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## GRAMMATICAL INTERFERENCE IN THE FIRST AND SECOND FOREIGN LANGUAGE: A RATIONAL APPROACH<sup>1</sup>

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**Abstract.** The article presents a methodology for overcoming grammatical interference in the context of learning multiple languages. This methodology is based on a rational approach and involves a comprehensive system combining learning content, principles, methods, techniques, tools, technologies, and diagnostic measures to achieve optimal results while minimizing effort. The proposed model follows an algorithm with key stages: identifying grammatical phenomena, analyzing their similarities and differences across languages, predicting difficulties, interpreting grammatical functions, systematizing knowledge, applying grammar in communication, and evaluating the effectiveness of learning outcomes. These tools are supplemented with a system of exercises and real-life communication tasks to address common and distinctive grammatical challenges.

Experimental testing demonstrated that students significantly improved their practical mastery of German grammar. The study highlights the importance of psychological and pedagogical conditions, including the sequence of learning stages, rationalization tools, and real-life tasks, to support the learning process.

**Key words:** grammatical interference, rational approach, typological features, learning algorithm, comparative grammar tables, real-life communication, second foreign language.

**Introduction.** In modern society, the problem of interethnic and intercultural relations is becoming increasingly important. Contacts between cultures are driven by the growth of economic, political, scientific, and social ties, as well as the development of information and technology, which requires the knowledge of two or more foreign languages. With the help of linguistic and cultural competences, an individual is involved in ethnic, national, world cultures, social experience, spiritual and value heritage. Expansion of linguistic competences is a condition for successful socialisation in a multicultural environment.

In the context of learning multiple languages, the problem of interference arises, which manifests itself at all levels of language proficiency. One of the types of interference is grammatical interference, which requires the search for new approaches that can provide new effective ways to obtain more productive results in the context of learning multiple languages.

The rational approach, which involves the desire to minimise costs to achieve the most effective results, provides ample opportunities for intensifying this process. This approach is especially appropriate in the context of overcoming grammatical interference, which requires the development of a special methodological system. The rational approach allows to ensure the most appropriate organisation of learning activities of foreign language learners, which improves the quality of teaching both foreign languages and achieves higher results with the least time expenditure. However, the practice of teaching a foreign language at universities in the context of learning several foreign languages shows that this approach is not properly applied, which leads to complications in the educational process.

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All the above factors determine the relevance of our study aimed at solving the problem of overcoming grammatical interference using a rational approach in the process of learning English and German. The study of the conditions and factors of implementation of the rational approach will allow overcoming grammatical difficulties based on comparative and contrastive analysis in the context of learning several foreign languages.

**Main part.** At present, there is a certain scientific basis for considering the problem of overcoming grammatical interference when learning several languages. A comprehensive analysis of the problem in our study was facilitated by:

– works on various aspects of interference in the process of learning multiple languages (Juhasz, 1969: 195-198; Karim, Nassaji, 2013: 117-134; Kulchytska, 2010: 241-245; Shablii, 2004: 371-375; Valihura, 2009: 104-110 etc.);

– works that reflect the specifics of the methodology of teaching a second foreign language (Bausch, 1995: 445-451; Christ, 1994: 72-78; David, 1991; Ervin, Osgood, 1954; Ervin, Osgood, 1965; Harrison 1973, Nikolaieva, 2002, Sinha, Banejee, Sinha, Shastri, 2009: 117-122; Swan, Smith, 2002 etc.);

– research on overcoming grammatical interference in the process of learning a foreign language (Huber, 1981: 57-76; Köhler 1975; Myskiv 2014: 101-103 etc.);

– scientific publications related to the consideration of psychological patterns of interaction in the process of foreign language communication (Grosjean 1982; Hamers, Blane 1989; Weinreich 1977 etc.).

The object of our study is the process of teaching students the grammatical side of language in the context of learning English and German based on the application of a rational approach. The subject of the study is the methodology of overcoming grammatical interference based on the rational approach in the context of learning English and German. The purpose of the study is to develop the theoretical foundations of the methodology for overcoming grammatical interference based on the application of a rational approach in the context of learning English and German.

