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INTRODUCTION

Dear colleagues, authors and readers of the Scientific Journal of Polonia University (PNAP – Periodyk Naukowy Akademii Polonijnej)!

Congratulation on the release of a new PNAP 59 (4) (2023)!

In this issue we are presenting scientific articles, which deal with urgent problems of language, culture, communication, and education, as well as innovations and sociology, issues on health and environment development, technology, creativity, implementation.

Authors in the sphere of innovation, work, society elicit different globalization processes, namely, the Internet as an ideological state apparatus, provide comparative study of interpersonal interaction of male and female technical profile students, management accounting tools transformation for the needs of enterprise managers under martial law in Ukraine, define the role of public policy in ensuring public health, Covid-19 pandemics impact on Ukrainian students' perception of the EU, European integration and solidarity, the third world congress of free Ukrainians as a component of struggle for the rights of the Ukrainian nation.

On the other hand, in the realm of technology, creativity, and implementation much attention has been paid to the intersections and interchanges of the urban street network using transport modeling.

The scientific issue also contains interesting researches in health and medicine such as hygienic aspects of architectural and planning solutions for the construction of mental health facilities, dietary fiber in reducing of elevated blood lead concentration in children, ultrasound diagnostics of the liver as an effective method of controlling non-alcoholic fatty liver disease therapy in rheumatoid arthritis patients, the impact of ballroom dancing at the level of physical health of the individual.

The issues on education contain theoretical issues of the phenomenon of globalization of education, namely game technologies as a motivation factor of an inclusive educational environment, conceptual model of training bachelors of physical culture and sports for coaching activities in game sports with preschool children.

The scientific issue also contains interesting researches in language, culture, and communication that are focused on actual issues of intercultural communication, terminology, and discourse analysis.

Special attention has been paid to the investigation of term-combinations in the context of corpus-applied translation studies, historical evolution of it terminology and its further development, guardians of the communication process, their functions in the formation of the media landscape, cross-cultural musical transformation in Chinese traditions, poetical analysis of the image of Ukraine in O. Dovzhenko's film story "Ukraine on fire", the problem of overcoming language barriers by students of non-linguistic specialties.

We really appreciate all the articles that have already been sent to PNAP, and those, which are going to be submitted to our journal. We would also like to express our particular gratitude to all the members of the Editorial Board, to the reviewers, and to those who kindly accepted our proposal to work together and contribute to the creation and further development of PNAP.

Andrzej Kryński

LANGUAGE, CULTURE, COMMUNICATION

CONCEPTUAL MODEL OF TRAINING BACHELORS OF PHYSICAL CULTURE AND SPORTS FOR COACHING ACTIVITIES IN GAME SPORTS WITH PRESCHOOL CHILDREN

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Summary

The article analyzes the current state of research on the problem of training bachelors of physical culture and sports for coaching activities in game sports with children of preschool age, which confirmed the relevance and expediency of the chosen problem, its insufficient theoretical development in pedagogical theory and practice. The following structural components of the training bachelors of physical culture and sports for coaching activity in game sports with preschool children are defined and characterized: motivational-value, informational-communicative, organizational-facilitating, reflective-creative. A conceptual model has been developed, which provides for an integral continuous process of training bachelors of physical culture and sports for coaching activities in game sports with children of preschool age. The model covers four interconnected blocks: the target one, which reflects the social order of society, the goal, the task of training bachelors of physical culture and sports for coaching activities in game sports with preschool children and its components; the methodological block of the model is built according to the principles and requirements for training bachelors of physical culture and sports for coaching activities with preschool children. This block is based on methodological approaches (system, activity, competence, person-oriented, environmental, synergistic, simulation-game) and principles (the principle of integrity, the principle of structuring, the principle of conscious creative activity, the principle of professional orientation, the principle of individual self-worth, the principle of relying on subjective experience of students, the principle of partnership, the principle of complex interaction, the principle of freedom of choice, the principle of novelty); of content containing the principles, organizational and pedagogical conditions of training bachelors of physical culture and sports for coaching activity with preschool children, forms and methods used in this process; the resultant block contains components (motivational-value, informational-communicative, organizational-facilitating, reflective-creative), criteria (motivational, cognitive, activity, analytical), levels (high, sufficient, low) of training of bachelors of physical culture and sports motivation for coaching activities with preschool children. It was found that the training of bachelors of physical culture and sports for coaching activity with preschool children becomes effective thanks to the implementation of the following organizational and pedagogical conditions: promotion of the formation of bachelors of physical culture and sports motivation for coaching activities of teaching sports games of preschool children;

