectively, researchers have focused on teaching Turkish, particularly to Turkic language speakers. Various studies (Açık, 2018; Akalın, 2005; Alyılmaz, 2010; Çağlar, 1999; Durmuş & Kılınç, 2021; Er, 2016; Kurt, 2010; Taştekin, 2015) have emphasized the need to investigate the teaching of Turkish to Turkic speakers as a distinct field with specialized methods. Nevertheless, empirical evidence on the effectiveness of contrastive materials designed for closely related Turkic languages like Turkish and Kazakh remains limited. Turkic learners quickly grasp some linguistic features, leading to misconceptions like "It's easy for me; I already know this; I can learn quickly." Such misconceptions may result in learners not achieving the desired proficiency and losing motivation, particularly if instruction does not specifically address linguistic interference.

Researchers (Atilla, 2001; Biçer, 2017; Çağlar, 2018; Kumsar & Kaplankıran, 2016; Özdemir & Arslan, 2018; Uğurlu, 2004) attribute these challenges to similarities and differences between the source and target languages, particularly in alphabetic and grammatical features. Kumsar and Kaplankıran (2016) classify the errors made by Kazakh students as negative transfers stemming from issues such as the alphabet, false cognates, word order, pronunciation, affixes, and sentence structure. Ercilasun (2007) highlights common sound shifts between Kazakh and Turkish (e.g., s>ş, ş>ç, j>y, k>g, t>d, m>b, b>v, ü>ö, u>o, p>f) and emphasizes the importance of addressing these similarities and differences in language instruction.

Turkic learners often struggle due to the lack of textbooks tailored to their linguistic and cultural backgrounds. Several studies (Açık, 2008; Alyılmaz, 2010; Biçer et al., 2014; Emiroğlu, 2014; Güleç & İnce, 2013; Kurt, 2010; Şengül, 2014; Taştekin, 2015) have addressed these challenges and emphasized the need for programs that account for linguistic similarities, differences, and cultural connections. Taştekin (2015) calls for the development of specialized textbooks designed specifically for Turkic learners. Teaching Turkish by building on learners' native language knowledge enhances both efficiency and outcomes. The learners' first language plays a foundational role in foreign language acquisition, and strategic use of it can enhance instruction (Leontiev, 1970; Marton, 1981). According to Bialystok (2003), the brain processes new knowledge by extending existing information or forming new perspectives. While contrastive approaches have been widely discussed, few studies have tested their effectiveness with structured materials designed for Kazakh learners. Therefore, identifying structures that lead to negative transfers and designing targeted teaching materials are essential for teaching

Turkish to Turkic learners (Açık, 2018). This highlights contrastive analysis as a foundation for translanguaging, allowing learners to connect and build on their language resources.

Based on these factors, the study proposes using contrastive-based materials that highlight grammatical structures through translation, comparison, and contrastive analysis to help Kazakh learners of Turkish overcome common difficulties. The study examines whether such materials improve Kazakh students' linguistic competence in Turkish. Within this framework, two primary hypotheses were developed and tested:

1. There is a statistically significant difference in grammar test scores between the experimental group, which received contrastive analysis instruction, and the control group, which followed traditional teaching methods.

2. There is a statistically significant difference in composition writing skills between the experimental group, which received contrastive analysis instruction, and the control group, which followed traditional teaching methods.

LITERATURE REVIEW

Contrastive Analysis in Language Education

Grounded in behavioral psychology and structural linguistics, contrastive analysis examines linguistic similarities and differences within fields such as linguistics, Turkology, and language education. Researchers claim that native language habits affect foreign language learning (Keshavarz, 2011). Lado (1957) emphasized how individuals transfer both structural and cultural elements from their native language to a new one. This concept formed the basis of transfer or interference theory, which explores how comparing native and target language structures reveals areas of ease or difficulty. According to Lado (1957), structures similar to the native language are easier to acquire, while differing ones create learning challenges. Therefore, similarities support positive transfer, while differences result in negative transfer (Keshavarz, 2011).

In light of these perspectives, several researchers (Alatis, 1968; Fisiak, 1981; Fries, 1945; Keshavarz, 2011; Lado, 1957; Marton, 1981; Rivers, 1968; Sajavaara, 1981) have examined contrastive analysis from an educational standpoint. Fries (1945) emphasized that comparing the structures of native and target languages supports language teaching by identifying areas likely to cause learning difficulties. This understanding led to the development of strong, weak, and moderate hypotheses for applying contrastive analysis in foreign language instruction.

The strong hypothesis predicts learning challenges by comparing native and target language structures (Lado, 1957). Lee (1968) outlined its key assumptions: (a) habits from the mother tongue hinder foreign language learning; (b) structural differences between languages cause challenges; (c) the greater the differences, the greater the difficulty; and (d) comparing languages can help predict errors and guide instruction. The weak hypothesis views interlingual transfers as the source of learner errors in cross-cultural contexts (Keshavarz, 2011) and is considered more practical for foreign language teaching. Oller and Ziahosseiny (1970) proposed

a moderate hypothesis, suggesting that learners often face issues with phonetics and vocabulary. They recommended addressing phonetic and lexical differences only when necessary. However, not all structural differences lead to learning difficulties (Keshavarz, 2011). Language learning is affected by various linguistic, social, and emotional factors, with linguistic factors having the most direct impact on foreign language acquisition.

Many researchers (Keshavarz, 2011; Krzeszowski, 1981; Stockwell et al., 1965) have developed models for comparing native and target language structures. Marton (1981) claims that interlinguistic comparisons should serve educational purposes and be useful for teachers, students, and translators. Therefore, these comparisons should be clear and accessible rather than overly complex or lengthy. Whitman (1970) outlines key stages in contrastive analysis: description (analyzing phonology, morphology, and syntax), selection (choosing relevant structures for comparison), comparison (highlighting similarities and differences), and prediction (designing instructional materials to address potential negative transfer).

In other studies, contrastive analysis has been examined through multi-stage models. Johansson (2008) introduced a three-stage model involving language comparison, identification of negative transfers, and material development. Keshavarz (2011) described a five-step process: selection, description, comparison, prediction, and verification. Overall, the literature indicates that there is no universally accepted method for comparing interlingual structures.

Recent studies (Byrd, 2017; Elmajid et al., 2016; Laufer & Girsai, 2008; Mantasiah et al., 2018; Okičić & Osmankadić, 2014; Quarto, 2022) show that contrastive analysis enhances the understanding of language structures. It has proven effective in vocabulary instruction and in reducing student error rates. Additional research (Ara, 2021; Khansir & Pakdel, 2019; Kissová, 2020; Ulfayanti & Jelimun, 2018; Yıldız, 2016) supports its effectiveness in learning linguistic structures, particularly in phonology and morphology. These findings underscore the importance of contrastive analysis, especially when working with languages that are linguistically similar.