The hypothesis of the study is that the methodology of overcoming grammatical interference based on the rational approach in the context of learning English and German will be effective if there is:

1) a methodological model of overcoming grammatical interference based on the application of a rational approach when students learn several foreign languages, which will cover the purpose, tasks, content, principles, methods, techniques, technologies, means, conditions and diagnostic tools, learning outcomes and will be based on the consideration of common and differential features of the grammatical systems of the languages being studied;

2) special teaching and learning materials (a system of tasks to overcome typical grammatical difficulties in learning German and English, comparative grammar tables and reference grammar tables), which will help to form a single cognitive base;

3) application of a special algorithm, which includes the following stages: awareness and identification of a grammatical phenomenon; analysis of common and differential features of a grammatical phenomenon in foreign languages; prediction of possible grammatical difficulties; interpretation of the function of a grammatical phenomenon in the languages being studied; systematisation and generalisation of the experience of the studied grammatical phenomenon; use of the studied grammatical phenomenon in situations of real communication; re-checking the effectiveness of the use of the studied grammatical phenomenon to solve the set problems;

4) implementation of a set of methodological conditions: adherence to a clear sequence of tasks in accordance with the stages of the algorithm for overcoming grammatical interference in the process of learning several languages; application of a system of rationalisation tools (comparative grammar tables and reference grammar tables) aimed at forming an orientation basis for learning a second foreign language in the context of learning a native language and a first foreign language.

The aim, object, subject and hypothesis led to the following research objectives:

- 1) to define the essence and content of the concept of 'grammatical interference' on the basis of the application of a rational approach in the study of several languages by university students;
- 2) to develop a model for overcoming grammatical interference and prepare appropriate teaching and methodological support based on the rational approach;
- 3) to determine the conditions that ensure the effective implementation of the model of overcoming grammatical interference based on the rational approach.

**Material and methods of research.** In the process of solving the tasks, the following research methods were used: analysis of scientific literature on foreign language teaching methods, psychology, theoretical and practical grammar of Ukrainian, English and German, typology of the languages under study; comparative and contrastive analysis of grammatical systems of the languages under study; questionnaire survey of students to determine their attitude to the developed methodology in the context of learning several languages; experimental training; methods of mathematical statistics in data processing and interpretation. The methodological guideline of the study is pedagogical approaches (rational, competence-based and communicative-cognitive) and linguistic approaches (textual, systemic and structural).

**Results and their discussion.** Interference (negative influence, negative transfer) is the replacement of the rule system of the language being learnt with another one built under the influence of the rule system of the mother tongue or the language learnt earlier (Bußmann, 1977: 213; Weinreich, 1976: 15). Studying the phenomenon of interference, O.O. Selivanova notes: 'Interference is a deviation from the standards of the native language, a speech error. Interference can cover all levels of language and can occur when an individual learns a non-native language or when there are long-term language contacts' (Selivanova, 2008: 211). Negative transfer (interference) occurs when one of the contacting languages is more familiar to the individual. After switching to the system of another language, the familiar grammatical, lexical and phonetic models continue to operate in the mind. The appearance of this or that type of interference, the influence of the native or first foreign language on the studied language has its own patterns, although their effect is not absolute, but probable.

Interference arising from the negative influence of the mother tongue and the first foreign language on the second foreign language covers all linguistic levels of the language. According to Coseriu (2002), interference can include: 1) deviations at the level of the language system; 2) deviations at the level of the language norm; 3) preference for certain foreign language features; 4) avoidance of certain foreign language features; 5) correct foreign language realisation at the level of the language system; 6) correct foreign language realisation at the level of the language norm.

F. Köhler (1975) offers another typology of interference errors: 1) replacement of a grammatical or lexical unit of the L1 language with an inappropriate unit in the L2 language; 2) intersection of L1 and L2 units, i.e. a grammatical or lexical unit of the L1 language is partially replaced by other elements in the L2; 3) divergence of L1 and L2 units, i.e. one unit of the L1 language corresponds to two or more units in the L2.

From the above classifications, it follows that the process of overcoming interference consists in analysing the relationship of structures and structural elements of several languages, their mutual influence, interaction and interpenetration to master the grammatical and lexical side of the language being studied. The peculiarity of the methodology of teaching a second foreign language is not the prevention of interference, but the need to ensure positive transfer.

By grammatical interference we mean a conflict process of interaction between language mechanisms caused by differences in the grammatical structure of the contacting languages and manifested in foreign language speech as a deviation from the grammatical regularities of a foreign language under the influence of the norms of the first and second foreign languages. In grammar, the direction of transfer depends on the level of formation of the grammatical structure. The deeper the structure is

in the linguistic consciousness, the greater is the influence of the native language. Thus, when studying predicative categories (tense, mood, and species), the source of interference is almost always Ukrainian as a mother tongue. At the superficial level of thought formulation (e.g. syntactic categories), transfer can be made from the first or second language to the third. In this regard, there are contradictions between the need to overcome various types of interference (including grammatical) in the shortest possible time in the process of learning several foreign languages (English and German) and the insufficient development of relevant methodological provisions. The development of the latter requires consideration of the main linguistic aspects of overcoming grammatical interference, which consist in the need to identify grammatical typological difficulties to create an indicative basis for the simultaneous acquisition of three languages – Ukrainian, English and German.