actualization of interdisciplinary integration and its scientific and methodological support in the process of training bachelors of physical culture and sports for coaching activities in teaching sports games of preschool children; provision of practice-oriented training of bachelors of physical culture and sports for coaching activities in teaching sports games of preschool children through the involvement of stakeholders in the educational process, the interrelationship of competence, system and personal-activity approaches.

1. Introduction

The priority tasks of the state policy are the comprehensive development of the personality, strengthening of health and the formation of a healthy lifestyle, ensuring optimal motor activity of a person, involving children and youth in physical education and sports.

The analysis of foreign literary sources and world and domestic practice show that modern team sports games are characterized by a general tendency towards earlier specialization of children – the beginning of sports games from 9–11 to 5–6 years old. As practice shows, trainers conduct educational and training sessions with children from 4 and even from 3 years old, but in most cases, they do not have enough knowledge of age characteristics and the methodology of the training process with children of this age. Coaches of sports games, as a rule, mechanically apply training methods from an older contingent, which leads to physical overload, mental exhaustion of children and the end of sports at an early age. In our opinion, at this stage of training, trainers should first of all be teachers-trainers, educators, psychologists, a friend, a child''s assistant. This is especially true for sports games.

As evidenced by the results of the analysis of scientific research on selected issues, the issue of training bachelors of physical culture and sports of the educational and professional program "physical education" for coaching activities in game sports (volleyball, basketball, handball, football) with children of preschool age remains insufficiently developed in terms of the needs of the new educational paradigm and innovative requests of society.

This leads to the need for scientific substantiation, development and experimental verification of systematic professional and pedagogical training of future teachers-trainers for coaching activity in sports games in working with preschool children. Exactly the institutions of higher education that are fully capable of ensuring a high level of training of the teacher-coach for the implementation of many of his functions in various spheres of human activity, in particular, for coaching activities in sports games in working with children of preschool age.

Updating the content of education, for its part, involves the orientation of training programs to a competence approach, which is considered by scientists as one of the important conceptual principles that determines the methodology of updating the content of education, contributes to overcoming the traditional cognitive orientations of professional education, encourages updating its content, methods and technologies, which are transformed in the competence of future teachers-coaches for coaching activities in sports games in working with preschool children.

There is a contradiction between the increased demands of society for the personality of a teacher-coach of sports games, capable of performing effective pedagogical activities with

preschool children, and insufficient attention to the study of these issues in the system of professional education.

The purpose of the article is to define and justify the conceptual model of training future teachers-coaches for coaching activity in sports games in working with preschool children.

2. Analysis of recent research and publications

This problem is one of the most relevant in many fields of science, which is covered in research and publications by both foreign and domestic scientists.

Studies of professional training of future bachelors of physical education and sports were carried out by *(Konokh, 2018: 16), (Pasichnyk, 2022: 80), (Hamidovna 2022: 123)* and others.

Considerable experience of training athletes in sports games is represented in studies *(Lysenchuk, 2020: 41) (Shykyrynska, 2022: 710) (Bohdanovskyi, 2017: 110)* and others, but this problem continues to be insufficiently researched. This leads to the need for training in institutions of higher education of future teachers-coaches for coaching activities in sports games in working with preschool children. Exactly the physical education institutions of higher education in the specialty 017 "Physical culture and sport" of the educational program "physical education" are fully capable of ensuring a high level of training of teachers-trainers for coaching activities in sports games in working with children of preschool age.

Updating the content of education, for its part, involves the orientation of training programs to a competency approach, which is considered by scientists as one of the important conceptual principles that determines the methodology of updating the content of education, contributes to overcoming the traditional cognitive orientations of professional education, encourages updating its content, methods and technologies, which are transformed into the competence of a bachelor of physical culture and sports.

