







## Effects of interactive learning module technology on Kazakh as a second language learners' achievement and communication skills

Gulmira Yermekbayeva<sup>1</sup>   
Gulzhana Kuzembayeva<sup>2</sup>   
Zhumagul Maydangalieva<sup>3</sup>   
Diana Spulber<sup>4,5</sup> 



(✉ Corresponding Author)

<sup>1,2</sup>K. Zhubanov Aktobe Regional University, Aktobe, the Republic of Kazakhstan.

<sup>1</sup>Email: [gabitovna86@mail.ru](mailto:gabitovna86@mail.ru)

<sup>2</sup>Email: [kuzembayeva@mail.ru](mailto:kuzembayeva@mail.ru)

<sup>3</sup>Baishev University, Aktobe, the Republic of Kazakhstan; Kh.Dosmukhamedov Atyrau University, Atyrau, the Republic of Kazakhstan.

<sup>3</sup>Email: [maydangalieva@mail.ru](mailto:maydangalieva@mail.ru)

<sup>4</sup>Peoples' Friendship University of Russia (RUDN University), Moscow, Russia; University of Genoa, Genoa, Italy.

<sup>4</sup>Email: [22spulber@gmail.com](mailto:22spulber@gmail.com)

### Abstract

This study aimed to investigate the effectiveness of interactive learning module technology (ILMT) in teaching Kazakh as a second language in secondary schools in the Republic of Kazakhstan. This research was carried out at Russian-medium secondary schools during the academic year 2021-2022. There were two groups in the sample: the experimental (n=63) and control (n=61). The experimental group received an education based on the ILMT while the control group received an education based on the curriculum's traditional technique. The study used a mixed research design and was divided into two sections: quantitative and qualitative. A semi-experimental pre- and post-test control group design was adopted in the quantitative section. The qualitative section employed phenomenology. The quantitative data were acquired using the students' knowledge assessment test and analyzed using comparative analysis. An interview questionnaire and observations were used to obtain qualitative data which was then evaluated using content analysis. The experimental group outperformed the control group in terms of mean post-test knowledge assessment test scores. The ILMT in teaching Kazakh as a second language is efficient in improving the quality of mastering Kazakh language by Russian-speaking students. Content analysis showed that the ILMT helps to reduce students' anxiety and increase independence which is necessary for the development of students' communication skills.

**Keywords:** Developing speaking skills, Education technology, Interactive learning module, Kazakh as a second language, Secondary school, Student learning achievement.

**Citation** | Yermekbayeva, G., Kuzembayeva, G., Maydangalieva, Z., & Spulber, D. (2024). Effects of interactive learning module technology on Kazakh as a second language learners' achievement and communication skills. *Journal of Education and E-Learning Research*, 11(3), 519-526. 10.20448/jeelr.v11i3.5863


#### History:

Received: 8 December 2023

Revised: 17 May 2024

Accepted: 10 June 2024

Published: 31 July 2024

**Licensed:** This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/) 

**Publisher:** Asian Online Journal Publishing Group

**Funding:** This research is supported by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant number: 19680524).

**Institutional Review Board Statement:** The Ethical Committee of the Baishev University, Kazakhstan has granted approval for this study on 20 February 2023 (Ref. No. 5).

**Transparency:** The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

**Competing Interests:** The authors declare that they have no competing interests.

**Authors' Contributions:** All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

### Contents

1. Introduction .....	520
2. Literature Review .....	520
3. Results .....	523
4. Discussion .....	525
5. Conclusion .....	525
6. Future Implications .....	526
References .....	526

### Contribution of this paper to the literature

The current study deepens the understanding of learning and teaching Kazakh as a second language using interactive learning module technology (ILMT) in Russian-medium secondary schools. Such understanding may contribute to improved practice in teaching the state language in Kazakhstan.

## 1. Introduction

The state language proficiency issue is one of the most significant national concerns in the Republic of Kazakhstan (Aksholakova & Ismailova, 2013; Terlikbayeva & Menlibekova, 2021) which implies not only the expansion of the Kazakh language's functioning but also its maximum use as a means of communication (Vakhitova, Kuzembayeva, Yergazina, Zhumakhanova, & Khayrullina, 2022). Kazakh is the official language and has been taught in all educational institutions since its independence.

There is a need to implement new teaching methodologies and educational tools in teaching the Kazakh language due to social changes in recent decades and the rapid development of the modern educational system in the Republic of Kazakhstan (Zhanpeisova, 2002). Previously, teaching the Kazakh language faced challenges such as limited teaching resources, a lack of a creative approach to teaching and a lack of focus on developing the communication and cultural competences of students. At the modern stage, the attention of teachers is drawn to multilingual personality development and the need to provide textbooks and resources for teaching Kazakh language especially in Russian-medium schools.

Developing the educational and methodological complex for teaching Kazakh as a second language in Russian-medium schools should focus on language personality development, fostering their language, communication and linguacultural competencies. This is the main factor in building the tolerant consciousness of students contributing to their recognition and respect for the state language.