Contrastive Analysis and Linguistic Competence

Linguistic competence is essential for effective communication, as emphasized in various models of communicative competence (Bachman & Palmer, 1996; Canale & Swain, 1980; Celce-Murcia et al., 1995; Celce-Murcia, 2007; Van Ek, 1986). Chomsky (1980) defines it as the ability to generate and understand an infinite number of sentences using linguistic rules. Scholars (Byram, 1997; Jumanazarov, 2021; Kaplun, 2014; Larsen-Freeman & Anderson, 2011; Nassaji & Fotos, 2011; Richards, 2006; Van Ek, 1986) describe it as including phonology, morphology, vocabulary, syntax, and grammatical accuracy. Millrood (2014) connects linguistic competence with performance, highlighting its role in forming sentences, understanding codes, and applying grammar accurately. The updated Common European Framework of Reference for Languages (CEFR, 2020) identifies linguistic competence as a fundamental aspect of communicative competence, encompassing the range and control of vocabulary, grammar, and phonology.

Some scholars (Khansir, 2012; Kumaravadivelu, 2012; Sajavaara, 1981) point to methodological issues in applying contrastive analysis to language teaching, particularly in the linguistic treatment of language structures. While these concerns reveal key limitations—especially when contrastive analysis lacks a strong pedagogical basis—it can still be effectively aligned with language learning theories such as Canale and Swain's (1980) communicative competence model and the concept of translanguaging. For instance, contrastive analysis supports the development of linguistic competence, which Canale and Swain (1980) define as knowledge of grammatical rules. In teaching Turkish, it enables learners to grasp key grammatical patterns by contrasting differences in verb tense and word order between Kazakh and Turkish. This awareness activates prior linguistic knowledge and improves grammatical accuracy and precision, thereby strengthening overall language proficiency and laying the groundwork for communicative competence.

Language proficiency encompasses both receptive and productive skills, along with grammatical accuracy and communicative effectiveness (Bachman & Palmer, 1996; CEFR, 2020). Studies (Ara, 2021; Elmajid et al., 2016; Laufer & Girsai, 2008) show that contrastive analysis, when applied effectively, improves learners' overall language proficiency by raising awareness of structural patterns and minimizing negative transfer. Contrastive grammar instruction supports the development of syntactic control, vocabulary range, and grammatical accuracy—core aspects of language proficiency (Khansir & Pakdel, 2019; Richards, 2006). It also helps learners identify differences in tense, case, and sentence structure, which leads to more accurate language output (Mantasiah et al., 2018; Yıldız, 2016).

Considering that all languages serve as valuable tools for learning beyond the target language (Mpofu & Ndebele, 2025), contrastive analysis supports the use of the native language within translanguaging, which treats learners' full linguistic repertoire as an asset rather than a limitation. In this context, contrastive analysis is especially effective for teaching Turkish to Kazakh learners, given the structural similarities and differences between Kıpchak and Oghuz Turkic languages (Açık, 2018; Kurt, 2010). Language comparison increases learners' awareness and reduces errors (Durmuş & Kılınç, 2021). It also encourages the development of strategies such as interpreting, facilitating, and evaluating, thereby enhancing linguistic mediation skills that support translanguaging.

METHODOLOGY

Research Design

This study employed a quasi-experimental pretest-posttest control group design to evaluate the impact of contrastive analysis-based instruction on Kazakh learners' linguistic competence in Turkish. The independent variable was the type of instruction (contrastive analysis-based vs. traditional method), and the dependent variable was linguistic competence, measured through grammar and writing tasks. In such designs, groups are formed without random assignment, which can pose a threat to internal validity (Creswell, 2009). To mitigate this, researchers often

use strategies like matching groups or adjusting for pretest scores (Frankel et al., 2012). In this study, group equivalence was confirmed, and pretest score differences were found to be statistically insignificant.

Participants

Sixty-six students from the Department of Oriental Philology and Translation at Abai Kazakh National Pedagogical University participated in the study, all possessing basic proficiency in Turkish. They were evenly divided into an experimental group and a control group, with 33 students in each. A personal information form was used to assess participant characteristics and confirm group similarity. Demographic information and language background data collected from participants are summarized in Table 1 (see appendix).

As presented in Table 1, most of the participants were female (97%), with only 3% male. Most students in both groups were 18 or 19 years old. All participants were native Kazakh speakers. Regarding foreign language proficiency, participants were multilingual: 48.5% of the experimental group and 66.7% of the control group spoke both Russian and English. Prior knowledge of Turkish varied between groups, with 36.4% of the experimental group and 21.2% of the control group having some familiarity, mainly gained through internet sources. A small number of students in each group had visited Türkiye, mostly for vacation purposes.

Turkish reading habits among participants were generally weak; over half of both groups reported never reading Turkish materials. Similar trends were observed in viewing habits, with about half of the students not watching Turkish TV shows or movies, while the rest engaged with them occasionally or regularly. Writing activities showed slight variation, with more students in the control group writing poems, diaries, compositions, or letters. Overall, both groups had limited involvement in Turkish-related activities, and none of the participants had attended any external Turkish language courses.

Data Collection Tools

The Turkish Language Level Test developed by Gazi TÖMER was used to evaluate the Turkish proficiency levels of students in both groups before the experimental procedure. The test consists of 60 questions and classifies proficiency based on score ranges: 0–20 indicates a basic level, 21–40 an intermediate level, 41–48 a proficient C1 level, and scores above 49 a highly accomplished C1 level. The experimental group had a mean score of 15.69, while the control group scored an average of 16.33. These results show that students in both groups were at a basic proficiency level.

Contrastive analysis supports the development of linguistic competence through cognitively based instruction. Two key factors guided the selection of the data tool. First, achievement tests are widely used to measure cognitive learning outcomes. Second, the widely used textbook *Turkish Grammar for Foreigners* by Gazi TÖMER influenced the choice of assessment format. As a result, the grammar and writing sections of Gazi TÖMER's Turkish Proficiency Exam were selected as pre- and post-tests to measure Kazakh students' linguistic competence. The grammar section includes tasks such as suffix completion, fill-in-the-blank, and

error correction, with a maximum score of 100. The composition section evaluates spelling, vocabulary, grammar accuracy, punctuation, content, and organization, with a maximum score of 28. Reliability studies for these exams were conducted by Gazi TÖMER.

The Personal Information Form was developed to collect detailed data on participant characteristics that could affect the study's dependent variable. It included questions on name, age, gender, previous Turkish learning experience, duration of stay, reasons for staying, and engagement in Turkish language activities. The form was reviewed and refined by three field experts to ensure its relevance and appropriateness.

