

## SYSTEM OF ENGLISH EXERCISES FOR IMPROVING MEMORY IN INTERPRETER EDUCATION

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**Abstract.** *This article describes the role of short-term memory in the interpreter's activity and the development of its capacity in interpreting students. Considering the fact that students are rarely or not at all offered short-term memory training exercises during a translation course, the authors of the article propose a system of memory training exercises that can be integrated into two of the three stages of an interpreting course: series of numbers and their combination with a noun, echo repetition, 'snowball' type exercises; exercises with mnemonics; and typified grammatical and semantic structures. Based on the developed typology of exercises, we propose a lesson-by-lesson scheme for combining different types of exercises and thematic organisation of classes in an interpreting course. The effectiveness of classes with sequential implementation of such exercises, as opposed to courses without their application, was experimentally determined. It was found that the systematic and consistent performance of memory exercises during a semester increases the capacity of operative memory units and the degree of accuracy of the reproduced invariant indicated by a noticeable decrease in omissions, additions, substitutions, or mistakes. Based on the results, it is concluded that it is advisable to practice memory training not only directly in translation classes but also in foreign language classes in the first and second years so that students master the necessary competencies before they begin their translation studies.*

**Key words:** *interpreting, interpreting training, short-term memory, pedagogical experiment, typology of exercises*

### 1. INTRODUCTION

One of the important mechanisms of translation activity is memory. In translation activity, memory is the retention of information about verbal cues after their action has already ceased (Serova, 2001, p. 119). All types of memory are important in translation activity, but their role varies depending on the type of translation (Daro, 1997, p. 622-628; Zhong, 2001, p. 37). According to experimental data, Y. Kozelecky designates short-term memory as the main system where the processes of current information processing occurs (Kozelecky, 1979, p. 44), so it is often called operational memory (Atkinson, 1980, p. 54) or working memory

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(Dong et al., 2015). It is into short-term memory that information from sensory memory and information sampled from long-term memory go. Calling short-term memory active, working memory, or working memory, it should be noted that it plays an active role in processing information, as opposed to traditional views of it that attribute to it a passive role as an intermediate link on the way to long-term memory. In addition, the information contained in working memory is directly accessible to a person, and its retrieval is carried out quite quickly and accurately. It is considered a necessary component of any activity, ensuring its success with other mental processes (Alekseeva, 2019, p. 18).

Short-term memory plays an important role in the translation process, thanks to which the translator can memorise many linguistic units within a predetermined period of time. After translation, the incoming information may disappear from the short-term memory. Short-term memory helps a person perceive data at a certain moment, retain them in memory, and transform them (Alekseeva, 2019, p. 17). J. Miller established that the duration of short-term memory is 15–20 seconds. Its volume includes five to nine units (Miller, 1956). This memory functions without a preliminary setting for memorising information but rather with the setting for further reproduction of the material after some time.

Turning to the publications that focus on ways to improve memory performance, it should be noted that their authors point to the need to integrate different skills in the interpreter training process (Emelyanova, 2024, p. 191). According to M. Lee, short-term memory – which is involved in the coordination and regulation of ongoing information processing – may be one of the factors that determines the competence of interpreters. According to the results of an experiment that involved measuring the working memory capacity of interpreters with more than 10 years of experience and novices with fewer than 3 years of experience, V. Lee concludes that the efficiency of using short-term memory resources for interpreting increases with experience and training (Lee, 2011, p. 106-107). According to I.S. Alekseeva, the amount of text that an interpreter can remember is a controlling indicator of his/her memory mobilisation (Alekseeva, 2001, p. 54). The importance of short-term memory training is also noted in other works (Heuven et al., 2016, p. 80; Jiang et al., 2018, p. 1470; Selezneva, 2023, p. 150; Zefirov, 2015, p. 15).

To improve the quality of interpreting with poorly developed short-term memory, it is recommended to use translation shorthand (Heuven et al., 2016, p. 10) as well as various mnemotechniques (Soanes et al., 2006, p. 477) and other effective memorisation techniques (Stanojević Gocić et al., 2023, p. 608). Interpreting teachers are increasingly insisting that exercises to develop short-term memory capacity be included in the teaching of interpreting (Alekseeva, 2001; Hambrick et al., 2002; McNamara et al., 2001; Prins et al., 2011). In addition, experimental studies confirm that the translator's memory capacity can be increased by periodically performing special exercises (Jiang et al., 2018, p. 1470).