The purpose of this study is to deepen understanding of learning and teaching Kazakh as a second language using interactive learning module technology (ILMT) in Russian-medium secondary schools. Such understanding will inform improved practice in teaching the state language in Kazakhstan. The current research aims to examine the effects of the ILMT on students' language learning achievement and communication skills development in the Kazakh language. Accordingly, two research questions were formulated:

RQ1: Does the ILMT lead to increased student achievement in the Kazakh as a second language context?

RQ2: Does using the ILMT increase students' communication skills in the Kazakh language?

The difference in student achievement after applying the ILMT in the Kazakh as a second language classroom was tested.

*H<sub>0</sub>: The students' knowledge of Kazakh as a second language is not affected by the ILMT technology in a Russian-medium secondary school setting.*

## 2. Literature Review

The resuscitation, development and preservation of indigenous ethnic languages are some of the Republic of Kazakhstan's most pressing issues. For more than 70 years, Kazakhstan has had a monolingual culture: knowing Russian sufficed for all situations and in any national milieu. It was difficult to have a successful job without knowing Russian. Several generations have grown up in a monolingual environment with no need to speak Kazakh. Since the 1990s, with the adoption of Kazakh as the state language (Law of the Republic of Kazakhstan on Languages in the Republic of Kazakhstan, 1997), there has been an urgent need to teach the Kazakh language in all educational institutions (Kuzembayeva, Kulbayeva, Maydangalieva, & Urkunova, 2021). Unfortunately, a lack of interest in learning Kazakh continues to this day. Another barrier to teaching Kazakh language at school is the insufficiency of programs, textbooks and methodological tools for teaching the state language to Russian-speakers and developing their communication skills. Often, training is based on teaching complex grammar and theory. Children do not learn communication skills in Kazakh as a second language at school. They hardly understand the basics of grammar even in their mother tongue.

Studies on teaching the Kazakh language include those published during Soviet-times (Ayapbergenova, 1982; Oralbaeva, 1989; Sarybaev, 1959; Shonanov, 1933) and later since independence (Artykova, 1999; Baitursynuly, 2009; Bekturov & Bekturova, 1994; Orazbaeva, Kasyim, Baltabaeva, Orazakhynova, & Rakhmetova, 2016; Tokpayeva, Kuzembayeva, & Spulber, 2024). School language education should contribute to the revival and preservation of the native language of the titular nation of the Republic of Kazakhstan and realize the potential of the Kazakh language as a language of culture, an academic subject, a language of instruction and a means of educating spiritually rich, highly moral personalities who love their language, people and homeland (Zhanpeisova, 2002). Thus, one of the most important national problems in the country is the development of state language proficiency which implies not only the expansion of its functioning but also its maximum use as a means of communication (Concept of the Language Policy of the Republic of Kazakhstan, 1996; Law of the Republic of Kazakhstan, 2007).

One of the ways to foster Kazakh language skills is by modeling the educational language environment (a speech situation) in a secondary school setting. The creation of a language environment in the lessons of the Kazakh language in a secondary Russian-medium school is carried out in somewhat different conditions than it happens in the lessons of the native language. The teacher needs to simulate an authentic language environment in which the student must be immersed in and outside the classroom and overcome the psychological barrier. Turning to holistic learning technologies can provide schoolchildren with pedagogical conditions, in particular, a speech situation close to authentic for the efficiency of mastering the second language (Jabrailov, 2018). Creating a rich language environment when teaching a second language is possible in a relaxed atmosphere with interesting thematic speech situations that inspire confidence in the correct selection of language tools for constructing sentences and text (Flynn, 2016). Developing a rich language environment is based on pedagogical conditions such as (1) optimal selection, structuring and development of accelerative educational material that allows to speed up and facilitate the learning process. (2) Ensuring students' dialogic speech and role-playing using active methods

and collective cognitive activity. (3) Building the learning process based on individual and differentiated approaches taking into account the cognitive and personal characteristics of students. (4) Creation of educational speech situations and exercises (Yermekbaeva, 2020).

The development of a national model of education in Kazakhstan is accompanied by a change in the educational paradigm. The old content of education is being replaced by a new one. The traditional object-subject pedagogy of John Amos Comenius (Lukaš & Munjiza, 2014) and Johann Friedrich Herbart (Dunkel, 1969) is replaced by another addressed to the self-actualization, self-expression and self-realization of a child. Under these conditions, the most important part of the pedagogical process is the student-oriented interaction between a teacher and a student. A characteristic of modern pedagogical science is the desire to create new educational technologies focused on the personal development of the child. Therefore, it becomes necessary to find specific activities and develop teaching methods that would ensure the effectiveness of the educational process (Zhanpeisova, 2002).