Validity and Reliability of Data Collection Tools

For the reliability studies of Gazi TÖMER's Turkish Proficiency Exam, reliability coefficients were calculated using data collected during the experimental phase of this research. The KR-20 (Kuder-Richardson Formula 20) analysis was conducted in Microsoft Office Excel 2010 to determine the internal consistency of the exam. The KR-20 value was calculated as .80. According to Büyüköztürk (2020), a reliability coefficient of .70 or above indicates that the exam is reliable for research purposes. The validity of the exam is maintained by the Research and Development Department at Gazi TÖMER.

The Personal Information Form was reviewed by three field experts for linguistic accuracy and content validity, with revisions based on their recommendations.

Procedure

The research process included several stages: pre-experiment, experimental process, and post-experiment phases. The pre-experiment phase involved preparation, design, and development. During the preparation stage, Turkish and Kazakh grammatical structures were compared to identify typological similarities, differences, and difficulty levels. An appropriate instructional setting was then selected, and learning objectives, topics, and course content were aligned with the linguistic competence descriptors of the CEFR (2020).

A pedagogical model was developed to improve Kazakh students' Turkish linguistic competence through contrastive analysis-based instruction (Appendix A). The model incorporates relevant teaching principles, strategies, and activities based on comparative findings. Roles for both teachers and students were defined, and an elective course program, lesson plans, and teaching activities were developed. Sample teaching activities and the experimental group's lesson plan are provided in Appendices B and C. The 15-week online experimental procedure was implemented during the 2020–2021 spring semester within the university department due to the pandemic. Basic-level students in both the experimental and control groups participated. The procedure included steps carried out before, during, and after the experiment:

1. In the first week of the experiment, the course instructor and study participants were informed about the 15-week lesson plan aimed at improving Turkish linguistic competence. The researcher then distributed the Personal Information Form to both the experimental and control groups, which participants completed voluntarily. Following this, the Turkish Language

Level Test was administered to both groups, and the results were evaluated using the official Gazi TÖMER answer key. Statistical analyses were conducted on the data to ensure reliability, and the characteristics of students in both groups were compared to verify group equivalence.

2. After informing the students, the grammar and writing sections of the Turkish Proficiency Exam were administered as pre-tests during a ZOOM session with internet access. The session was recorded with the students' consent. Pre-test grammar data from both groups were analyzed, while the composition writing section was evaluated using Gazi TÖMER's Writing Evaluation Scale, which includes six CEFR-aligned criteria: spelling, punctuation, language use, vocabulary, organization, and content. This scale is commonly used in Turkish language assessment and holds institutional validation. Two qualified teachers independently scored the compositions, demonstrating high inter-rater reliability and ensuring consistent results. Pre-test results were then compared between the experimental and control groups.

3. The experimental group received contrastive analysis-based instruction through three 50-minute ZOOM sessions each week over a 15-week period. The instruction was delivered in three phases: introduction, development, and evaluation. In the introduction stage, apperceived input was activated using brainstorming, visual prompts, and collaborative puzzle-solving tasks that compared similar and different lexical items in Kazakh and Turkish. The development phase focused on explicit grammar instruction through structured comparisons, including sentence classification, morphological analysis, translation exercises, and controlled grammar practice. To build grammatical and lexical awareness, authentic Turkish cultural texts were used with pre-, during-, and post-reading activities. Writing instruction included pre-writing discussions, paragraph and composition writing, and structured feedback sessions. In the evaluation stage, guided error analysis was used in peer, self, and teacher feedback to promote learner reflection. Instruction emphasized contextualization, scaffolding, and contrastive awareness to strengthen linguistic control and minimize negative transfer. Meanwhile, the control group received traditional instruction once a week in a single three-hour session, with each 50-minute segment conducted via ZOOM, and no additional intervention.

4. In the final week, the grammar and writing sections of the Turkish Proficiency Exam were administered again as post-tests via ZOOM. The post-test results of the experimental and control groups were then compared. Grammar accuracy and writing performance were assessed using the relevant evaluation criteria. Data collected before and after the experiment were analyzed using SPSS Statistics 23.0.0.0, which provided the basis for key conclusions and recommendations.

Data Analysis

Descriptive statistics, the independent samples t-test, and a mixed-design ANOVA (also known as split-plot ANOVA) were employed to analyze the experimental data. Descriptive statistics such as arithmetic mean, standard deviation, skewness, and kurtosis were calculated for both groups. Skewness coefficients were examined to evaluate the normality of the data distribution.

To ensure valid statistical comparisons, the study assessed participants' initial Turkish proficiency. Although all students were considered to have basic Turkish proficiency based on departmental standards, their actual language level was measured using Gazi TÖMER's Turkish Language Level Test to ensure alignment with contrastive analysis-based activities. An independent samples t-test was conducted to determine whether there were significant differences between the two groups' proficiency levels. Given the small sample size, the Shapiro–Wilk test was used to evaluate normality, along with a check for homogeneity of variances, as recommended (Büyüköztürk, 2020; Can, 2019). The descriptive results are presented in Table 2.

Table 2.

Descriptive and Normality Test Results of Turkish Language Proficiency

Group	n	M	SD	Skewness	Kurtosis	Shapiro-Wilk p
Experimental	33	15.697	3.015	−.003	−.831	.096[*]
Control	33	16.333	2.965	−.239	−.851	.124[*]

*p> .05

As presented in Table 2, the Shapiro–Wilk normality test yielded a p-value of .096 for the experimental group and .124 for the control group, indicating that the data for both groups followed a normal distribution (p > .05). Additionally, the skewness coefficients for both groups fell within the range of ∓1, further supporting normal distribution. Levene's test for equality of variances produced a p-value of .972, confirming that the group variances were homogeneous (p > .05). Based on these results, the data were deemed to meet the assumptions of normality and homogeneity of variances. Therefore, an independent samples t-test was conducted to compare the Turkish Language Level Test scores between the two groups. The results of this analysis are presented in Table 3.

Table 3.

Independent Samples t-Test Results for Turkish Proficiency Scores

Group	n	M	SD	df	t	p
Experimental	33	15.697	3.015	64	−.864	.391[*]
Control	33	16.333	2.965			

*p> .05

According to the results presented in Table 3, there was no significant difference between the mean score of the experimental group (M = 15.69) and the control group (M = 16.33) (t(64) = −.864, p > .05). Therefore, it can be concluded that both groups had equivalent levels of Turkish language proficiency at the start of the study.