In view of the above, it should be noted that the priority task of higher education institutions is to improve the content of education and the organization of the process of training teachers-trainers for further coaching activities in sports games in working with preschool children, creating conditions for the development of their pedagogical skills. Each institution of higher education, creating optimal models of theoretical and practical training of a bachelor of physical culture and sports, should pay attention to: reviewing the content of educational disciplines in order to direct their topics to the formation of the necessary professional skills, creative thinking in future teachers-trainers for further coaching activities in sports games in work with preschool children; creation of a fundamentally new methodical support that will contribute to revealing the creative potential of students; the possibility of introducing various types of educational activities into the educational process.

When building a model of training bachelors of physical culture and sports for coaching activities in game sports with children of preschool age, one should not forget about the continuous development and constant improvement of social processes in society, which are reflected in the requirements for the professional training of a specialist. That is why such a model should focus on both traditional methods of pedagogy and modern pedagogical innovations. Within the scope of our research, a modern innovation in the process of training bachelors of physical culture and sports is the creation of a model of formation of professional competence in them for coaching activities in game sports with children of preschool age. This process is a necessary component of the research, the implementation of which is aimed at the implementation by institutions of higher education of an important social order – the training of a bachelor of

physical culture and sports who is able to professionally organize coaching activities in game sports with children of preschool age in educational institutions, the result of which is the development of abilities students, preventive work on their involvement in a healthy lifestyle, support of psycho-emotional state and motor activity.

Analyzing and summarizing the results of modern scientific research, we developed a conceptual model (that is, a model that is presented by a set of concepts and connections between them that determine the semantic structure of the simulated object, process) of training a bachelor of physical culture and sports for coaching activities in games sports with children of preschool age as a system of interrelated, mutually conditioned integral elements, united by a common goal and aimed at the result – professional competence in a certain type of activity. The basis for the construction of the conceptual model was a social order for the preparation of bachelors of physical education and sports for coaching activities in game sports with children of preschool age, and the leading idea was determined that such training should have an end-to-end character, take place throughout the entire period of study and combine theoretical and practical training, as well as extracurricular activities of students.

The conceptual model developed by us for the training of bachelors of physical culture and sports for coaching activities in game sports with children of preschool age is a single system consisting, according to the classical structure of activity, of four main blocks – target, methodological, content and effective, the structural elements of which perform their own functions and are in close relationship with each other.

The basis for the construction of the conceptual model is determined by the social order for teachers-coaches capable of coaching activity in game sports with children of preschool age.

3. Structural elements of the conceptual model

The main structural elements of the developed conceptual model are the components of the training of bachelors of physical culture and sports, the goal, tasks, principles, organizational and pedagogical conditions, methods and forms that ensure the training of teachers-trainers, as well as criteria and indicators by which the result is evaluated – the formed readiness bachelors of physical culture and sports to coaching activities in game sports with children of preschool age.

The content of the target block reflects the social order of society, the goal, the task of training bachelors of physical culture and sports for coaching activities in game sports with children of preschool age and its components; the methodological block of the model is built according to the principles and requirements for training bachelors of physical culture and sports for coaching activities with preschool children. This block is based on methodological approaches (system, activity, competence, person-oriented, environmental, synergistic, simulation-game) and principles (the principle of integrity, the principle of structuring, the principle of conscious creative activity, the principle of professional orientation, the principle of individual self-worth, the principle of relying on subjective experience of students, the principle of partnership, the principle of complex interaction, the principle of freedom of choice, the principle of novelty); of content, containing the principles, organizational and pedagogical conditions of training bachelors of physical culture and sports for coaching activity with preschool children, forms and methods used in this process; the resulting block contains components (motivational-value, informational-communicative, organizational-facilitating, reflective-creative).

4. Organizational and pedagogical conditions

The specificity of training bachelors of physical culture and sports for coaching activities with preschool children becomes effective under the following organizational and pedagogical conditions:

– promotion of the formation of motivation among bachelors of physical culture and sports for coaching activities in teaching sports games of preschool children;

– actualization of interdisciplinary integration and its scientific and methodological support in the process of training bachelors of physical culture and sports for coaching activities in teaching sports games of preschool children;

– provision of practice-oriented training of bachelors of physical culture and sports for coaching activities in teaching sports games of preschool children through the involvement of stakeholders in the educational process.