The linguistic aspect of the process of learning several languages is to analyse the correlation of structures and structural elements of several languages, their mutual influence, interaction and interpenetration at different structural levels of languages. The analysis of studies on the typology of learning Ukrainian, English and German shows that grammatical interference is manifested at the level of morphological and syntactic interference. The proposed table reflects the specifics of overcoming interference in the main cases of expressing the future tense when learning German and English by Ukrainian-speaking learners and includes possible typological difficulties typical for the process of learning this phenomenon (see Table 1).

Table 1

**Grammatical comparison and contrast table on the topic of expressing the future tense  
(‘+’ positive transfer, ‘-’ interference)**

<b>Speech function</b>	<b>Ukrainian</b>	<b>English</b>	<b>German</b>
1. Expression of action in the future	<i>Поїзд прибуває завтра о 7.00 (+)</i>	<i>The train comes at 7.00 tomorrow. (+)</i>	<i>Der Zug kommt morgen um 7.00 an. (+)</i>
2. Expression of a promise	<i>Я поверну тобі гроші завтра. (+)</i>	<i>I shall return your money to you tomorrow. (+)</i>	<i>Ich gebe dir das Geld morgen zurück. (-)</i>
3. Offer of help at the moment of conversation	<i>– Я не маю грошей. – Я тобі дам грошей (+)</i>	<i>- I have no money. - I shall give you money. (+)</i>	<i>- Ich habe kein Geld. – Ich gebe dir das Geld. (-)</i>
4. Expressing an intention to do sth. (with a high degree of certainty)	<i>Я збираюсь купити новий будинок. (+)</i>	<i>I am going to buy a house. (+)</i>	<i>Ich habe vor, mir ein Haus zu kaufen. (+)</i>
5. Expressing an assumption about an event in the future (with a low degree of probability)	<i>Я думаю, погода буде завтра хорошою. (+)</i>	<i>I think, the weather will be fine tomorrow. (+)</i>	<i>Ich glaube, das Wetter wird morgen gut sein. (+)</i>
6. Keeping records in a diary, daily routine	<i>О 5 годині я граю в теніс, о 7 я зустрічаюсь з другом. (+)</i>	<i>I am playing tennis at 5 o'clock, I am meeting with my friend at 7 o'clock. (-)</i>	<i>Um 5 Uhr spiele ich Tennis, um 7 treffe ich mich mit meinem Freund. (+)</i>
7. Expressing of planned actions of people that will definitely come true	<i>Мій брат приїжджає завтра, він уже купив квиток на поїзд. (+)</i>	<i>My brother is coming tomorrow; he has already bought a train ticket. (-)</i>	<i>Mein Bruder kommt morgen, er hat schon eine Fahrkarte für den Zug gekauft. (+)</i>
8. An expression of of long-lasting action in the future	<i>Я завтра буду здавати іспит з 9 до 12. (+)</i>	<i>I will be passing my exam from 9 to 12 o'clock tomorrow (-)</i>	<i>Ich werde morgen die Prüfung von 9 bis 12 Uhr ablegen. (+)</i>

Continuation of table 1

9. Expression of completeness of an action in the future	<i>Я завтра складу іспит до 12 години. (-)</i>	<i>I will have passed my exam by 12 o'clock tomorrow. (+)</i>	<i>Morgen werde ich die Prüfung gegen 12 Uhr abgelegt haben. (+)</i>
10. Expression of duration of an action in the future	<i>Я буду складати іспит протягом 2-х годин завтра. (+)</i>	<i>I will have been passing my exam for 2 hours tomorrow. (-)</i>	<i>Morgen werde ich die Prüfung innerhalb von 2 Stunden ablegen. (+)</i>

The methodology for overcoming grammatical interference should be based on the application of a rational approach, which involves the implementation of a comprehensive methodological system that includes an optimal combination of learning content, principles, methods, techniques, technologies, optimisation tools, learning conditions and diagnostic tools in order to achieve maximum methodological results at minimum cost in the process of learning several languages. In other words, a rational approach implies a desire to minimise costs in order to achieve maximum effect in learning activities. In the process of overcoming grammatical interference in the learning of German and English by Ukrainian-speaking students, the following aspects should be taken into account:

1) the most typical cases of grammatical interference and positive transfer, which are typical for the process of acquiring German on the basis of first English in the course of performing communicative and cognitive activities in a foreign language;

2) creation of a common cognitive base for the languages being studied;

3) common and differential features of the grammatical systems of the languages being studied;

4) selection of optimal rational strategies (planning, identification, forecasting, analysis, differentiation, interpretation, systematisation, generalisation, simplification, detailing, transfer, re-checking, etc.) in the process of overcoming grammatical interference;

5) patterns of real-life communication in the process of teaching the grammatical side, so that a foreign language acts as a means of social interaction;

6) creation of a dynamic educational environment taking into account the individual psychological characteristics of students, which involves choosing the optimal learning system with a focus on the individual characteristics of the development of mental functions of each student.