For the main analysis, a mixed-design ANOVA was conducted for each dependent variable—grammar test scores and composition writing scores—with time (pre-test and post-

test) as the within-subject factor and group (experimental vs. control) as the between-subject factor (Büyüköztürk, 2016; Can, 2019). Prior to this analysis, normality tests were conducted on both pre-test and post-test grammar and writing scores in both groups to confirm that ANOVA assumptions were met.   Additionally, effect size was calculated using partial eta-squared ($\eta2$), which represents the proportion of variance explained by the independent variable. According to Büyüköztürk (2020), η^2 values are interpreted as follows: .01 indicates a small effect, .06 a medium effect, and .14 a large effect. The results of the grammar score analysis are presented in Table 4.

Table 4.

Descriptive and Normality Test Results for Pre- and Post-Test Grammar Scores of Experimental and Control Groups

Test	Group	*n*	*M*	*SD*	Shapiro-Wilk *p*
Pre-test	Experimental	33	72.27	7.14	.087[*]
	Control	33	71.30	8.29	.101[*]
Post-test	Experimental	33	81.63	7.72	.096[*]
	Control	33	76.69	7.86	.454[*]

*p> .05

As presented in Table 4, the mean pre-test grammar score was 72.27 for the experimental group and 71.30 for the control group. The Shapiro–Wilk test results showed p-values of .087 for the experimental group and .101 for the control group, indicating a normal distribution (p > .05). Levene's test produced a p-value of .381 (p > .05), suggesting that the group variances were homogeneous. For the post-test grammar scores, the experimental group had a mean score of 81.63, while the control group averaged 76.69. The Shapiro–Wilk test results were .096 for the experimental group and .454 for the control group, again indicating normal distribution (p > .05). Levene's test result for the post-test was .668 (p > .05), confirming homogeneity of variances. Additionally, Box's M test was used to check for equal covariances between the pre-test and post-test grammar score combinations, yielding a p-value of .254 (p > .05), confirming that the assumption was met.

The same procedure was applied to analyze the participants' pre-test and post-test composition writing scores. Table 5 presents the results:

Table 5.

Descriptive and Normality Test Results for the Pre- and Post-Test Composition Writing Scores of Experimental and Control Groups

Test	Group	*n*	*M*	*SD*	Shapiro-Wilk *p*
Pre-test	Experimental	33	15.63	1.49	.056[*]
	Control	33	16.18	1.44	.052[*]
Post-test	Experimental	33	21.45	2.07	.157[*]
	Control	33	19.90	2.09	.105[*]

*p> .05

As presented in Table 5, the average pre-test composition score was 15.63 for the experimental group and 16.18 for the control group. The Shapiro–Wilk test results showed p-values of .056 for the experimental group and .052 for the control group, indicating that the data were normally distributed (p > .05). Levene's test confirmed homogeneity of variances (p = .740, p > .05). For the post-test composition scores, the experimental group had an average of 21.45, while the control group averaged 19.90. The Shapiro–Wilk test results were .157 for the experimental group and .105 for the control group, again showing normal distribution (p > .05). Levene's test indicated homogeneous variances (p = .895, p > .05). Box's M test was used to assess the equality of covariance matrices for mixed measures, yielding a p-value of .471 (p > .05), confirming that the assumption was satisfied. Therefore, all assumptions required for conducting the mixed-design ANOVA were met.

RESULTS

Results Related to the First Hypothesis

To test the first hypothesis, the pre-application grammar test scores of the experimental and control groups were compared. The analysis results of this comparison are presented in Table 6.

Table 6.

Independent Samples t-Test Results for Pre-Test Grammar Scores of Experimental and Control Groups

Group	n	M	SD	df	t	p
Experimental	33	72.27	7.142	64	.509	.613[*]
Control	33	71.30	8.293			

*p> .05

The independent samples t-test results indicated no significant difference between the mean pre-test grammar scores of the experimental group (M = 72.27) and the control group (M = 71.30) (t(64) = .509, p > .05). These findings suggest that both groups were equivalent in their grammatical accuracy and knowledge before the intervention. To further test the study's first hypothesis, a mixed-design ANOVA was performed. The results of this analysis are presented in Table 7.

The results showed a significant difference in grammatical accuracy between the experimental and control groups from pre-test to post-test. The interaction effect between group and measurement was significant (F(1, 64) = 13.781, p < .05, η^2 = .177), indicating that contrastive analysis instruction effectively improved students' grammatical knowledge and its practical use. The group variable accounted for 17% of the variance in the dependent variable. A statistically significant difference was observed in the mean post-test grammar scores, with the experimental group (M = 81.63, SD = 7.72) scoring higher than the control group (M = 76.69, SD = 7.86).

Table 7.

A Mixed-Design ANOVA Results of Pre- and Post-Test Scores

Source of Variance	Sum of Squares	df	Mean Square	F	P	Partial η²
Between Groups	7404.432	65				
Grup (Exper./Control)	288.068	1	288.068	2.591	.112	.039
Error	7116.364	64	111.193			
Within Groups	2530.501	66				
Measurement (Pretest-Posttest)	1796.735	1	1796.735	190.459	.000*	.748
Group*Measurement	130.008	1	130.008	13.781	.000*	.177
Error	603.758	64	9.434			
Total	9934.933	131				

* *p*< .05

As seen in the results, the experimental and control groups, which were initially equivalent, showed a significant difference in favor of the experimental group in the post-test. The analysis confirmed a statistically significant increase in grammar scores, supporting the first alternative hypothesis. This finding suggests that comparing similar and different linguistic structures through contrastive analysis is effective in enhancing Kazakh students' grammatical accuracy in Turkish.

Results Related to the Second Hypothesis

To address the study's second hypothesis, the writing performance scores of Kazakh students before the experiment were compared. An independent samples t-test was conducted for this purpose, and the results are presented in Table 8.

Table 8.

Independent Samples t-Test Results for the Pre-Test Composition Writing Scores of Experimental and Control Groups

Group	n	M	SD	df	t	p
Experimental	33	15.63	1.49	64	−1.506	.137*
Control	33	16.18	1.44			

* *p*> .05

As Table 8 shows, there was no significant difference between the pre-test writing scores of the experimental group (M = 15.63) and the control group (M = 16.18) (t(64) = −1.506, p > .05), indicating that both groups were comparable in writing performance prior to the intervention. To further examine the effects of instructional type (experimental vs. control) and time (pre-test vs. post-test) on Kazakh students' writing performance, a mixed-design ANOVA was conducted. The results of this analysis are presented in Table 9.

Table 9.