The Law of the Republic of Kazakhstan (2007) approved the principle of variability in the choice of teaching technologies, methods and techniques which allows teachers to choose the most relevant option and design the process of education according to any model, including the author's one. Modular learning is based on principles related to general didactic principles such as modularity, dynamism, activity and flexibility in structuring the content of education (Tretyakov & Sennovsky, 2001). Yutsyavichene (1990) states that modular training allows students to independently work with an individual curriculum that includes the necessary actions, information and methodological guidance to achieve the result. Researchers such as Fernandes and Khirwadkar (2016), Kraemer, Ahn, Hillman, and Fei (2009) and Sadenova, Orszakynkyzy, Anuar, and Yesbulatova (2017) agree that the development of speaking skills in a second or foreign language is feasible using modular technology.

Modular learning presupposes the wholeness, completeness and consistency of educational blocks in the form of units (modules). The educational material is structured in the form of a system of educational elements (Yutsyavichene, 1990). A learning module is a logically completed autonomous unit that includes information and activities followed by a certain form of knowledge, skill and ability assessment. Components of the learning module include:

- 1) The name of the module.
- 2) A comprehensive didactic goal.
- 3) Target an action plan for students.
- 4) Educational material.
- 5) Methodological guidance (an algorithm of actions) to achieve goals.
- 6) Practical exercises on the development of the necessary knowledge, skills and abilities.
- 7) Test at the end of the module (Zhanpeisova, 2002).

Teaching Kazakh as a second language based on the ILMT in Russian-medium secondary schools in the Republic of Kazakhstan has not yet been considered in the pedagogical literature. In this respect, this study aims to explore the effects of ILMT on developing students communication skills and overall students' learning achievement in the Kazakh as a second language setting of the Russian-medium schools in the Republic of Kazakhstan.

### 2.1. Research Design

The mixed research design consisting of two stages: quantitative and qualitative was used to determine any differences in students learning outcomes and speaking skills that might be associated with the ILMT in teaching Kazakh as a second language.

The quantitative study used a semi-experimental pre-and post-tests control group design to examine participants' scores before and after an experiment involving the same dependent variable. The participants were placed into two groups: the experimental group (EG) and the control group (CG).

The qualitative study employed phenomenology, a descriptive form of research in which defining facts is more critical than generalizing (Greening, 2019) and was used to investigate how people experience a phenomenon or a situation and what meaning they attribute to it (Arslan, 2021). Observation of the EG classes was conducted at the research sites. The teachers (n=4) and EG students were interviewed after the experiment. Interviews were held with volunteer participants (n=32).

### 2.2. Sample

One hundred and twenty-four seventh-grade students of the Secondary School-Lyceum No. 27 and the Secondary School-Gymnasium No. 17 in Aktobe (Kazakhstan) participated in the study. The participants were randomly assigned to one of two groups: EG (n=63) and CG (n=61). Table 1 shows the demographic information for the participants.

Table 1. Students' demographic information.

Participants	N	%
EG	63	50.8
Secondary school Lyceum No. 27		
7 "B"	31	100
Male	15	48.4
Female	16	51.6
Secondary school Gymnasium No. 17		
7 "A"	32	100
Male	17	53.1
Female	15	46.9
CG	61	49.2
Secondary school Lyceum No. 27		
7 "B"	30	100
Male	15	50

Participants	N	%
Female	15	50
Secondary school Gymnasium No. 17		
7 "Д"	31	100
Male	16	51.6
Female	15	48.4
Total	124	100

### 2.3. Data Collection

The evaluation exam of students' knowledge of Kazakh as a second language was used to collect quantitative data. We used criteria to assess students' understanding of the Kazakh language. Table 2 depicts a three-level scale of students' second language knowledge in Kazakh.

Table 2. Students' knowledge scale of Kazakh as a second language.

Criteria	Indicators
Motivational	1) Creating interest in learning the state language. 2) Formation of a positive attitude among students towards the study of the state language. 3) Satisfaction with the process of learning a language. 4) Meeting the needs of schoolchildren in the study of the state language in the process of using accelerated educational material.
Content	1) Availability of language information knowledge. 2) Focus on the implementation of educational tasks. 3) Consciousness of performing tasks in the process of mastering speech activity.
Procedural	1) Possession of methods for studying language information. 2) The formation of communicative skills and the correction of knowledge based on their comparison with samples of the given environment. 3) The ability to select the best solution to a communicative task among several possible options found in the language learning environment.

A high level of students' knowledge of Kazakh as a second language is characterized by the presence of an increased interest among schoolchildren in learning the state language, a conscious sustainable cognitive activity, a meaningful consistent assimilation of the material, a perfect mastery of the methods of studying language information and communication skills and a motivated approach to learning the state language.

At the medium level, students show a steady interest in the subject, a positive attitude towards learning show good knowledge of the subject that meets the program requirements, operate with communicative information transferring the learning skills to a specific speech situation but do not show enough speech activity.

A low level demonstrates a lack of interest in learning the state language, the presence of poor language knowledge among schoolchildren. Students do not master the methods of active cognitive activity in the process of learning Kazakh language. Typically, such students take an emotionally responsive position but do not seek to express their attitude.