The most important condition for overcoming grammatical interference is the development of a set of exercises aimed at creating a unified cognitive base founded on comparative and contrastive learning of several languages. This set of exercises should be built with due regard to the grammatical difficulties caused by the presence of divergent grammatical phenomena in Ukrainian, English and German. It should include the following components of the process of teaching the grammatical side of language in English and German: ways of presenting grammatical phenomena, organisation of grammatical material, ways of training grammatical material, grammatical comments, comparative and contrastive grammar tables, reference grammar tables, rules, reference books, main types of grammatical exercises (reproductive, reproductive-productive, productive creative). The stages of overcoming grammatical interference when learning several languages are based on a system of exercises, the specificity of which is determined by the degree of grammatical skills.

There are three stages of overcoming grammatical interference. At the initial stage, the focus is on the use of grammatical comparatives in Ukrainian, German and English. The main role will be played by reproductive exercises, namely: identification exercises, grounding exercises, transformational exercises, exercises on construction, expansion of the grammatical structure, question and answer exercises, imitation and reproductive exercises, etc.

At the intermediate stage, the leading role is given to the use of supports in Ukrainian, German and English, but the set of exercises changes from reproductive to reproductive-productive exercises (based on a given grammatical material or a similar situation), training substitution exercises, training transformation exercises, training question and answer exercises, role-playing situational exercises, training reproductive exercises, training descriptive exercises, game exercises aimed at activating the grammatical material being studied.

The final polylingual stage does not involve the use of supports. The main role is played by productive creative exercises: exercises for solving problem situations, monological descriptive exercises, dialogical descriptive exercises, creative exercises for introducing new elements into the utterance, composition and project exercises.

Let us give an example of how grammatical phenomena are mastered through the implementation of a rational approach when studying the topic 'Word Order in German Compound Sentences'. Let us consider a set of generalised landmark features, which in a German compound sentence in postposition are as follows: 1) the subject, expressed by a noun or pronoun, comes after the subordinating conjunction in the complex sentence; 2) the auxiliary verb comes last.

After identifying the characteristic features of the landmarks, a grammatical support should be provided, which contributes to a clearer and more complete understanding of the structural features of the German compound sentence. The use of visual aids contributes to better memorisation of the word order in German compound sentences. At this stage, the students perform learning activities based on the use of comparison and contrast tables that demonstrate the peculiarities of word order in a complex sentence in German. Comparative and contrastive tables give a clear picture of the syntactic features of the German language, which allows the student to draw appropriate conclusions and generalisations on his/her own (see Table 2).

Table 2

**Comparative table 'Word order in a complex subordinate clause in German, English and Ukrainian'**

Language	Main sentence	Conjunction	Subordinate clause
German	Anna sagt,	dass	<i>sie ihre Freundin am Morgen <b>besuchen will</b>.</i>
English	Ann says	that	<i>she <b>wants to visit</b> her friend in the morning.</i>

You can start with subordinate complementary clauses with the conjunction *dass*. The teacher should emphasise that *dass* is only possible in certain types of sentences, including:

1) narrative sentences in indirect speech that tell what someone has said, heard or read: *Anna sagt, dass sie das Studium mag;*

2) statements with verbs that denote perceptions, mental activity, emotions, knowledge and desires: *Anna glaubt, dass ihre Eltern sie nicht verstehen;*

3) expressions with an adjective + *sein*: *Anna ist sicher, dass sie diesen Sommer nach Deutschland fährt.*

4) impersonal expressions: *Es ist wichtig, dass Anna einen Arbeitsplatz findet.*

The peculiarities of implementing a rational approach at the preparatory stage in the process of overcoming grammatical interference when learning several languages can be demonstrated by the following example: Form compound sentences based on the given vocabulary (see Table 3).

The next stage is functional and practical, involving reproductive-productive exercises. This stage involves training coincident and differential grammatical phenomena in German, English and Ukrainian. The teacher organises the teaching of the grammatical side of the language based on the use of monologue, dialogue and polylogue texts, the implementation of which is aimed at prevent-

ing and overcoming grammatical errors caused by interference. The use of comments and supports contributes to the creation of a cognitive base, consolidation of the studied grammatical phenomena and their transfer to the functional level. At the functional and practical stage, typical situations are used that require students to use the studied grammatical phenomena in an ever-changing communication context, which leads to the activation of the studied grammatical phenomena and facilitates the release of the grammatical phenomenon into oral speech.