A Mixed-Design ANOVA Results of Pre- and Post-Test Composition Writing Scores

Source of Variance	Sum of Squares	df	Mean Square	*F*	*P*	Partial η^2
Between Groups	363.977	65				
Group (Exper./Control)	8.250	1	8.250	1.484	.228	.023
Error	355.727	64	5.558			
Within Groups	849.5	66				
Measurement (Pretest-Posttest)	751.705	1	751.705	779.381	.000*	.924
Group*Measurement	36.068	1	36.068	37.396	.000*	.369
Error	61.727	64	0.964			
Total	1213.477	131				

* *p*< .05

A mixed-design ANOVA revealed a statistically significant interaction between group and measurement, F(1, 64) = 37.396, p < .05, η^2 = .369, indicating a large effect size. This finding suggests that the change in writing performance from pre-test to post-test was significantly greater in the experimental group than in the control group. The results show that contrastive analysis-based instruction was more effective than traditional teaching in improving spelling, vocabulary, word choice, grammatical accuracy, and overall writing performance. Although the experimental group initially scored slightly lower, their post-test mean scores showed a marked improvement, surpassing the control group. These results support the acceptance of the second alternative hypothesis.

DISCUSSION

The current study examined the effectiveness of contrastive analysis-based instruction in teaching Turkish to Kazakh learners, with a focus on improving linguistic competence. The findings showed that contrastive analysis significantly improved the grammatical accuracy and composition writing skills of the experimental group compared to the control group. These outcomes align with previous studies (Mantasiah et al., 2018; Okičić & Osmankadić, 2014) that demonstrated the positive impact of contrastive analysis on understanding and applying grammatical structures. Additionally, research by Khansir and Pakdel (2019), Kissová (2020), and Yıldız (2016) supports the conclusion that contrastive analysis aids in acquiring phonological and morphological features through a comparative instructional approach.

Providing explicit instruction through the comparison of similarities and differences enhances grammar comprehension, particularly in closely related languages such as Kazakh and Turkish. This finding aligns with Leontiev's (1970) apperceived input theory and the translanguaging approach (Mpofu & Ndebele, 2025; Pontier et al., 2020), both of which highlight

the importance of prior linguistic knowledge in supporting the acquisition of language structures. Numerous studies (Byrd, 2017; Elmajid et al., 2016; Kissová, 2020; Laufer & Girsai, 2008; Quarto, 2022) further validate the effectiveness of contrastive analysis in facilitating the perception and understanding of grammatical patterns.

However, it is important to acknowledge that several studies have identified limitations and challenges in the application of contrastive analysis. Ara (2021) argues that learners' interlanguage systems are not solely shaped by predictions from contrastive analysis, as various factors influence language development. Similarly, Khansir (2012) contends that many learner errors arise from the universal language acquisition process rather than structural differences alone. Kumaravadivelu (2012) further criticizes contrastive analysis for concentrating primarily on language structures while neglecting the sociocultural dimensions of language, which are essential for its meaningful and effective use.

The study results show that contrastive analysis is an effective approach for teaching foreign languages, especially when the languages share close linguistic ties. Its value lies in fostering clarity, precision, and awareness of learners' linguistic identities, while also aligning with the principles of translanguaging pedagogy.

Practical application of these findings requires teacher training focused on using contrastive analysis in real classroom contexts, with an emphasis on highlighting linguistic similarities and differences to boost learners' grammatical awareness. Curriculum and material developers should integrate contrastive analysis and error analysis into communicative activities to promote comprehensible input. For languages with close linguistic distance, such as Turkic languages, contrastive analysis can support language acquisition by effectively leveraging learners' existing language knowledge.

In conclusion, while recognizing the limitations of contrastive analysis, the study affirms its effectiveness in language instruction. To improve teaching practices, future research should investigate integrated models that combine contrastive analysis with approaches such as translanguaging, tailored to various learner profiles and proficiency levels.

Conclusion and Recommendations

This study examined the impact of contrastive analysis-based instruction on Kazakh students' linguistic competence and represents the first application of this approach in teaching Turkish as a foreign language. The findings confirmed that contrastive analysis-based activities improved students' comprehension and practical use of linguistic structures.

The analysis of the first hypothesis revealed no significant difference in pre-test grammar scores between the experimental and control groups, indicating comparable initial levels of grammatical accuracy. However, the post-test results showed a significant interaction effect between group and time, with the experimental group outperforming the control group. This indicates that contrastive analysis instruction resulted in greater gains in grammatical accuracy than traditional methods, supporting the first alternative hypothesis.

Similarly, no significant difference was found in pre-test writing scores, although the control group had a slightly higher average due to a greater number of completed compositions. Following the intervention, a significant interaction effect between group and time was observed. The experimental group showed notably greater improvement in areas such as spelling, punctuation, language use, vocabulary, organization, and content. The large effect size further supports the effectiveness of contrastive analysis instruction. These findings confirm the second alternative hypothesis and demonstrate that teaching based on linguistic similarities and differences significantly enhances the linguistic competence of Kazakh students.

In summary, the results suggest that contrastive analysis enhances learners' understanding of linguistic structures by supporting translanguaging strategies, leading to a more inclusive and cognitively engaging learning environment. It is especially effective for beginner learners when the target and native languages are related, highlighting its value in teaching Turkish to Turkic language speakers.

Therefore, it is recommended that contrastive analysis be integrated into textbooks and instructional materials designed for Turkic learners. Activities should be developed with attention to interlingual similarities and differences, supported by careful analysis of student errors. Future research should investigate learners at different proficiency levels and across closely related languages. Additionally, both the teacher's pedagogical skills and the learner's native language proficiency should be taken into account. Effective implementation will also require collaboration among educators, researchers, and curriculum developers.

Limitations

The study had some limitations. Due to the pandemic, the contrastive analysis-based instruction was delivered online over a 15-week period. Future research could be conducted in face-to-face settings and extended over a longer period. Additionally, this study focused exclusively on native Kazakh speakers. Expanding future research to include learners of other languages—particularly those with minimal linguistic and social distance—would help broaden the scope of contrastive analysis. Further studies could also examine its impact on metalinguistic awareness, intercultural competence, and mediation skills.

Ethics Statements

The study was conducted in accordance with the principles of research and publication ethics. Ethics committee approval was obtained from Gazi University Ethics Committee (approval no. E.120065, date: 10.11.2020) and Abai Kazakh National Pedagogical University in Almaty (approval no. 05-04-03/14111, date: 08.01.2021).

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Conflict of Interest

The authors declare that they have no potential conflicts of interest to disclose.