Structured interviews with students were used to acquire qualitative data on how participants perceived the ILMT influenced their attitudes towards learning Kazakh as a second language. In the interviews, the teachers were asked, "What are the benefits of the ILMT in teaching Kazakh as a second language?" The students were asked, "How did the ILMT affect your attitudes towards learning Kazakh language?" followed by probe questions for clarification and elaboration when needed.

### 2.4. Data Analysis

The effectiveness of the ILMT in fostering students' learning achievement was evaluated with pre- and post-tests of students' knowledge of Kazakh as a second language and a communicative skills assessment. The difference in student achievement after applying the ILMT in the Kazakh as a second language classroom was tested using the independent samples *t*-test in SPSS statistics software. These data were triangulated with the ILMT lesson observation and teachers' and EG students' interviews.

### 2.5. Experimental Process

A seminar was held with teachers on the ILMT in teaching Kazakh as a second language with a thorough explanation of the experiment goals, the specifics of fostering speech communication in the lessons of the Kazakh language and the principles of constructing and using teaching materials. Teachers were given recommendations on organizing and conducting the Kazakh language lessons based on developed textbooks (Artykova & Yermekbayeva, 2012). Educational material was based on the training modules for the course "Kazakh language" in grade 7 (Artykova, Yermekbaeva, & Kuldan, 2008). The following goals for conducting the classes were set:

- Teach speaking based on the development of skills in compiling phrases, sentences and coherent texts. Teach the basics of the grammar of the Kazakh language with the help of reference schemes.
- Work out pronunciation, lexical and grammatical skills.
- Develop students' logical thinking.
- Create an emotionally rich atmosphere that evokes an appropriate creative mood and motivation for high-quality mastery of the Kazakh language.
- Activate communication and interaction in groups, cultivate a friendly attitude towards each other and learn to respect peers' opinions.
- Form the skills of independent study of the language.

Classes in the EG and CG were conducted by the same teachers which ensured the unity of requirements for the experiment and allowed the management of the educational process to be done purposefully and effectively. At certain



stages, other teachers were also involved in the experiment which ensured an objective assessment of the students' knowledge, skills and abilities.

Observation was carried out by visiting and analyzing lessons in the EG. Interviews were held with the teachers and EG students who voluntarily agreed to be interviewed.

### 3. Results

Students' knowledge of Kazakh was determined according to the developed criteria based on three levels. Table 3 presents the results of the pre-test of the students' knowledge of Kazakh as a second language in the EG and CG.

Table 3. Results of the pre-test.

Level	EG	CG
Low	61.9%	63.9%
Medium	23.8%	23%
High	14.3%	13.1%

The results of the pre-test indicating the overall students' knowledge of the Kazakh language in the EG and CG were approximately the same: low level students in the EG accounted for 61.9% and in the CG they made 63.9%, medium-level students in the EG accounted for 23.8% and in the CG they made 23%. High-level students in the EG made 14.3% and in the CG they made 13.1%.

Table 4 presents the results of the post-test of the students' knowledge of Kazakh as a second language.

Table 4. Results of the post-test.

Levels	EG	CG
Low	41.3%	62.3%
Medium	30.2%	23%
High	28.6%	14.8%

Comparing the pre-test results indicating the students' knowledge of the Kazakh language (at the high level: the EG: 14.3%, the CG :13.1% at the medium level: the EG :23.8%, the CG: 23 at the low level: the EG:61.9%, the CG:63.9%). The post-test results showed the following values: high level students in the EG: 28.6%, in the CG:14.8%; medium level students in theEG:30.2%, in the CG:23%; low level students in the EG: 41.3%, in the CG:62.3%. The outcomes in the EG are significantly greater than the results in the CG as demonstrated by the post-test of students' achievement in learning Kazakh as a second language based on the ILMT in the secondary school context.

Table 5 presents the average scores of the EG and CG results of the pre- and post-tests.

Table 5. The pre- and post-tests average scores.

Groups	N	Stage	Mean	Median	Std. deviation	95% confidence interval of the difference	
						Lower	Upper
EG	63	Pre-test	3.52	3	0.738	0.627	0.895
		Post-test	3.89	4	0.845	0.719	1.025
CG	61	Pre-test	3.49	3	0.722	0.613	0.879
		Post-test	3.53	3	0.744	0.632	0.906

The average score of students' knowledge of the Kazakh language showed that students in the EG (3.52) and the CG (3.49) had approximately the same level of language skills at the beginning of their studies. The post-test average score in the EG was 3.89 while in the CG it was 3.53.

The independent sample t-test was employed to see if there is a difference in the average score of the test between the EG and CG. The purpose of this test is to verify if the alternative hypothesis is accepted. Table 6 demonstrates the summary of an independent sample t-test of the students' knowledge comparing pre- and post-test groups.

Table 6. The result of the independent T-test.