Thus, the methodological literature on teaching interpreting recognises the need to consider the factor of short-term memory in the process of teaching interpreting students, without the development of which their future professional activity may be complicated.

## 2. THE PURPOSE OF THE STUDY AND RESEARCH METHODS

An analysis of interpreting curricula at some leading universities in Germany (Universität Bonn, Universität Heidelberg), Russia (Moscow State University, Moscow State Linguistic University), and the United States (State University of New York at Binghamton, The

Graduate School of Translation and Interpretation) in translation studies has shown that students are not offered short-term memory training techniques during the translation course, despite the fact that there are books with memory exercises. Teachers avoid introducing such exercises into their classes because they believe that it may consume class time to the detriment of training direct translation skills and mastering translation transformations. In addition, the exercises presented in these publications are designed for a wide range of users and do not consider the thematic specifics on which interpreting courses are based. To eliminate this shortcoming, we developed a set of exercises that can be integrated into interpretation classes. In our work, we were guided by the thematic lesson plan on which the course on interpreting in the political science program at MGIMO University (Moscow, Russia) is based. We assume that any interpreting class consists of three stages – in the first two of which it is advisable to integrate memory training exercises. The first stage, which lasts up to 20 minutes, involves ‘warming up’ the speech apparatus, developing speech technique, training short-term memory through exercises on repetition of rows of numerals and combinations of numerals with nouns, and reciting mnemonic verses. In the second stage, which lasts up to 20 minutes, individual translation skills are practiced. This stage includes exercises to develop working memory capacity – echo repeats, snowball exercises, and exercises with typified grammatical and semantic structures. The third stage of the lesson covers the remaining 40 minutes and includes translation exercises, i.e., translating unfamiliar texts from one language into another. As a homework assignment, each time the students must echo-repeat the given text, save it in an audio file, and submit it to the teacher for checking.

### 3. RESULTS AND DISCUSSION

#### 1. Typology of exercises for the development of short-term memory of interpreting students

The literature presents various memory exercises in the process of teaching translation: completion of the teacher’s statements, shadowing, answering questions on the listened text, consecutive repetition of numbers and words, cursive phrases to practice diction, associations, repetition of sentences by ‘snowball’ type, rhyming, mnemonic-images, memorization of the text and restoration of the text content by ‘snowball’ chain, and memorization and reproduction of text fragments (surnames, names of objects, numbers) (Fomina et al., 2023). Next, we will present our typology of exercises for training the short-term memory of transfer students. The wording of the tasks will indicate which language or translation is in question, with L1 denoting the language of instruction or mother tongue and L2 denoting English as a foreign language.

##### 1.1. Exercises on rows of numbers and their combination with nouns

The purpose of performing exercises on rows of numbers and their combination with nouns, along with training the memory to memorise both precision and non-precision vocabulary, is to develop the ability to switch quickly from one language to another and from one type of information to another. In each subsequent lesson, exercises with an increasing number of components of the series are suggested:

*Exercise 1. Repeat after the speaker in L2 a series of four digits without changing their order.*

4 12 1 35  
2 15 9 65  
<...>

*Exercise 2. Translate the numerals consecutively into L2 by adding 1. For example, if the speaker says 24 in L1, you should translate 25 into L2.*

12 67 92 44 10 59 37 28 ...

*Exercise 3. Repeat in L1 a consecutive row of three representatives of different nationalities and their quantitative designations. The row is constructed according to the principle 'one representative of European nationality – several representatives of European nationality – several representatives of nationalities of other continents.'*

One German – two Slovaks – nine Americans.  
One Croatian – four Hungarians – seven Brazilians.  
<...>

*Exercise 4: Repeat in L2, following the speaker, the information in L1 about the distance between different cities, adding after each city the country in which it is located.*

Vienna – Bratislava 67 km.  
Berlin – Brno 539 km.  
<...>

*Exercise 5. Translate the numerals consecutively into L2, subtracting 1. For example, if the speaker says 124 in L1, you should translate 123 into L2.*

124 673 920 441 102 594 378 <...>

The next type of exercise is a combination of numerals and nouns. In addition to memory training, such exercises are aimed at students' mastering the name of precision vocabulary in a foreign language, i.e., proper names:

*Exercise 6. Follow the speaker in L2 and repeat a series of place names without changing their order.*

Saxony, the Alps, the Baltic Sea, the Caucasus, the Danube, and the Sahara.  
Catalonia, Carpathians, Black Sea, English Channel, Kalahari, Ural Mountains.  
...