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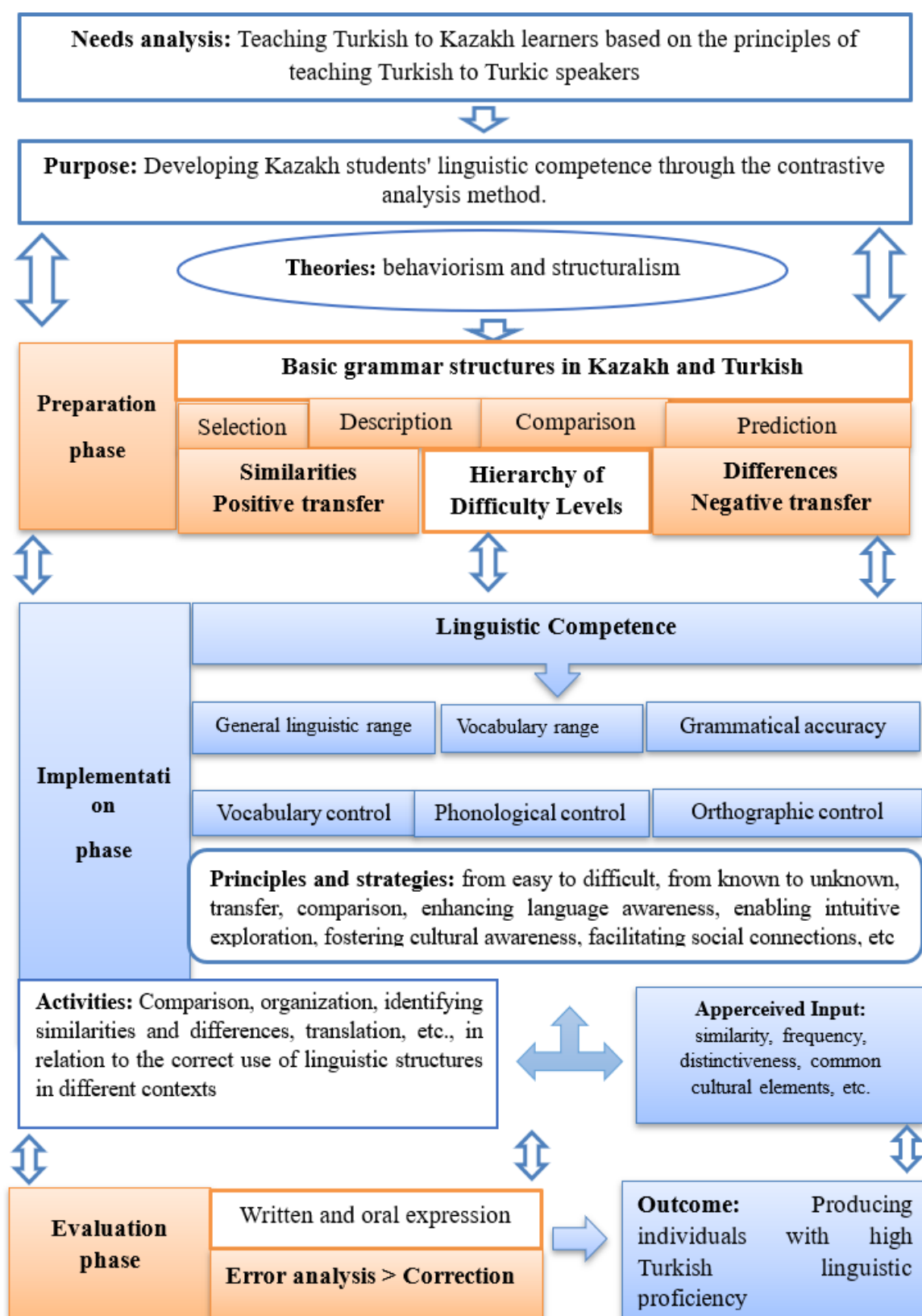
APPENDIX

Table 1.

Participant Demographics and Language Background

Item	Answers	Experimental		Control	
		n	%	n	%
Gender	Female	32	97.0	32	97.0
	Male	1	3.0	1	3.0
	Total	33	100.0	33	100.0
Age	18	10	30.3	14	42.4
	19	17	51.5	14	42.4
	20	6	18.2	3	9.1
	21	0	0.0	2	6.1
	Total	33	100.0	33	100.0
Native language proficiency	Kazakh	33	100.0	33	100.0
	Total	33	100.0	33	100.0
Foreign language proficiency	English	2	6.1	6	18.2
	Russian	9	27.3	10	30.3
	Russian, English	22	66.7	16	48.5
	Russian, Uzbek	0	0.0	1	3.0
	Total	33	100.0	33	100.0
Turkish learning status before	Yes	12	36.4	7	21.2
	No	21	63.6	26	78.8
	Total	33	100.0	33	100.0
Where did you learn Turkish?	-	21	63.6	26	78.8
	In the course	2	6.1	3	9.1
	From internet	10	30.3	4	12.1
	Total	33	100.0	33	100.0
Having an experience in Türkiye	Yes	3	9.1	4	12.1
	No	30	90.9	29	87.9
	Total	33	100.0	33	100.0
Reason for being in Türkiye	-	30	90.9	29	87.9
	Travel	3	9.1	4	12.1
	Total	33	100.0	33	100.0
Length of stay in Türkiye	-	30	90.9	29	87.9
	less than 1 month	3	9.1	4	12.1
	Total	33	100.0	33	100.0

Reading Turkish books and magazines outside of class	Several times a week	5	15.2	6	18.2
	Several times a month	7	21.2	10	30.3
	I do not read	21	63.6	17	51.5
	Total	33	100.0	33	100.0
Watching Turkish movies and TV series outside of class	Every day	3	9.1	2	6.1
	Several times a week	9	27.3	6	18.2
	Several times a month	3	9.1	9	27.3
	I do not watch	18	54.5	16	48.5
	Total	33	100.0	33	100.0
Writing poetry, diary, composition, etc. in Turkish	Poetry	1	3.0	3	9.1
	Diary	3	9.1	2	6.1
	Composition	0	0.0	7	21.2
	Letter/ post/ e-mail	11	33.3	6	18.2
	I do not write	18	54.5	15	45.5
	Total	33	100.0	33	100.0
Participating in Turkish activities	Yes	5	15.2	7	21.2
	No	28	84.8	26	78.8
	Total	33	100.0	33	100.0
Attendance to Turkish courses outside of the classroom	Yes	0	0.0	0	0.0
	No	33	100	33	100
	Total	33	100.0	33	100.0

Appendix A

A pedagogical model based on contrastive analysis, translated into English

Needs analysis: Teaching Turkish to Kazakh learners based on the principles of teaching Turkish to Turkic speakers

Purpose: Developing Kazakh students' linguistic competence through the contrastive analysis method.

Theories: behaviorism and structuralism

Preparation phase

Basic grammar structures in Kazakh and Turkish

Selection	Description	Comparison	Prediction

Similarities Positive transfer	**Hierarchy of Difficulty Levels**	**Differences Negative transfer**

Implementation phase

Linguistic Competence

General linguistic range	Vocabulary range	Grammatical accuracy

Vocabulary control	Phonological control	Orthographic control

Principles and strategies: from easy to difficult, from known to unknown, transfer, comparison, enhancing language awareness, enabling intuitive exploration, fostering cultural awareness, facilitating social connections, etc

Activities: Comparison, organization, identifying similarities and differences, translation, etc., in relation to the correct use of linguistic structures in different contexts

Apperceived Input: similarity, frequency, distinctiveness, common cultural elements, etc.