Stages	Groups	N	M	SD	t	p	Mean difference	95% confidence interval of the difference	
								Lower	Upper
Pre-test	EG	63	3.52	0.74	0.25	0.80	0.03	-0.22	0.29
	CG	61	3.49	0.72					
Post-test	EG	63	3.89	0.85	2.55	0.01	0.37	0.08	0.65
	CG	61	3.53	0.75					

To know whether the ILMT led to increased student achievement in the Kazakh as a second language context, the hypotheses should be tested. For the hypothesis test a p-value less than 0.05 indicating strong evidence against the null hypothesis is considered to be statistically significant.

The rules of hypothesis rejection and acceptance were stated as follows:

1. If p-value is > 0.05, then the null hypothesis is accepted and the alternative hypothesis is rejected.
2. If p-value is < 0.05, then the null hypothesis is rejected and the alternative hypothesis is accepted.

The data in the table indicates that the EG and CG are not affected by the dependent variable according to the means of the pre-test. The results of the independent sample t-test show that the difference between means for the

EG and CG at the pre-test stage of the experiment is statistically non-significant. However, the table demonstrates that the EG and CG are affected by the dependent variable according to the means of the post-test. The t-test results indicate the statistically significant difference between means for the EG and CG at the post-test stage of the experiment.

Thus, the null hypothesis ( $H_0$ : The students' knowledge of Kazakh as a second language is not affected by the ILMT technology in a secondary school setting) was rejected and the alternative hypothesis was accepted.

The study resulted in an increase in the students' speaking proficiency and communication skills in the Kazakh language. Figure 1 displays the EG students' speaking skills in various activities.

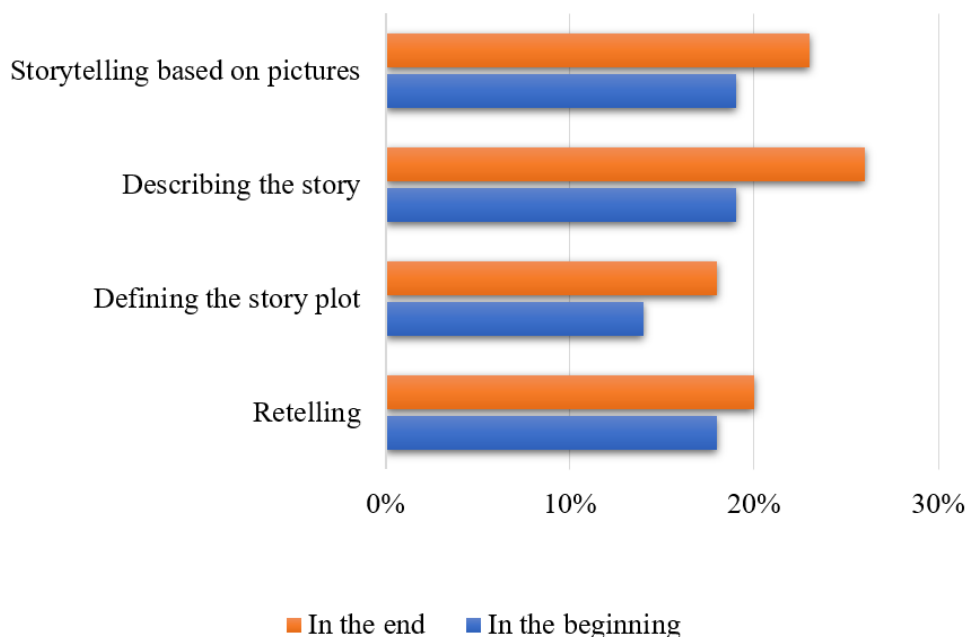


Figure 1. Speaking skills development in various activities.

Figure 1 indicates that the EG students' speaking skills in the Kazakh language due to the work carried out on the developed ILMT system have significantly increased. Applied to various activities, students' speaking skills showed the following improvement:

- Story retelling skills increased by 2%.
- Skills for defining the story plot increased by 4%.
- Story describing skills increased by 7%.
- Skills of storytelling based on a series of plot pictures increased by 4%.

Figure 2 presents the level of the EG and CG students' communication skills in the Kazakh language.