*Exercise 7. Follow the speaker in L2 and repeat a series of weather forecasts for different cities without changing the order of the forecasts.*

Cologne +12 degrees Celsius, Paris +9 degrees Celsius, Prague +12 degrees Celsius.  
Rome – Rain, Copenhagen – Hail, Munich – Snow.  
<...>

*Exercise 8. Repeat the results of a sporting event after the speaker in L2.*

Champions League 2011/2012: Bayern Munich – Manchester City 2:0.  
Bundesliga: Werder Bremen – Borussia Dortmund 3:1.  
<...>

*Exercise 9. Repeat the summary of the election results in L2 after the speaker, without changing the order of the data. Each student translates two results.*

Bundestag elections 1949: Christian Democrats 31 percent, Social Democrats 29.2 percent.

U.S. presidential election 2004: George Bush – 50.7 percent, John Kerry – 48.3 percent.

<...>

*Exercise 10. Repeat after the speaker the information about the years when different countries joined some international organisations without changing the order of the data. When repeating, give the full name of the international organisations.*

Spain NATO 1982, Germany UNESCO 1951, Algeria OPEC 1969.

Georgia WTO 2000, Chile APEC 1994, Canada G7 1976.

<...>

*Exercise 11. Repeat the ingredients of the dishes in L2 after the speaker without changing the order of the ingredients.*

Green potato salad: 1 kg boiled potatoes, 300 g frozen bean pods, 150 g arugula, 1 ripe avocado.

<...>

*Exercise 12. Repeat after the speaker in L2 the number series of fish without changing their order.*

North Sea crab 59 € per kilo, salmon fillet 31 € per kilo, trout 15 € per kilo, sea bream 22 € per kilo.

<...>

*Exercise 13. Follow the speaker in L2 and repeat the number series of birds without changing the order of the birds.*

35 Storks, 12 Cranes, 47 Falcons.

246 eagles, 356 quails, 469 gulls.

<...>

*Exercise 14. Repeat economic statistics in L2 after the speaker without changing their order.*

Lignite production in million tonnes in 2009: Germany 170; China 120; Russia 68.

Crude oil production in million tonnes in 2011: Saudi Arabia 525; Russia 511; USA 352.

<...>

### **1.2. The Shadowing technique**

Another type of exercise to develop the short-term memory capacity of interpreting students is so-called shadowing, which involves thoroughly practicing an audio text and then reading it simultaneously with the speaker or slightly behind the speaker or with a slight lag behind him/her while mimicking as much as possible the articulation, intonation, pace, and rhythm of the speaker's speech (Golenko, 2022, p. 40; Sumarsih, 2017, p. 184). In addition, students acquire the initial skills of simultaneous interpreting (simultaneous listening and speaking), developing clean articulation of sounds at a fast pace of speech:

*Exercise 15. Shadowing. Step back 2–3 words and repeat the sentences in half-voice after the speaker. Be ready to repeat in full voice on the teacher's command.*

More than 90 percent of Europe's inhabitants speak Indo-European languages. Slavic, Germanic, and Romance languages are the most common. Greek, Albanian, Baltic and Celtic languages, and Romani are also Indo-European languages. <...>

*Exercise 16. Shadowing. Say in L2, observing the pronunciation norm when rendering proper names.*

Napoleon Bonaparte, Tolstoi Lew Nikoilaevich, Luiz Inácio Lula da Silva, Charles Philip Arthur George, Salvador Domingo Felipe Jacinto Dalí i Domènech <...>

*Exercise 17. Shadowing. Translate into L2, observing the German pronunciation norm for proper names.*

Giorgio Cavalli in Milan and Polina Sidorova in Ekaterinburg.  
Katarína Garajová in Košice and Sabiene Altmayer in Hamburg.  
<...>

*Exercise 18. Shadowing. Repeat the sentences half-voiced after the speaker, 1–2 words apart. There are gaps in the texts; they are indicated by silence (in the exercise, they are in bold). During the repetition, fill them in according to the meaning. Be ready to continue the repetition in full voice on the teacher's command.*

Next week, I am flying to the Czech Republic. My good friend Karel lives in the capital of the Czech Republic **Prague**. He is a Czech. I am taking 1,200 **Czech crowns** with me to the Czech Republic, and I want to visit Prague and Karlovy Vary.