The implementation of the specified conditions takes place in the process of assimilation by bachelors of the content of the following educational components, which are components of the Educational Program "Physical education" of the specialty 017 "Physical culture and sport":

– normative disciplines: "Theory and methods of physical education and sports", "Introduction to the specialty", "Biomechanics", "Sports games with teaching methods", "Basketball with teaching methods", "Volleyball with teaching methods", "Handball with teaching methods", "Football with teaching methods", "Educational practice", "Production practice";

– disciplines of choosing an educational institution: "Organization of mass physical culture and sports", "Sports and pedagogical improvement", "Psychological and pedagogical foundations of physical education", "Physical methods of different population groups", "Industrial practice (by specialty)", special course "Theory and methods of teaching sports games for preschool children";

– disciplines of the student"s free choice: "Pedagogical research and control in physical education", "Animation in physical culture", "Injury prevention in physical education", "Organization of leisure time of different population groups".

In addition, according to the defined organizational and pedagogical conditions, the participation of students of higher education in scientific and research (international, all-Ukrainian, inter-university conferences, projects) activities and competitions is of great importance.

Forms of student organization are: individual independent work, classroom (lecture, practical, and laboratory) and extracurricular (research, project) work, educational, pedagogical, production practices, educational and training preparation, competitions.

Teaching methods: interactive lectures, binary lectures, counseling, master classes, coaching exercises, analysis of pedagogical situations, discussions, etc.

The resulting block contains components (motivational-value, informational-communicative, organizational-facilitating, reflective-creative), criteria (motivational, cognitive, activity, analytical), levels (high, sufficient, low) of training of bachelors of physical culture and sports motivation for coaching activities with preschool children.

We assess the level of readiness of bachelors of physical culture and sports for coaching activities with preschool children using the following criteria and indicators:

– motivational (desire to engage in teaching activities, expressed interest in coaching activities with preschool children, the need to form preschoolers a positive attitude to physical activity, a healthy lifestyle);

– cognitive (completeness of knowledge regarding the specifics of organizing coaching activities with preschool children, strength of knowledge regarding the specifics of organizing

coaching activities with preschool children, awareness of knowledge regarding the specifics of organizing coaching activities with preschool children);

– activity (the presence of organizational skills in coaching activities with preschool children, the ability to apply various pedagogical technologies in coaching activities, the ability to organize coaching activities taking into account the individual and typological characteristics of preschoolers);

– analytical (the ability to monitor and evaluate one''s own coaching activity, the ability to regulate one''s behavior during coaching activity, the ability to analyze the results of one''s own coaching activity).

Characteristics of criteria and indicators are the basis of separate levels of preparation of future bachelors of physical culture and sports for coaching activities with preschool children.

5. Conclusions

The author''s conceptual model presented in this article provides a holistic continuous process of training bachelors of physical culture and sports for coaching activities with preschool children, which includes four interrelated blocks: the target one, which covers the social order and the purpose of the study; methodological, which contains a list of methodological approaches and principles on which the training of bachelors of physical culture and sports for teaching sports games of preschoolers is based; content – organizational and pedagogical conditions (promoting the formation of bachelors'' motivation for coaching activity in teaching preschool children sports games; actualization of interdisciplinary integration and its scientific and methodological support in the process of training bachelors of physical culture and sports for coaching activity in teaching sports games of preschool children; provision of practice-oriented training of bachelors of physical culture and sports for coaching activities in teaching sports games of preschool children through the involvement of stakeholders in the educational process), as well as forms of organization of students, training methods; effective (components, criteria and levels of readiness of bachelors of physical culture and sports for coaching activities with preschool children).

It is proven that the implementation of the developed model will guarantee the high-quality training of bachelors of physical culture and sports for coaching activities with preschool children due to the completeness of the content of the organized process and all its structural elements.

Approaches to the substantive filling of the professional block of disciplines need further updating in accordance with the changes in the scope of their study, provided for by the correction of state standards in accordance with the requirements of the new Law of Ukraine "On Higher Education" and the introduction of new information technologies in the professional training of bachelors of physical culture and sports.