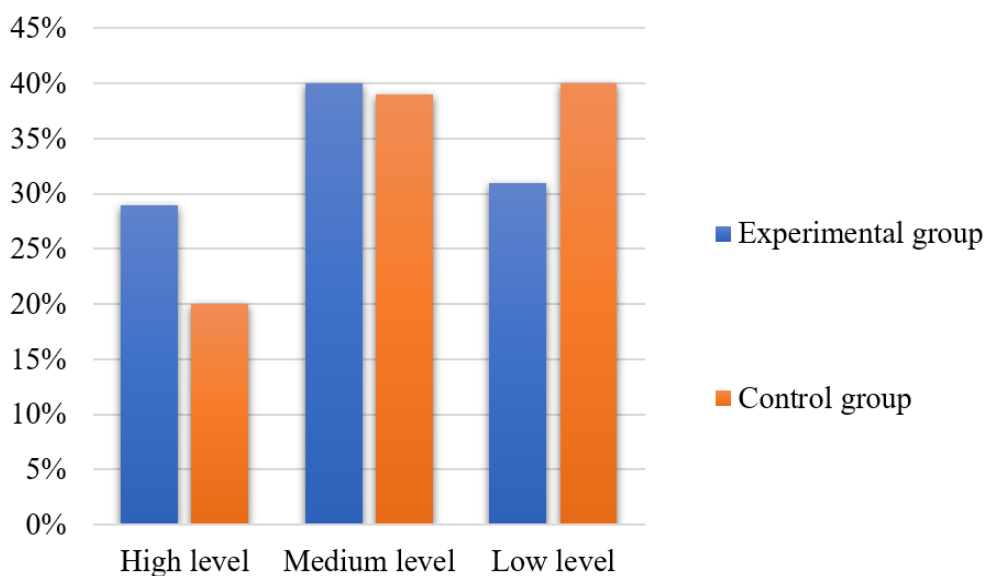


Figure 2. Students' communication skills in the EG and CG.

The results of the students' communication skills assessment showed a positive trend in both literacy and speech processing. The students' active speech activity in the lessons of the Kazakh language in the communication setting based on the ILMT contributed to the increase in the students' overall communication competence and various indicators of speaking proficiency in the Kazakh language.

Observations of EG lessons based on the ILMT proved that the targeted selection of texts and tasks and the inclusion of an educational game in a well-thought-out model of education create a developing language environment that ensures students' speaking skills development. The results revealed that students in an ILMT setting get tired less and experience positive emotions and satisfaction from their learning activities. The dialogic part of the ILMT contributed to the development of students' communication in Kazakh language.

During the lessons based on the ILMT, both teachers and students began to feel confident. Students in the process of preparing the dialogue were free to formulate and express their thoughts. The majority of students developed a steady interest in the Kazakh language and improved their speaking skills. A painless transition from

one level of complexity to another contributed to the formation of positive motivation for learning which allowed for a high score at the end of the training module. Systematic work at a very high level of complexity allowed gifted children to improve their intellectual skills.

Table 7 displays the students' perspectives on using the ILMT in learning Kazakh as a second language.

Table 7. Students' perspectives on the ILMT.

Questions	Yes	No
Do you like learning Kazakh using the ILMT?	28	4
Would you like to continue learning the language using the ILMT?	30	2
Do you like Kazakh language lessons?	19	13
Do you like answering in class?	23	9
Do you like playing teaching games in class?	32	-
Are you willing to do your homework?	21	11
What do you like about the lesson?		
Listening	24	8
Talking	15	17
Reading	17	15
Writing	11	21

Table 7 indicates that students mostly prefer to listen and play during the lessons in Kazakh. Students noted that they began to take the study of the Kazakh language more seriously and expressed their desire to continue studying based on the ILMT. The benefits of using the ILMT in teaching Kazakh as a second language are stated as follows:

“The rules are given in such a way that each student understands”(Lena K.).

“Modules help memorize learning material quickly” (Anton B).

“ILMS is interested and informative!” (Natasha T.).

Qualitative results of the teachers' interviews showed that the ILMT (based on using the basic schemes on lexical topics) helps to facilitate learning the Kazakh language overcome difficulties in mastering grammar, systematize knowledge, foster communication, focus on new material and form strong speaking skills and language abilities. Teachers also noted that reference diagrams are convenient to use to maintain and consolidate grammatical and lexical material in teaching monologue and dialogue speech and when completing listening tasks.

#### 4. Discussion

Since the purpose of this study was to deepen understanding of learning and teaching Kazakh as a second language using the ILMT in Russian-medium secondary schools, it was necessary to identify (1) whether the ILMT leads to increased student achievement in Kazakh as a second language context, and (2) whether using the ILMT increases students' communication skills in Kazakh. Similar to Yutsvichene's (1990) definition of ILMT indicating the wholeness, completeness and consistency of educational modules (logically completed autonomous units containing information and activities followed by a certain form of knowledge, skills and abilities assessment) structured in the form of a system of educational elements, the present evidence relies on the developed ILMT system textbooks of Artykova and Yermekbayeva (2012) and the training modules for the course “Kazakh language” grade 7 by Artykova et al. (2008). We found out that the Kazakh language in a secondary Russian-medium school setting should be taught in an authentic language environment with the immersion of students in and outside the classroom, overcoming the psychological barrier carried out by the content analysis of previous study findings (Jabrailov, 2018). This is possible in a relaxed atmosphere with interesting thematic speech situations, inspiring confidence in the correct selection of language tools and constructing speech (Flynn, 2016).