I will spend my holiday in the capital of Germany – **Berlin**. In Berlin, I know Jens and Anne. Jens and Anne are **Germans**. I withdrew 200 **euros** from an ATM at Berlin's airport. The euro has been in use in Germany since 2002, but my grandfather believes that the national currency of Germany is still **the German mark**.

*Exercise 19. Shadowing. Repeat the sentences in a half-voice after the speaker after 2–3 words. Be ready, on the teacher's command, to continue repeating in full voice.*

The prefix 'Latin' in 'Latin America' indicates the origin of the Romance languages, namely Latin. The term 'Latin America' now encompasses all American countries whose official languages are Spanish or Portuguese. Some countries also use English and French in addition to their native languages. <...>

*Exercise 20. Shadowing. Repeat the sentences in a half-voice after the speaker after 3–4 words. Be ready, on the teacher's command, to continue repeating in full voice.*

Hockey players of the Slovak national youth team beat the Canadian national youth team with players under 20 years of age 3:1. This is already the second victory for the Slovak team. In the first round, they defeated the team from Switzerland with a score of 3:0. The Slovak national team will also play against Latvia and Sweden. The World Championship will last until January 5. <...>

*Exercise 21. Shadowing. Stand back for 4–5 words and repeat the sentences after the speaker in a half-voice. Be ready, on the teacher's command, to continue the echo-repeat in full voice.*

Germany was one of the six founding members of the current EU in 1957. As of 2024, it comprises 27 states, and the official currency in many EU countries is the euro. <...>

*Exercise 22. Shadowing with elements of simultaneous translation. Translate the names of countries and telephone codes into German. Add the capitals of the respective countries when translating, e.g.: Slovakia 421–Slovakia 421, Bratislava.*

Lithuania 370, Australia 61, Luxembourg 352, USA 1, Sweden 46, Czech Republic 420, Austria 43, Turkey 90, Ukraine 380, Serbia 381, China 86, Azerbaijan 994, Romania 40, Finland 358, Japan 81, Syria 963, Poland 48, Algeria 213, France 33, Portugal 351, Argentina 54, Uzbekistan 998, Armenia 374, Norway 47, Russia 7, Belgium 32, Brazil 55.

### 1.3. 'Snowball' exercises

Training of short-term memory is also ensured by several repetitions of the same semantic segments in context. This is facilitated by snowball-type exercises, the essence of which is as follows: As the number of words that students need to must reproduce increases, the syntactic structure of the utterance becomes more complex. The more often the embedded element is repeated, the more successfully it is fixed in memory. Through the development of the skill of stepwise lengthening of structure and the skill of syntactic linear unfolding, whole phrases are learned effectively, and interlingual correspondences are learned quite firmly. In addition, snowball exercises are an excellent example for memorising both large amounts of information and the order of units in a text (Zahorák, 2021, p. 95-96):

*Exercise 23. Repeat after the speaker the sentence you have been given (new elements at the next presentation of the utterance in the exercise are marked in bold).*

1. Europe is divided into Eastern Europe, Central Europe, and Western Europe.
2. **From a geopolitical point of view**, Europe is divided into Eastern Europe, Central Europe, and Western Europe.
3. From a geopolitical point of view, Europe is divided into Eastern Europe, **which includes the former Soviet republics**, Central Europe, and Western Europe.

<...>

10. From a geopolitical point of view, Europe is divided into Eastern Europe, which includes the former Soviet republics **Russia, Ukraine, Belarus, Moldova, Georgia, Armenia, and Azerbaijan**; Central Europe, **which includes the former socialist bloc countries Poland, Czech Republic, Slovakia, Romania, Bulgaria, Albania, and the former Yugoslav republics Serbia, Croatia, Slovenia, Montenegro, Bosnia-Herzegovina and North Macedonia**; and Western Europe, **which includes all former capitalist countries: Great Britain, Germany, France, Italy, Spain, Portugal, Greece, Switzerland, Austria, and the Scandinavian countries.**

### 1.4. The mnemonic linking system

The next type of exercise for developing the short-term memory of transfer students is the mnemonic linking system. It comprises the construction of texts that create a story based on sequences of actions, vivid images, and associative chains (Sacks-Zimmerman et al., 2018). Texts within the mnemonic linking system are sometimes created in verse

form (Osyanova et al., 2020, p. 48). With memory training to memorise the completeness of information, the mnemonic linking system helps students memorise the order of the components of an utterance. The following exercises within the mnemonic linking system were used in our interpreting course:

*Exercise 24. Listen to the text and complete the following tasks: 1) List all the nationalities in the order and gender in which they occur. 2) How is each nationality characterised? 3) Try to reproduce the whole text.*

#### Stereotypes

A proud Swede,  
Two hard-working Latvians,  
Three quiet Finns,  
Four sporty Norwegians who always win something,  
Five fast and boisterous Poles who love to shop,  
Six serious, well-mannered Brits who only understand English,  
Seven full-bodied Germans who eat their sausages,  
Eight cheerful Frenchmen who forget all their problems,  
Nine beautiful, slim Czech women who don't rush to work,  
Because ten strong Slovaks are coming to meet them.

*Exercise 25. Listen to the text and do the tasks:*

*1) Name all the names that include the element shuck.*

*2) Name all the names that include the element sipp.*

*3) Retell the text.*

Once upon a time, there was a man who had three sons.

One was called Shak,

another was called Shakshavverak.

and the third was called Shakshavverakshakomini.

There was also a woman who had three daughters.

One was called Sipp, one was called Sipsivelipp,

and the third was called Sipsivelippsippomini.

And Shak took Sipp,

and Shakshavverak took Sipsivelipp,

and Sakshavverak took Sakshakomini as his wife Sipsivelipsippomini.

Children were born to the couple, and they gave them double names:

Shak-Sipp,

Shakshavverak-Sipsivelippe, and

Schackschawwerackschackomini-Sippsiwvelippsippomini.

*Exercise 26. Listen to the text and perform the tasks:*

*1) Name all the composites that include the component 'Rhubarb'.*

*2) Listen to the text again and retell it.*

In a small village, there once lived a girl with the name Barbara. And Barbara was known everywhere for her wonderful rhubarb cake. Therefore she was also called Rhubarb Barbara. Rhubarb Barbara noticed quickly that she could make money with her cakes and opened a bar: The Rhubarb Barbara Bar. The Rhubarb Barbara Bar went well



and quickly had regular customers. And the three most well-known of them, three Barbarians, came so often to the Rhubarb Barbara Bar to eat Rhubarb Barbara Bar's delicious rhubarb cake that they were called the Rhubarb Barbara Bar Barbarians for short. The Rhubarb Barbara Bar Barbarians had beautiful beards. And when the Rhubarb Barbara Bar Barbarians wanted to maintain their Rhubarb Barbara Bar Barbarians Rhubarb Barbara Bar Barbarians Beards, they went to the barber. The only barber that could handle such a Rhubarb Barbara Bar Barbarians' Beard was called Rhubarb Barbara Bar Barbarians Beard Barber. The Rhubarb Barbara Bar Barbarians Beard Barber also liked to go to the Rhubarb Barbara Bar. And in addition to eating Rhubarb Barbara Bar's delicious rhubarb cake, he liked to drink a beer, which he ceremoniously called Rhubarb Barbara Bar Barbarians Beard Barber Beer. The Rhubarb Barbara Bar Barbarians Beard Barber Beer could only be purchased at a very specific bar. And the person selling the Rhubarb Barbara Bar Barbarians Beard Barber Beer at the counter of the Rhubarb Barbara Bar Barbarians Beard Barber Beer Bar was named Baerbel. And so the Rhubarb Barbara Bar Barbarians, together with the Rhubarb Barbara Bar Barbarians Beard Barber Beer and Rhubarb Barbara Bar Barbarians Beard Barber Beer Bar Baerbel, went to the Rhubarb Barbara Bar to eat Rhubarb Barbara Bar's delicious rhubarb cake and to clink a glass of Rhubarb Barbara Bar Barbarians Beard Barber Beer (World Translation Center, 2022).

### 1.5. Exercises with typified grammatical and semantic structures

The last type of exercises used in our interpreting course to train students' short-term memory capacity are utterances with typified grammatical and semantic structures. They represent an element of preparation for simultaneous interpreting:

*Exercise 27. Translate the following statements synchronously. Pronounce your translation in a half-voice. Be ready to continue translating in full voice at the teacher's command.*

Catholics make up 56 percent of all CDU party members.

Bavarians make up 14 percent of the total German population.

<...>

*Exercise 28. Translate the following statements. Pronounce your translation in a low voice. Observe the German pronunciation norm for proper names. Be ready to continue translating in full voice at the teacher's command.*

Germany's largest companies

Aldi, from the retail sector, headquartered in Mülheim near Essen, is ranked 13th in Germany with 200,000 employees.