Evaluation phase

Written and oral expression

Error analysis > Correction

Outcome: Producing individuals with high Turkish linguistic proficiency

Appendix B

Example of a lesson plan for an experimental group

GÜNLÜK DERS PLANI

Tarih: 08/02 /2021

Bölüm I	
Dersin Adı	Türkçe
Sınıf/ Düzey	2. sınıf / temel düzey
Ünitenin Adı	2. Haberiniz olsun
Konu	C. Haberler – Haber kaynakları
Dilbilgisi	Karşılaştırmalı vasıta eki (ile)
Önerilen Süre	50 dakika
Bölüm II	
Amaç	Haber konusuna ilişkin söz varlığı ve vasıta ekine (ile) ilgili bilgi ve kuralları kavramak ve doğru uygulamak.
Kazanımlar	*Bilgi:* Konu ile ilgili temel ihtiyaçlarını karşılamak için lehçeler arasındaki benzer ve farklı sözcük sayıları ve türlerini içeren söz varlığına sahip olur. Vasıta eki (ile) ilgili genel dilbilgisi kurallarını öğrenir. *Beceriler:* Vasıta eki (ile) konu ile ilgili basit cümleleri üretebilir. Olumsuz aktarıma neden olabilecek farklı sözcük türleri ve ifadeleri denetleyebilir. Lehçeler arasındaki benzer ve farklı sözcükleri ve ifadeleri uygun bir şekilde iletişimde kullanabilir. Konu ile ilgili kısa metinleri çevirebilir. Konu ile ilgili kısa metinler yazabilir. *Davranışlar:* Haber türlerine ilgi duyar; karşılaştırmalı öğretim neticesinde Türkçeye yönelik olumlu görüşleri gelişir ve empati kurar.
Yöntem ve Teknikler	Karşılaştırmalı çözümleme yöntemi/ anlatım, soru-cevap, beyin fırtınası, iç çember, çağrımsal düşünce teknikleri
Araç ve Gereçler	Power Point sunumu, etkinlikler, bilgisayar
Öğretme-Öğrenme Etkinlikleri	- *Giriş (dikkat çekme):* 1. Öğrencilerin dikkatlerini çekmek için onlara *"Televizyonda haber programlarını seyrediyor musunuz?"*, *"Hangi tür haberleri okumayı veya dinlemeyi seviyorsunuz?"* şeklinde sorular sorulur. Öğrencilerden gelen cevaplara yönelik uygun dönütler yapılır. 2. Resimler incelendikten sonra grupla çalışma etkinliği yapılır. Beyin fırtınası tekniği ile öğrencilerden "haberler" sözcüğü ile ilişkili olan birçok sözcük yazmaları istenir. Öğrencilerin yazdıkları sözcükler incelenir ve birer örnekler vermeleri istenir. Ardından kelime havuzu etkinliğine geçiş yapılır. - *Gelişme:* 1. kelime havuzundaki sözcükler tek tek incelenir. Tanıdık sözcüklerin olup olmadığı sorulur. Kazakça ile karşılaştırılır. Daha sonra kelime havuzundaki sözcüklerin öğrencilerde daha kalıcı olması için etkinliğe yer verilir. Kelime havuzundaki sözcükleri cümle içinde uygun boşluklara doldurmaları istenir. Hatalar tespit edildiği takdirde düzeltmeler yapılır. 2. Dilbilgisi konusuna geçiş yapılır. Öğrencilere vasıta eki (ile) hakkında bilgi verilir. Öğrencilerden eki kullanarak birkaç örnek vermeleri istenir. 3. Dersi dikkatle dinledikleri ve etkinlikleri yaptıkları takdirde vasıta ekiyle doğru cümleler kurmayı, durum ve zamana uygun cümleleri üretebilmeyi öğrenirler. 4. Konu ile ilgili Kazakçada kullanılan ve karşılığı Türkçede olan ortak sözcükler, yalancı eş değerler incelenir. Sözcüklerin anlamları Kazakça ile karşılaştırılır. Ayrıca *seyretmek - izlemek - görmek – bakmak* gibi sözcüklerin anlamları açıklanır ve örnekler verilir. Ardından etkinliğe geçiş yapılır. 5. Öğrencilerin yeni sözcükleri ve vasıta eki kullanarak bir haber metni yazmaları istenir. Yazma öncesi, sırası ve sonrasına yönelik etkinlikler öğrencilerle yapılır.
Bölüm III	
Ölçme-Değerlendirme	Ders sonunda bireysel/grup değerlendirilmesi yapılır. Öğrencilerin konu ile ilgili sorular sormaları beklenir, ardından *"Haydi Kendini Değerlendir!"* öz değerlendirme etkinliği öğrencilerle yapılır. 7. etkinlik ev ödevi olarak verilir.
Bölüm IV	
Dersin Uygulanmasına İlişkin Açıklamalar	Önerilen süre içinde konu işlenmiş, öğrencilerin bilgi ve becerileri geliştirilmiştir. Değerlendirme yapılmış ve dersin amacına ulaşılmıştır.

Appendix C

Contrastive analysis-based activities

KARŞILAŞTIRALIM ......

4. Yukarıda kelime havuzunda yer alan sözcükleri Kazakça ile karşılaştıralım. Sözcükleri Kazakça ve Türkçede karşılaştırarak anlamlarına göre aşağıdaki çemberlere yerleştirelim.

BENZER
1 ....
2 ....
3 ....

ORTAK
....
....
....

FARKLI
1 ....
2 ....
3 ....
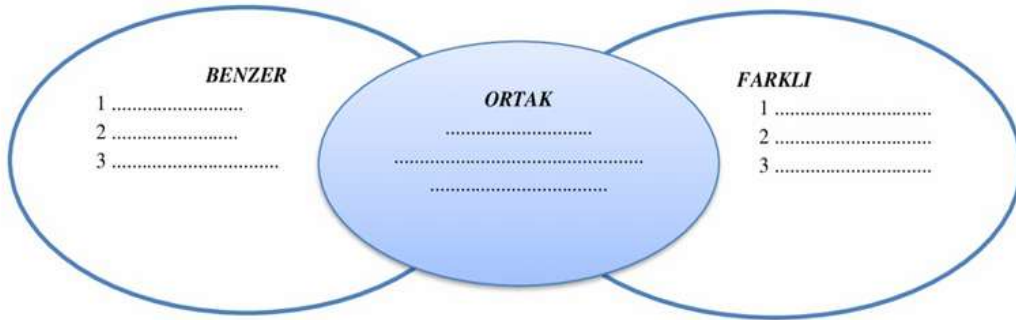
5. Yukarıdaki sözcüklerin anlamlarını birlikte inceleyelim. Aşağıdaki cümlelerin boşluklarına uygun sözcükleri koyalım.