The findings of our study suggest that students can retain the knowledge of Kazakh as a second language better in conditions where they are taught using the ILMT based on the developed textbooks of the Kazakh language for Russian-speaking students. The experimental process conducted with the students proved that the EG students' communication skills in the Kazakh language significantly increased due to the work carried out on the developed ILMT system. This finding is in line with Kraemer et al. (2009), Fernandes and Khirwadkar (2016) and Sadenova et al. (2017) which state that the development of speaking skills in a second and foreign language is feasible using modular technology. We have verified during the observation that the ILMT creates a developing language environment in which students get tired less, experience motivation for learning and positive emotions and satisfaction from their learning activities. Both teachers and students feel confident and are free to formulate and express their thoughts. The survey results demonstrating the benefits of using the ILMT in teaching Kazakh as a second language such as the understandability of the study materials (the degree of comprehension by students), quick and easy memorization, interestingness and informativeness stated by the students, convenience of using reference diagrams to maintain and consolidate grammar and lexical material, efficiency in teaching monologue and dialogue speech and completing listening tasks stated by the teachers go beyond the findings of previous studies.

The results confirm that the ILMT based teaching of Kazakh as a second language in secondary Russian-medium schools is a good choice for fostering students speaking and communication skills and overall achievement.

#### 5. Conclusion

This research investigated whether the ILMT can lead students to increased gains in learning outcomes and improved speaking and communication skills in teaching Kazakh as a second language in Russian-medium secondary schools in the Republic of Kazakhstan. The ILMT implemented based on the developed textbooks of the Kazakh language for Russian-speaking students is efficient in improving the quality of mastering the Kazakh language and fostering students' learning achievement as proved by the quantitative study. The independent sample t-test demonstrated that the average score of the post- test in the EG and the CG differs significantly. The average score of the EG (3.89) is significantly better than the average score of the CG (3.53). The EG students' communication skills in the Kazakh language due to the work carried out on the developed ILMT system have

significantly increased. The qualitative study showed that during the experiment, students felt more confident, freely formulated and expressed their thoughts. The majority of students formed a steady interest in the Kazakh language and showed improvement in their speaking skills and logic of thinking. Learning a second language based on the ILMT helps to reduce students' anxiety, increase independence which is necessary for the development of students' communication skills. The use of the ILMT including the accelerated theoretical educational material, communication, interactive teaching, level differentiation of tasks, the system of "encouraging" and stimulating assessments gives the maximum return because all students are included in the educational process and an active speaking activity regardless of their language proficiency level.

The study showed that the students' improved learning achievement and the development of communication skills depend on the effectiveness of the comprehensive training system based on the ILMT in teaching Kazakh as a second language in a secondary school setting which provides for the purposeful organization of various work at different levels. The researchers of this study make recommendations for using the ILMT in teaching a second language in a wider context.

## 6. Future Implications

Teaching Kazakh as a foreign language is currently being investigated by us and the experience we have accumulated in using ILMT in teaching Kazakh as a second language is being applied by us. The study results will contribute to the effective methodology of teaching Kazakh as a second language in line with Zhiyenbayev (1937) who emphasized that teaching Kazakh can be of the highest quality if a teacher uses the experience of teaching foreign languages in practice. ILMT's teaching Kazakh as a foreign language to Russian-speaking ethnic Kazakhs living abroad is helpful in the process of implementing the system of ethno-cultural units. The study results on teaching Kazakh as a foreign language will be presented in detail in future publications.