Airbus from the copper production sector, headquartered in Hamburg, is ranked 47th in Germany with 4,831 employees.

<...>

The above-presented typology and thematic organisation of exercises for the development of short-term memory in transfer students can be summarised in the following table (Table 1):

Table 1 Distribution of types of exercises for the development of short-term memory by themes of lessons

Lesson No.	Lesson topic	Exercise numbers
1	Introductory lesson	Ex. 1, Ex. 15
2	European countries	Ex. 1, Ex. 2, Ex. 23
3	Countries of the world	Ex. 3, Ex. 16
4	Cities	Ex. 4, Ex. 17
5	Hydronyms	Ex. 4, Ex. 5, Ex. 23
6	Geography	Ex. 6, Ex. 22
7	Weather and natural disasters	Ex. 7, Ex. 18
8	Sports	Ex. 8, Ex. 19, Ex. 23
9	Plants	Ex. 11, Ex. 20
10	Animals and fish	Ex. 12, Ex. 23
11	Birds	Ex. 13, Ex. 24
12	Politics	Ex. 9, Ex. 27, Ex. 23
13	International organizations	Ex. 10, Ex. 21, Ex. 25
14	Economics	Ex. 14, Ex. 28
15	International cooperation	Ex. 10, Ex. 26

## 2. Experimental study of the effectiveness of exercises on the short-term memory of future translators

It is obvious that interpreting students develop their short-term memory capacity even without special exercises. This is because students learn new words on a regular basis, perform oral translation of texts from their native language into a foreign language and vice versa, listen to audio texts, try to memorise as much information as possible, and perform other types of exercises related to learning a foreign language and translation. This assumption has been tested earlier in practice during the experiment (Alekseeva, 1991: 19), where at the initial stage of mastering the oral translation, the first-year students were noted to have operational memory units of small capacity (8.0 syllables). In addition, the subjects at the beginning of the course are distinguished by the lowest accuracy of the reproduced invariant according to the highest number of omissions or omissions (25.3 syllables), additions (2.1 syllables), and substitutions or errors (5.6 syllables). Conversely, after the first semester of the interpreting course, the subjects were characterised by an increase in the capacity of operative memory units (9.3 syllables). The greatest degree of accuracy of the reproduced invariant was achieved through a marked decrease in omissions (18.3 syllables), additions (1.8 syllables), and substitutions or errors (3.9 syllables).

An experiment was conducted to determine the effectiveness of using the developed set of exercises for developing working memory in students attending a translation course. The participants of the experiment were two groups of Kant University students, nine students each, who studied a course of political translation from German into Russian during four semesters. The first group studied interpreting according to the traditional programme, which lacked special exercises for the development of short-term memory. In the second group, the classes were conducted with the consistent use of short-term memory exercises.

Before starting the translation course, the students were tested to determine their short-term memory capacity, the number of omissions and omissions of information elements in the

audio text, additions of missing information elements, and substitutions of heard information elements and other errors. The students were asked to listen to 10 sentences in a foreign language with a number of syllables from 15 to 25 and repeat them as accurately as possible. The words in the text were selected so that they did not exceed three syllables. A similar test was conducted with each student from both groups at the end of the first semester of translation studies. The results of the tests were compared with a similar experiment conducted by T. D. Alekseeva and presented in the form of a table (Table 2):

Table 2 Experimental results on the development of working memory in transfer students from different academic courses

	Alekseeva's experiment		A course without memory exercises		A course with memory exercises	
	Beginning of study	End of study	Beginning of study	End of study	Beginning of study	End of study
Memory capacity (syllables)	8,0	9,3	7,7	9,0	7,9	10,2
Omissions (syllables)	25,3	18,3	26,9	19,8	27,2	17,9
Addenda (syllables)	2,1	1,8	3,0	2,2	3,0	2,0
Substitutions and errors (syllables)	5,6	3,9	5,9	4,3	5,7	3,4

#### 4. CONCLUSION

The importance of short-term memory development in the professional work of a interpreter is a recognised fact. The greater the interpreter's capacity, the more effective his the work is. In this regard, it is necessary to train short-term memory as early as possible during interpreting courses at university. The analysis of curricula in various countries has shown that in interpreting classes, memory exercises are either not provided at all or are performed inconsistently and unsystematically. To prove the effectiveness of short-term memory exercises, we developed a corpus of exercises that followed certain rules:

1. Increasing the number of components of the series in each subsequent lesson;
2. Increasing the rate of pronunciation of word chains and utterances from slow to faster;
3. Transitioning from memorising word chains to memorising word combinations, sentences, and texts;
4. Moving from memorising sentences with simple syntactic structure to sentences with complex structure;
5. Transitioning from memorising elements from one thematic area to memorising elements combined from different areas;
6. Moving from memorization tasks to memorization, reproduction, and translation tasks.