1. İyi seyretmeler! Türk dizisi _____ ?
2. Günümüzde televizyon kanalları koronavirüs ile ilgili _____ yapıyor.
3. Annem her gün televizyondaki _____ haberleri _____.
4. Dünyada internet etkisinden _____ ile _____ sayısı azalıyor.
5. Her sabah trafikte canlı _____ haberleri _____ ve işe gidiyorum.
6. Kadınlar mı daha çok _____ yapar erkekler mi?
7. _____ insan psikolojisi üzerinde büyük etkilere sahiptir. Çünkü reklam ajansları insanlara farklı _____ göndermek için yeni stratejileri kullanıyorlar.
8. Çalışmak istiyorum. Bu sebeple iş _____ bakıyorum.
9. Haberleri _____ _____ ? Musa babası gibi _____ olmak istiyor.
10. Yıldız'ı hastanede _____ ve bana hastalığı hakkında _____

DİL BİLGİSİ (VASITA EKİ "İLE" / "МЕН" ЖАЛҒАУЛЫҚ ШЫЛАУЫ)

Vasıta eki veya vasıta hâl eki, "ile" sözcükleri birbirine bağlar. Ünsüz ile biten sözcüklere **-le** şeklinde eklenir. Ünlü ile biten sözcüklere **-yle** şeklinde kullanılır. Vasıta eki genelde **vasıta (araç)**, **birliktelik** ve **durum** görevinde kullanılır. Örneğin:

- Annem herkese telefonla haber verdi . (vasıta/araç)
- Arkadaşımla iş ilanlarına baktık. (birliktelik)
- Hasta sayısı hızla artıyor. Lütfen evde kalın. (durum)

6. Aşağıdaki cümle boşluklarına "ile" ekini kullanarak yazalım.

1. Hafta sonu Ainur _____ Nurcan televizyon haberleri seyrediyorlar.
2. Şok fırsatlar kaçırma! Hediye kart _____ indirimli ürünleri hemen satın al.
3. Güncel haberler! Gürkan Genç bisiklet _____ sekiz yıl dünyayı keşfetti.
4. Geçen yıl Türkistan'da konferans _____ gezi düzenledik.

5. Uçak en güvenli ulaşım aracıdır. Bu nedenle insanlar uçak _____ en çok seyahat ederler.

6. Kazakistan _____ Türkiye arası 4694 kilometredir. Bu sebeple Kazakistan'a 5 saatlik uçuşla gidilir.

7. Göz sağlığı için bilgisayar önünde gözlük _____ oturmak gerekir.

8. Kimse gazeteler _____ dergileri okumuyor. Haberleri artık cep telefonundan öğreniyoruz.

9. İnsanlar farklı cihazlar _____ canlı yayın yaparlar.

10. Geçen hafta Antalya ___ ____ Mersin şehirlerinde hava sıcaklığı 26 derece oldu.

OKUMA-YAZMA

7. Aşağıdaki metni Kazakçadan Türkçeye çevirelim. Metni Türkçede tekrar yazalım.

Қазіргі таңда балалар күн сайын сағаттап теледидар көреді. Бұл олар үшін өте зиян. Мысалы, қазіргі кезде 2 жасқа дейінгі бала теледидар алдында отырады. Бала басқа адамдармен қарым-қатынас жасамайды және ойнамайды. Нәтижесінде балалар кеш сөйлейді. Адамдармен қарым-қатынас құруда қиналады. Теледидар орнына балалар әлемді танып жануарлармен, адамдармен, қоршаған ортамен қарым-қатынас орната білуі керек. Ойынмен өсулері қажет. Бұл олардың дамуы үшін маңызды. Сол себепті ата-аналар бұл жағдайға назар аударулары қажет.

_____
_____
_____
_____
_____
_____
_____
_____
_____

8. Arkadaşınızla metnin Türkçesini kontrol ediniz. Çeviri yaparken nerede en çok zorlandınız ? Çevirirken Kazakça ve Türkçede ortak olan sözcükler var mı?

9. Metin ile ilgili aşağıdaki sorulara cevap verelim.

- Günümüzde çocuklar televizyon önünde çok vakit geçiriyor mu?

- Metinde televizyonun çocuklara zararları nelerdir? Başka hangi zararları söyleyebilirsiniz?

- Sizce televizyonun çocuklara faydaları var mı? Var ise faydaları nelerdir?

- Sizce metnin başlığı ne olmalı?

DİKKAT EDELİM ......

> **Kazakça ve Türkçede birçok ortak sözcük ile ifade vardır. Bazı sözcükler ile ifadeler aynı olarak kullanılsa da bazıları ses değişmelerine uğramıştır.**
> **Örneğin:** haber, gazete, haber vermek, haber almak ... vb.
> **Kazakça ve Türkçede yazım biçimi aynı ama anlamı farklı sözcükler ile ifadeler vardır. Örnek olarak,** televizyon görmek ~ televizyon seyretmek/izlemek
>   Kazakçada **televizyon görmek** ifadesi çok kullanılır. Ancak bu ifade Türkçede **televizyon seyretmek/izlemek** şeklindedir. İfade **eğlenmek, görmek, öğrenmek için bakmak, seyretmek** gibi anlamlarda kullanılır.
> Türkçede **seyretmek - izlemek - görmek – bakmak** gibi fiillerin farkı aşağıdaki gibidir:
>   - **seyretmek/ izlemek** fiilleri film, haber ve dizi gibi sözcüklerle birlikte kullanılır. Örneğin, film/dizi/haberleri/televizyon **izlemek/seyretmek.**
>   Bir çizgi filmi izlemek ister misin?
>   - Türkçede **görmek** fiilin Kazakçadaki karşılığı **körüw** fiilidir. Ama fiil **anlamak, göz yardımıyla bir şeyin varlığını algılamak, değerlendirmek** gibi anlamlarda da kullanılır. Örneğin, arkadaşımı İstanbul'da gördüm.
>   - Türkçede **bakmak** fiili bakışı bir şey veya birisi üzerine çevirmek, beslemek, tedavi etmek gibi anlamlarda kullanılır. Örneğin, pencereden dışarıya baktım.

10. Aşağıdaki sözcüklere (görmek/etmek/beyan etmek/vermek/ duymak/ seyretmek/ dinlemek) uygun filleri koyalım.

Beyan ....   Haber ....

Film ....   Güneş ....

Resime ....   Radyo ....

Sesi ....   Olay hakkında ....

KONUŞMA

11. Aşağıdaki resmi inceleyelim ve sorulara cevap verelim.