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TERM-COMBINATION IN THE CONTEXT
OF CORPUS-APPLIED TRANSLATION STUDIES

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Summary

This research presents an investigation of term-combination as a corpus-applied translation phenomenon, which constitutes a distinct branch of applied linguistics, merging corpus analysis methods with the study of fundamental translation doctrines. The aim of the study was to examine the theoretical postulates of collocational analysis and paradigmatic transformation of term-combinations in corpus-applied translation studies, determine the quantitative feature of reproducing term-combinations in the corpus of texts, characterize the corpus feature of contextual adequacy, and demonstrate the corpus feature of grammatical concord. The research results demonstrate that the reinforcement of logical determinism of the linguistic phenomenon characterizes an integrated hierarchical approach to the classification of official-business texts, in which collocational relationships between linguistic units are traced, contributing to the expansion of the sphere of terminological combination realization in context. Overall, official-business texts fulfill a dual role: informative and suggestive. The realization of these functions can be both implicit, encoded in the internal form of term-combinations, and explicitly expressed. The pragmatic orientation of official-business texts manifests through corpus-applied translation means. Official-business documents construct the official-business discourse, which we understand as a specific environment of linguistic communication aimed at the realization of lexical-semantic, derivational, grammatical, and stylistic levels. The system of approaches applied in our research constitutes a coherent corpus-applied translation formation, structuring the manner of organization of translation methods directed at the analysis of official-business terminology.

Key words: term-combination, corpus-applied translation studies, text corpus, features of terminological combination reproduction.

1. Introduction

The history of studying the concept of "term-combination" as a linguistic and later corpus concept has been long-standing. Until recently, in the most general sense, a term-combination was understood as a "linguistic construction consisting of two or more terms combined together to denote a specific concept, object, or phenomenon" *(Masamitsu, 2005)*. A term-combination has its own properties that distinguish it from simple collocations. First and foremost, a term-combination has its specificity in linguistic studies, linguistic experiments, language teaching platforms, and language localization. Hence arises the two-tier ontological nature of a term-combination: it is a stably constructed and structurally fixed monolithic construction. The specification of a term-combination is determined by syntactic norms of its usage, specific grammatical structure, and pragmatic relationships between morphological units and categories. The formation of the concept of "term-combination" can be traced back to the emergence of specialized terminology in various domains of science. The notion of the first patterns of

term-combinations, according to S. Seljan & E. Gašpar (*2012*), appeared in ancient Greek texts, such as the philosophical works of Aristotle. Such word combinations helped to accurately convey complex concepts and ideas. In the medieval period, term-combinations gained popularity, especially in scientific texts, medicine, jurisprudence, and religious texts.

In the context of European epistemology (19th–20th century), the development of science and technology, the expansion of scientific knowledge, and the emergence of new disciplines like physics, chemistry, and biology led to the active formation of non-trivial term-combinations to describe new concepts, processes, and phenomena. As a result of the broadening of the scope of permanent terminolexical transformation in philological studies, the investigated phenomenon was officially designated as "term-combination" *(Felbaum, 2015)*.

2. Methodology

The methodology of investigating term-combinations as a corpus-applied translation phenomenon in this article is based on a comprehensive approach that combines the analysis of paradigmatic transformation, quantitative assessment of reproduction, contextual adequacy, and grammatical concordance of term-combinations in the corpus of texts.

The methodological perspective of the research encompasses the following stages:

The first stage of the research involves collocational analysis of the term-combination, which entails understanding typical word or phrase combinations for the purpose of speech synthesis. In our study, special attention is given to the analysis of paradigmatic transformation of term-combinations within the scope of its formal change. Typically, this involves changes in number, gender, case, or substitution of one term with another that carries an identical semantic meaning. An indicator of paradigmatic transformation also includes the objectification of the term-combination in the context of official-business texts, which reveals its potential, as well as causal relationships and changes in pertinent meanings.