Table 3

**Example of a reproductive exercise on word order in a German subordinate clause**

Subject	Predicate	Conjunction	Subject	Secondary members	Predicate
Wir, ich, du, er, sie, es, mein Freund ...	sehen, wissen [nicht], hoffen, erwarten; sicher sein; wichtig sein ...	dass	viele Studenten, dieser Student, diese Studentin, meine Freundin, du, er ...	in der Pause, in der Mensa, im Unterricht, auf dem Sofa, bei schlechtem Wetter, ins Kino ...	machen, lesen, essen, gehen, wiederholen ...

Let's take a closer look at the exercises used at the functional and practical stage. These exercises are the simplest type of situational exercises, where students have to complete a description of a situation (or expand on a situation) using the grammatical phenomena they have learnt:

German: *Lesen Sie den Dialog und ergänzen Sie ihn. Gebrauchen Sie dabei Nebensätze.*

– *Was machst du heute nachmittag?*

– *Ich hoffe, dass ich ins Kino gehe / Ich bin sicher, dass ich gleich nach dem Unterricht Hause gehe / Ich glaube, dass ich ein Buch lese.*

When doing this activity, you should draw an analogy with the corresponding word order in English, drawing students' attention to the free word order in English.

English: *Read the dialog und complete it. Use Future simple.*

*What are you doing this afternoon?*

– *I hope I'm going to the movies / I'm sure I'll go home right after class / I think that I'll read a book.*

Problem-based situational exercises are exercises whose exposition contains a task. Analysing the problem, students describe in detail the ways of solving this problem using the grammatical material studied.

German: *Äußern Sie Ihre Gedanken zum Thema, wie man Deutsch lernen soll.*

*Ich finde es gut, dass wir deutsches Fernsehen schauen.*

*Es ist wichtig, dass man jeden Tag Deutsch lernt.*

*Ich finde es richtig, dass wir neue Wörter immer im Kontext lernen.*

*Ich weiß, dass ich jeden Tag mindestens 10 Minuten Deutsch üben soll.*

*Es ist gut, dass man viele neue Medien beim Deutschunterricht benutzt.*

*Es ist wichtig, dass man keine fehlerhaften Strukturen lernt.*

When doing this exercise, you should draw an analogy with the peculiarities of using infinitive constructions in English.

English: *Give your opinion about learning German.*

*I think it's good that we watch German television.*

*It's important to learn German every day*

*I think it's right that we always learn new words in context.*

*I know that I should practise German for at least 10 minutes every day.*

*It's good that you use a lot of new media in German lessons.*

*It's important not to learn incorrect structures.*

The final communicative stage involves productive and creative exercises. This type of exercises involves the use and activation of the learnt grammatical phenomena within a certain situation on a grammatical topic. These exercises involve unprepared, spontaneous speech, so students perform the exercises immediately after receiving the task, and it is not recommended to use comparative grammar tables at this stage.

*Übung 1. Erzählen Sie Ihrem Freund aus Deutschland, wie das Erlernen der beiden Fremdsprachen (Deutsch und Englisch) sein Wissen erweitern konnte.*

*Übung 2. Interviewen Sie Ihre Freundin, wie sie Englisch gelernt hat.*

It is most efficient to conduct interviews in pairs, with one of the pairs presenting the results of their work to the whole group.

*Übung 1. Berichten Sie über Ihren ersten Tag an der Universität.*

*Übung 2. Erzählen Sie über die Schwierigkeiten beim Erlernen der deutschen Sprache.*

One of the most important conditions for communicative teaching of a foreign language is the creation of a favourable psychological atmosphere in the classroom that will stimulate students to engage in cognitive and communicative activities in a foreign language. In the process of interaction in a foreign language, students should satisfy their personal needs and interests.

The priority condition for the effective overcoming of grammatical interference is the maximum approximation of the educational process to real communication, during which the solution of language and thinking tasks is constantly becoming more complex. The involvement of students in the process of solving communicative language and thinking tasks based on the studied grammatical phenomena contributes to the creation of a single cognitive base when learning several languages. In the course of performing communicative tasks in a foreign language, a step-by-step implementation of cognitive activity aimed at mastering the peculiarities of the grammar of the languages under study is carried out.

The selected minimum of grammatical material should ensure the level of communicative sufficiency, i.e. enable students to fully participate in real communication. Therefore, when including grammatical material in the content of teaching the first and second foreign languages, it is necessary to evaluate each grammatical phenomenon in terms of the reality of its appearance in natural communication situations.