An experimental study was conducted to measure memory capacity at the beginning of the interpreting course and at the end of the first semester in two groups of MGIMO students: those studying under a traditional programme without exercises and those

studying under a special programme with sequential performance of such exercises. The analysis of the obtained results provides foundation to assert that, unlike traditional training programmes, the inclusion of special exercises for the development of short-term memory in the interpreting course and their consecutive performance throughout the course contributes to an increase in memory capacity and to a decrease in the number of omissions and omissions of information elements of the audio text, additions of missing information elements, substitutions of heard information elements, and other errors.

Thus, it can be said that tasks for training working memory are necessary at the initial stage of teaching interpreting. The key is to be systematic in this area: At least 20 minutes should be allocated for each lesson because memory development requires time, effort, and constant work. Large memory capacity that helps interpreters ensure the accuracy and quality of translation in various situations. It is advisable to practice memory training not only directly in translation classes but also in foreign language classes in the first and second years of study so that students have the necessary competencies before they begin their translation training.

#### REFERENCES

- Alexeeva, I. S. (2001). *Professional'nyi trening perevodchika* (Professional training of a translator). St. Petersburg: Soyuz. ISBN 5-94033-040-1.
- Alexeeva, T. D. (2019). (O roli pamyati pri ustnom perevode (On the role of memory in interpreting). *Baltic Humanities Journal*, Vol. 8, 1(26), 17-20. DOI 10.26140/bgz3-2019-0801-0002.
- Alekseeva, T. D. (1991). *Funktsionirovanie mekhanizmov pamyati pri ovladenii ustnym perevodom* (Functioning of memory mechanisms in mastering oral translation). *Methodology of teaching foreign languages in the system of continuous education*. Minsk: Vyshaya Shkola, 67-70.
- Atkinson, R. (1980). *Chelovecheskaya pamyat' i protsess obucheniya* (Human memory and the learning process). Moscow: Progress.
- Daro, V. (1997). Experimental studies on memory in conference interpretation. *Meta*, 42 (4), 622–628. DOI <https://doi.org/10.7202/002484ar>.
- Dong, Y. & Cai, R. (2015). Working memory in interpreting: a commentary on theoretical models. *Working Memory in Second Language Acquisition and Processing*. Bristol: Multilingual Matters, 63-81. DOI 10.21832/9781783093595-008.
- Emelyanova, Y. (2024). The role of L2 translation activities in translation-oriented foreign language teaching: a student's perspective. *Journal of teaching English for specific and academic purposes*, 12 (1), 191-204. DOI 10.22190/JTESAP230917016E.
- Fomina, E. I., Galich, T. S. & Anastasova, E. V. (2023). Sozdanie banka individual'nykh mnemotekhnik pri obuchenii ustnomu posledovatel'nomu perevodu (Creating a bank of individual mnemotechnics in teaching oral consecutive translation). *Modern Science: actual problems of theory and practice. Series: Humanities*, 6-1, 106-112. DOI 10.37882/2223-2982.2023.6.32.
- Stanojević Gocić M. P., Vujnović S. N. & Ratković Stevović J. R. (2023). Role of metacognition in EAP vocabulary development: cross-sectional study. *Journal of teaching English for specific and academic purposes*, 11 (3), 607-620. DOI 10.22190/JTESAP230612047S.
- Golenko, M. D. (2022). Tekhnologiya 'ekho-povtor' kak sposob sovershenstvovaniya lingvisticheskoy kompetentsii studentov yazykovogo vuza (The 'shadowing' technique as a method of linguistic competence development at a faculty of foreign languages). *Modern Science: Actual Problems of Theory and Practice. Series: Humanities*, 2, 40-44. DOI 10.37882/2223-2982.2022.02.07.
- Hambrick, D. Z. & Engle, R. W. (2002). Effects of domain knowledge, working memory capacity, and age on cognitive performance: An investigation of the knowledge-is-power hypothesis. *Cognitive Psychology*, 44, 339-387. DOI 10.1006/cogp.2001.0769.
- Heuven, V. J. van. & Yenkimaleki, M. (2016). The effect of memory training on interpretation performance. *International Journal Of English Language, Literature And Translation Studies*, 3(3), 79-86.
- Jiang, H. & Farquharson, K. (2018). Are Working Memory And Behavioral Attention Equally Important For Both Reading And Listening Comprehension? A Developmental Comparison. *Language and Reading Research Consortium*, 31, 1449–1477. DOI 10.1007/s11145-018-9840-y.
- Kozelecky, Y. (1979). *Psikhologicheskaya teoriya resheniy* (Psychological theory of decisions). Moscow: Progress.