## References

- Aksholokova, A., & Ismailova, N. (2013). The language policy of Kazakhstan and the state language in government service. *Procedia-Social and Behavioral Sciences*, 93, 1580-1586. <https://doi.org/10.1016/j.sbspro.2013.10.085>
- Arslan, A. (2021). Preservice classroom teachers' applications of science experiments with cooperative learning model: A mixed design research. *Educational Policy Analysis and Strategic Research*, 16(3), 39-55.
- Artykova, T. M. (1999). *Basic schemes for the Kazakh language yuBasik shemes yn te Kazakh language*. Aktobe. Retrieved from <http://e-lib.dulaty.kz/kk/lib/document/TARGU/F9A8605B-21A4-4040-AB4E-FF072AB349AB/>
- Artykova, T. M., Yermekbaeva, G. G., & Kuldán, S. S. (2008). *Reference drawings on the Kazakh language. designed for the 7th grade of a comprehensive school*. Almaty: Atamura.
- Artykova, T. M., & Yermekbaeva, G. G. (2012). *Kazakh language teaching methodology: For teachers of the 7th grade of secondary school with Russian language of instruction* (3rd ed.). Almaty: Atamura.
- Ayapbergenova, K. G. (1982). *Some issues of teaching the Kazakh language in the Russian audience*. Almaty: Mektep.
- Baitursynuly, A. (2009). *Language – means*. In E. Tuleshov (Ed.). Almaty: Sardar Baspasy.
- Bekturov, S., & Bekturova, A. (1994). *Kazakh language for beginners. Textbook for classroom and circle, independent tasks*. Almaty: Rauan 2004.
- Concept of the Language Policy of the Republic of Kazakhstan. (1996). *Kazakhstan truth*. Retrieved from [https://adilet.zan.kz/rus/docs/N960003186\\_/links](https://adilet.zan.kz/rus/docs/N960003186_/links)
- Dunkel, H. B. (1969). *Herbart and education*. New York: Random House.
- Fernandes, F. T. T., & Khirwadkar, A. (2016). Development of modules for enhancing English language abilities among the students of primary teacher education programme. *Research Journal of Language and Literature Humanities*, 3(4), 1-9.
- Flynn, E. E. (2016). Language-rich early childhood classroom: Simple but powerful beginnings. *The Reading Teacher*, 70(2), 159-166. <https://doi.org/10.1002/trtr.1487>
- Greening, N. (2019). Phenomenological research methodology. *Scientific Research Journal*, 7(5), 88-92. <http://dx.doi.org/10.31364/SCIRJ/v7.i5.2019.P0519656>
- Jabrailov, A. D. (2018). Modeling the language environment in teaching a foreign language to high school students. *World of Science, Culture, Education*, 2(69), 191-193.
- Kraemer, A., Ahn, S., Hillman, S., & Fei, F. (2009). Innovative learning modules for language in context: MIMEA. *CALICO Journal*, 27(1), 187-204.
- Kuzembayeva, G., Kulbayeva, A., Maydangalievá, Z., & Urkunova, A., & Kuppenova, A. (2021). Survey of Indian medical students' adaptation in Kazakhstan: Psychological, sociocultural, and academic dimensions. *Education and Self Development*, 16(4), 25-35.
- Law of the Republic of Kazakhstan. (2007). Law of the republic of Kazakhstan "On Education" (No. 319-III of July 27, 2007, as amended as of January 10, 2020). *Kazakhstanskaya Pravda*, August 15, 2007, 127(25372).
- Law of the Republic of Kazakhstan on Languages in the Republic of Kazakhstan. (1997). *Texts of the law of the republic of Kazakhstan "On languages in the republic of Kazakhstan" and "The concept of language policy in the republic of Kazakhstan*. Almaty: Zheti Zhargy.
- Lukaš, M., & Munjiza, E. (2014). Education system of John Amos comenius and its implications in modern didactics. *Life and School*, 60(31), 32- 44.
- Oralbaeva, N., Yessenov, H., Khairullina, S. (1989). *We study the Kazakh language*. Almaty: Mektep.
- Orazbaeva, F. S., Kasym, B. K., Baltabaeva, Z. K., Orazakhynova, N. A., & Rakhmetova, R. S. (2016). *Methods of teaching the Kazakh language: Textbook*. Karaganda: Medet Group.
- Sadenova, A. E., Orazakynkyzy, F., Anuar, S., & Yesbulatova, R. M. (2017). Using innovative technologies in project method of teaching foreign language. *Espacious*, 38(25), 1-8.
- Sarybaev, S. K. (1959). *Some issues of the Kazakh language methods*. Almaty: Kazakh Memlekettik Pku-ped. Baspasy.
- Shonanov, T. S. (1933). *Textbook on the Kazakh language*. Almaty. Retrieved from <https://kazneb.kz/en/catalogue/view/1550983>
- Terlikbayeva, N., & Menlibekova, G. (2021). The dynamics of language shift in Kazakhstan. *Journal of English Language Teaching and Applied Linguistics*, 3(2), 12-22. <https://doi.org/10.32996/jeltal.2021.3.2.2>
- Tokpayeva, L. S., Kuzembayeva, G. A., & Spulber, D. P. (2024). A comparative lexical analysis of Kazakh, Russian and English children's Folklore. *RUDN Journal of Language Studies, Semiotics and Semantics*, 15(1), 107-125. <https://doi.org/10.22363/2313-2299-2024-15-1-107-125>
- Tretyakov, P. I., & Sennovsky, I. B. (2001). *Technology of modular education at school: A practice-oriented monograph*. Moscow: Novaja shkola.
- Vakhitova, T., Kuzembayeva, G., Yergazina, A., Zhumakhanova, A., & Khayrullina, R. (2022). Kazakh and Russian Kinship terminology: A comparative linguistic and cultural analysis of lacunae. *Eurasian Journal of Applied Linguistics*, 8(1), 28-43.
- Yermekbaeva, G. G. (2020). The language environment as a psychological factor of teaching a non-native language. *Modern High-Tech Technologies*, 3, 143-147. <https://top-technologies.ru/en/article/view?id=37956>
- Yutsyavichene, P. A. (1990). *Theoretical foundations of modular learning*. Thesis of Doctor of Pedagogical Sciences, Vilnius.
- Zhanpeisova, M. M. (2002). *Modular learning technology as a means of student development*. Almaty: DOIVA.
- Zhiyenbayev, S. (1937). Methodology of teaching Kazakh in Russian school. *Public Teacher*, 7, 41-56.