The priority condition for the implementation of the proposed methodological system is the use of an appropriate algorithm, which includes the following stages: awareness and identification of the grammatical phenomenon; analysis of common and differential features of the grammatical phenomenon in both foreign languages; prediction of possible grammatical difficulties; interpretation of the functions of the grammatical phenomenon in languages; systematisation and generalisation of the experience of the studied grammatical phenomenon; use of the studied grammatical phenomenon in real-life communication situations; re-checking the effectiveness of the use of the learnt grammatical phenomenon to solve the set communicative tasks.

In order to test the effectiveness of the proposed methodology for overcoming grammatical interference based on the application of a rational approach to learning multiple languages, an experimental training was organised with the participation of 2nd year students of the Faculty of Foreign Languages of Khmelnytsky National University who study English as a first foreign language and German as a second foreign language. The experimental training was aimed at solving the following tasks:

- to analyse and clarify the possibilities of applying a rational approach in the process of overcoming grammatical interference in the study of several languages at a university,
- to experimentally confirm the effectiveness of the proposed model of overcoming grammatical interference in the process of learning several languages based on the application of a rational approach and the corresponding algorithm for its implementation,



- to test the effectiveness of the developed set of exercises aimed at overcoming grammatical interference in the process of learning several languages based on the application of a rational approach,
- to test the methodological conditions necessary for the effective implementation of the methodology for overcoming grammatical interference in the process of learning several languages based on the application of a rational approach.

**I. The ascertaining stage** (September 2024):

At the ascertaining stage, the experimental work was aimed at solving the following tasks: 1) a multidimensional analysis of theoretical and practical experience in solving the problem; 2) conducting control sections based on the use of traditional teaching and learning materials; 3) developing recommendations for possible improvements to the existing system of teaching several foreign languages in order to overcome grammatical interference;

**II. Main Stage** (October-November 2024), whose tasks were:

- the implementation of new educational and methodological resources aimed at overcoming grammatical interference and their adjustment to improve the educational process, as well as testing the system of tasks, including grammatical contrastive-comparative tables and grammatical reference tables;
- testing the set of conditions necessary for the successful implementation of the proposed teaching model.

**III. Final Stage** (December 2024), whose tasks were:

- summarizing and systematizing the results of the research and experimental work;
- formalizing the theoretical and practical outcomes of the study.

An essential condition for conducting the research and experimental work was the development of criteria and indicators that determine the effectiveness and dynamics of overcoming grammatical interference in the process of learning multiple languages based on the application of a rational approach. The following key criteria and indicators of the effectiveness of the methodology for overcoming grammatical interference in the process of learning multiple languages using a rational approach were identified:

1. Motivational criterion with the following indicators: development of motivation for learning multiple foreign languages; motivation for learning a second foreign language.
2. Theoretical-content criterion (knowledge of general grammatical phenomena characteristic of the grammatical systems of German and English; knowledge of specific grammatical phenomena characteristic of the grammatical systems of German and English).
3. Operational-activity criterion (mastery of the operational-functional components of the grammatical phenomena under study; ability to apply grammatical phenomena in real communication situations).

To determine the motivational criterion, a survey was conducted. The questionnaire included the following task: *Mark the reasons that motivate you to learn multiple foreign languages.*

1. Knowledge of multiple foreign languages increases my chances of finding a job with a decent salary.
2. I believe that every modern person should know multiple foreign languages.
3. Knowledge of multiple foreign languages enhances my social status.
4. Knowledge of multiple foreign languages allows me to communicate with people from different countries in a foreign language (corresponding, listening to songs in a foreign language, etc.).
5. I enjoy learning about how different languages are structured (their similarities and differences).
6. I enjoy learning about the culture of the countries whose languages I study.
7. I want to know two or more foreign languages so that I can connect my future profession with foreign languages.
8. Knowledge of multiple foreign languages expands my opportunities for socialization.

9. Knowledge of multiple foreign languages will ensure my financial well-being.

10. Knowledge of foreign languages will help improve the educational level of my family (e.g., my siblings).

For each positive response, the respondent received 1 point.

To determine the theoretical-content criterion, students were presented with the table “Key Similarities and Differences in the Grammar of German and English.” To assess the operational-activity criterion, students were required to complete a grammar test and explain in German the formation, functioning, and usage of the most significant tense forms in the German language such as *Präsens*, *Präteritum*, *Perfekt*, and *Futurum I*. During the tasks aimed at assessing the formation of the operational-functional component of the studied grammatical phenomena, the following most frequent types of grammatical errors were identified among the students: errors in the use of tense forms, violations of word order in subordinate clauses, use of double negation, errors in the use of prepositions, mistakes in the use of definite, indefinite, and zero articles, etc.

Control assessments conducted at the diagnostic stage of the research and experimental work indicate nearly identical levels of formation of the identified criteria and indicators in the control and experimental groups (see Table 4).