- Lee, M. (2011). Working Memory Performance of Expert and Novice Interpreters. *Journal of Universal Language*, 12, 95-110. DOI10.22425/jul.2011.12.1.95.
- McNamara, D. & Scott, J. (2001). Working memory capacity and strategy use. *Memory & cognition*, 29, 10-17. DOI 10.3758/BF03195736.
- Miller, G. F. (1956). The Magic Number Seven Plus or Minus Two. *The Psychological Review*, 63, 81-97. DOI 10.1037/0033-295x.101.2.343.
- Osiyanova, O. M. & Demina, V. D. (2020). Didakticheskiy potentsial mnemotekhniki v lingvisticheskom obrazovanii studentov (Didactic potential of mnemotechnics in linguistic education of students). *Vestnik of Orenburg State University*, 3(226), 44-51. DOI 10.25198/1814-6457-226-44.
- Prins, P. J. M., DAVIS, S., Ponsioen, A., Ten Brink, E. & Van Der Oort, S. (2011). Does computerized working memory training with game elements enhance motivation and training efficacy in children with ADHD? *Cyber psychology, Behavior and Social Networking*, 14, 115-122. DOI 10.1089/cyber.2009.0206.
- Sacks-Zimmerman, A. L. & Lerma, V. C. (2018). Mnemonic Techniques. *Encyclopedia of Clinical Neuropsychology*. Cham: Springer, 2246-2250. DOI 10.1007/978-3-319-57111-9\_1095.
- Selezneva, A. I. (2023). Razvitie pamyati na nachal'nom etape obucheniya studentov-perevodchikov (Memory development at the initial stage of training of students-translators). *Vestnik of Moscow University. Series 22. theory of translation*, 4, 145-158. DOI 10.55959/MSU2074-6636-22-2023-16-4-145-15.
- Serova, T. S. (2001). *Psikhologiya perevoda kak slozhnogo vida inoyazychnoy rechevoy deyatel'nosti* (Psychology of translation as a complex type of foreign language speech activity). Perm: Perm State Technical University. ISBN 5-88151-312-6.
- Soanes, C., Stevenson, A. & Hawker, S. (2006). *Concise Oxford English Dictionary*. Oxford: Oxford University Press. ISBN 0199296340, 9780199296347.
- Sumarsih, S. (2017). The Impact of Shadowing Technique on Tertiary EFL Learners' Listening Skill Achievements. *International Journal of English Linguistics*, 7(5), 184-189. DOI 10.5539/ijel.v7n5p184.
- World Translation Center. (2022). <https://www.worldtranslationcenter.com/blog-posts/the-longest-german-word>.
- Zahorák, A. (2021). Formovanie professional'noy perevodcheskoy kompetentsii v ramkakh distsipliny 'Osnovy ustnogo perevoda po russkomu yazyku' v slovatskom vuze (Formation of professional interpreter's competence in the context of the course 'The basis of interpretation of the Russian language' in the Slovak university). *Izvestiya Volgogradskogo gosudarstvennogo pedagogicheskogo universiteta*, 2(155), 93-98.
- Zefirov, T. L. (2015). *Fiziologicheskie osnovy pamyati. Razvitie pamyati u detej i podrostkov* (The physiological basis of memory. Memory development in childhood and adolescence). Kazan: KFU. [https://kpfu.ru/staff\\_files/F1046530786/Posobie\\_PAMYaT.pdf](https://kpfu.ru/staff_files/F1046530786/Posobie_PAMYaT.pdf).
- Zhong, W. (2001). Interpreting Training: Models and Contents and Methodology. *China Translators' Journal*, 19, 34-40.