Table 4

**Results of the Formation of Indicators for Overcoming Grammatical Interference Among Students at the Diagnostic / Final Stages of the Experiment**

Criteria and Indicators for Overcoming Grammatical Interference	Control Group (diagnostic → final stages)			Experimental Group (diagnostic → final stages)		
	Low	Medium	High	Low	Medium	High
<b>1. Motivational-Value Criterion</b>						
1. Motivation for learning multiple foreign languages	5 → 4 33 % → 27 %	6 → 6 40 % → 40 %	4 → 5 27 % → 33 %	5 → 3 33 % → 20 %	7 → 6 47 % → 40 %	3 → 6 20 % → 40 %
2. Motivation for learning a second foreign language	6 → 6 40 % → 40 %	5 → 5 33 % → 33 %	4 → 4 27 % → 27 %	7 → 5 47 % → 33 %	5 → 4 33 % → 27 %	3 → 6 20 % → 40 %
<b>2. Theoretical-Content Criterion</b>						
3. Knowledge of common phenomena of the grammatical systems of German and English	7 → 5 47 % → 33 %	5 → 5 33 % → 33 %	3 → 5 20 % → 33 %	7 → 2 47 % → 13 %	5 → 8 33 % → 53 %	3 → 5 20 % → 33 %
4. Knowledge of distinct phenomena of the grammatical systems of German & English	8 → 5 53 % → 33 %	5 → 6 33 % → 40 %	2 → 4 14 % → 27 %	8 → 1 53 % → 7 %	5 → 9 33 % → 60 %	2 → 5 14 % → 33 %
<b>3. Operational-Activity Criterion</b>						
5. Mastery of the operational-functional component of the grammatical phenomena under study	10 → 9 66 % → 60 %	3 → 3 20 % → 20 %	2 → 3 14 % → 20 %	11 → 3 73 % → 33 %	7 → 7 20 % → 40 %	1 → 5 7 % → 27 %
6. Ability to apply grammatical phenomena	11 → 10 73 % → 66 %	3 → 3 20 % → 20 %	1 → 2 7 % → 14 %	10 → 2 66 % → 20 %	4 → 8 27 % → 53 %	1 → 5 7 % → 27 %

The analysis of discrepancies in the obtained results involves comparing the distributions of observed values and calculating statistical correlations. In this study, the  $\chi^2$  (chi-square) test is used to determine the presence of consistencies or discrepancies between the frequency distributions of observed values (Levitsky 2012: 156). The data collected in the study were processed using a com-

puter program to create four-field tables, i.e., an alternative distribution. In this case, the degree of freedom is 1, and the critical value is  $\chi^2_{0.5} = 3.84$ .  $\chi^2$  sums exceeding 3.84 indicate that the experimental values surpass the theoretically expected ones. The  $\chi^2$  sum increases as the experimental values deviate more from the theoretical ones (Levitsky 2012: 158–159). The measure of the relationship between the obtained values was determined based on Chuprov's coefficient of contingency (K). The values of Chuprov's coefficient range from 0 to 1, and the significance of the obtained coefficient is established by the  $\chi^2$  value (Levitsky 2012: 156–160). Calculations of on the formation of indicators for overcoming grammatical interference among students at the diagnostic stage of the experiment were made separately for each criterion. The results of the calculations indicate that in both groups – control and experimental – the critical amount of  $\chi^2_{0.5} = 3.84$  is not exceeded for any of the phenomena under study. This means that the distribution of indicators in both groups is uniform. In other words: the level of motivation to learn a second foreign language, as well as the level of knowledge about common and distinctive grammatical phenomena in the systems of English and German and the ability to apply them in the control and experimental groups are approximately the same.

The results of calculations of the formation of indicators of students' overcoming grammatical interference at the final stage of the experiment are presented in Table 5. The calculations were made, as in the previous case, for each criterion separately.

Table 5

**Statistical Calculations of the Formation of Indicators for Overcoming Grammatical Interference Among Students at the Diagnostic Stage of the Experiment**

Criteria and Indicators for Overcoming Grammatical Interference	Control Group (students / %)		Experimental Group (students / %)			
	Low	Medium	Low	Medium	Low	Medium
<b>1. Motivational-Value Criterion</b>						
1. Motivation for learning multiple foreign languages		$\chi^2 = 0,11$	$\chi^2 = 0,13$		$\chi^2 = 0,48$	
2. Motivation for learning a second foreign language	$\chi^2 = 0,48$			$\chi^2 = 0,58$		
<b>2. Theoretical-Content Criterion</b>						
3. Knowledge of common phenomena of the grammatical systems			$\chi^2 = 0,09$	$\chi^2 = 4,32$ K=0,03		$\chi^2 = 0,07$
4. Knowledge of distinct phenomena of the grammatical systems		$\chi^2 = 0,15$			$\chi^2 = 4,13$ K = 0,03	
<b>3. Operational-Activity Criterion</b>						
5. Mastery of the operational-functional component of the grammatical phenomena under study	$\chi^2 = 5,00$ K = 0,04				$\chi^2 = 3,89$ K = 0,01	
6. Ability to apply grammatical phenomena	$\chi^2 = 6,40$ K = 0,05				$\chi^2 = 4,01$ K = 0,03	

The results of the calculations indicate the changes that took place in the experimental group. While the motivation to learn a second foreign language increased slightly:  $\chi^2 = 0.58$  (in the experimental group) as opposed to  $\chi^2 = 0.48$  and  $\chi^2 = 0.11$  (in the control group), the critical amount of  $\chi^2 = 3.84$  was exceeded for the theoretical and content and operational and activity criteria. Thus, the knowledge of common grammatical phenomena of German and English languages increased significantly for students with a low level of knowledge ( $\chi^2 = 4.32$ ; K = 0.03) and knowledge of specific grammatical phenomena of German and English languages for students with an intermediate level ( $\chi^2 = 4.13$ ; K = 0.03).

The indicators of the operational-activity criterion of students with low knowledge remained at the same level in the control group, and therefore differ sharply from the corresponding indicators of students

with low knowledge in the experimental group: the differences reach  $\chi^2=5.00$  at  $K=0.04$  for the mastery of the operational-functional component of grammatical phenomena and  $\chi^2=6.40$  at  $K=0.05$  for the ability to apply grammatical phenomena. This means that the increase in qualitative indicators was most significant in relation to the operational and functional criterion in the group of students with a low level of knowledge. A slightly smaller qualitative increase was observed in the group of students with an intermediate level of knowledge:  $\chi^2 = 3.89$  at  $K = 0.01$  for the mastery of the operational-functional component of grammatical phenomena and  $\chi^2 = 4.01$  at  $K = 0.03$  for the ability to apply grammatical phenomena.

The data obtained indicate that the level of motivation to learn a second foreign language has increased slightly, but the level of knowledge about common and distinctive grammatical phenomena in the systems of English and German and the ability to apply them in the experimental group has increased significantly compared to the control group.

**Conclusions.** The study allows us to draw the following conclusions:

1. The developed methodology for overcoming grammatical interference based on the application of a rational approach involves the implementation of a comprehensive methodological system that includes an optimal combination of learning content, principles, methods, techniques, technologies, optimisation tools, learning conditions and diagnostic tools in order to achieve maximum methodological results while minimising costs when learning several languages.

2. The developed model of overcoming grammatical interference should be based on the implementation of an algorithm that reflects the main stages of overcoming typological grammatical difficulties that arise in the process of interaction between the mother tongue, the first foreign language and the second foreign language. Such an algorithm includes the following stages: awareness and identification of the grammatical phenomenon; analysis of differential and common features of the grammatical phenomenon in the languages under study; prediction of possible grammatical difficulties; interpretation of the function of the grammatical phenomenon in the languages under study; systematisation and generalisation of the experience of the studied grammatical phenomenon; use of the studied grammatical phenomenon in real-life communication situations; re-checking the effectiveness of using the studied grammatical phenomenon to solve the set communicative tasks.

3. The proposed educational and methodological support, tested by experimental means, is aimed at overcoming grammatical interference in the context of learning several languages, is based on the consideration of common and distinctive features in the grammatical systems of Ukrainian, first foreign and second foreign languages and includes not only a system of exercises, but also a set of rationalisation tools (comparative grammar tables and reference grammar tables) reflecting the main typological features of the languages under study.

The main psychological and pedagogical conditions necessary to overcome grammatical interference in the process of learning several languages based on the implementation of a rational approach include: observance of a clear sequence of stages of the relevant algorithm; use of a system of tasks and means of rationalisation (comparative grammar tables and reference grammar tables) aimed at forming an orientation basis for learning a second foreign language in the context of learning Ukrainian and the first foreign language; involvement of students in real-life situations

The experiment has shown that most students have achieved quite high results in the practical mastery of the grammatical side of oral German. At the final stage of the experimental work, a cross-section was conducted to determine the formation of criteria and indicators that ensure the effectiveness of the proposed methodology based on the system of methods of a rational approach in the process of learning German as a second language on the basis of English by students whose mother tongue is Ukrainian.

Our study examines only some aspects of this problem. We consider it important to further develop in the following areas: studying the peculiarities of implementing various rationalisation techniques in the process of overcoming grammatical interference; in-depth study of the possibilities of applying a rational approach in the process of overcoming various types of interference.

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