The concluding stage of the research involves identifying corpus-based features of reproduction of term-combinations in corpus-applied translation studies. The utilization of these features contributes to emphasizing the logical determinism of the linguistic phenomenon and ensures the consistency and precision of translating epistemological terminology.

3. Results and discussion

The concentrated theoretical ideas of modern study of term-combinations have found manifestation in the work "General problems of translation of phraseological units" by Uzbek researcher Shakhlo Mukhtorivna Yusufjanova (*2022*). According to the scholar's understanding, term-combinations serve as tools for determining concepts and anthropocentrism of speech; the expressive aspect of term-combinations encompasses not only the lexemes within them but also morphemes, and even inflections.

One of the peculiarities of term-combinations is their specific semantics, which can differ from the literal meanings of individual words. Terms combined in expressions often interact and complement each other, forming a new concept. In Ch. Fellbaum's interpretation, the dominant and thus the cross-cultural perception of term-combinations serves as the foundation for comprehending a particular scientific field, which unifies its terminological apparatus through the creation of systematic and consistent terminology (*2019*). This trend has revealed the complexity of the axiological concept of "term-combination" and expanded the heuristic possibilities of its study.

In the context of corpus, linguistic, and paradigmatic transformations, the term-combination is actualized based on the principles of corpus-applied translation studies, while preserving its unambiguous and standardized lexical meaning. Therefore, the integrity of the term-combination is ensured through the combination of its formalized and intersubjective identifying features. Corpus linguistics and linguistic transformations influence the development and application of term-combinations in corpus-applied translation studies.

The differentiation in modern science between simple word combinations and term-combinations as different aspects of specific and combined meaning branches out discrete characteristics of lexical collocation and term-combination. This correlation within the system of lexical collocation/term-combination characterizes the corresponding function of the term-combination in corpus-applied translation studies. The foundation of contemporary corpus-applied principles, arising under the influence of corpus-applied translation studies, is laid upon teleological universals – term-combinations.

Considering that the term-combination is a dominant entity in the source and target languages *(Seljan & Gašpar, 2012)*, in our view, it is the pragmatic perspective of translation studies that has led to a rational division of methodological principles into relevant clusters:

Collocational analysis of term-combinations in corpus-applied translation studies is an essential tool for studying and understanding specialized vocabulary in the context of translation. Collocations are stable linguistic associations between words or word combinations that often occur together in texts and have specific meanings *(Jaworska, 2017)*.

In corpus-applied translation studies, collocational analysis of term-combinations is used to identify, reproduce, and investigate typical word combinations or phrases in the process of speech synthesis identification. Such analysis involves context beyond a single system since the act of speech is materialized through modeling collocational relationships within the text. In our research, for conducting collocational analysis of term-combinations in corpus-applied translation studies, both blocks of factors are important: the use of a text corpus that aggregates a vast amount of textual material from various sources, such as scientific articles, official-bushiness documents, translations, generating collocations and the expansion of the context realization sphere within which term-combinations emerge.

The selectivity and structured nature of collocational analysis of term-combinations are reflected in its speech representation, in the identification of close connections between terms and common lexicon encountered in specialized texts. The text segmentation aimed at highlighting marked official-bushiness discourse units also has an epistemological basis: it facilitates the perception of context, the expression of precise lexical-semantic meaning of terminological concepts, and focuses attention on statistical collocation extraction methods, linguistic models of term-combinations, and natural language processing tools, which actualize the concept of term-combinations in corpus-applied translation studies.

Paradigmatic transformation of term-combinations in corpus-applied translation studies refers to the process of changing or varying the usage of terms or term-combinations in a specific context based on corpus analysis. This process typically aims to enhance the formalization and structuring of translation. By analyzing texts from official-business discourse, researchers can identify various patterns of term or term-combination usage in different contexts, as well as their combinations with other words.

The most significant aspect of paradigmatic transformation of term-combinations lies within the change of their form. Variants of usage often demonstrate changes in the forms of terms, such as numbers, genders, cases, or the substitution of one term with another that has an identical subject-meaning. Objectification of term-combinations within the context

of official-business texts reveals their cause-and-effect potential, which manifests in the alteration of nuances in their current meaning. Thus, a term-combination may have several synonymous variants, each carrying its own shades of meaning. A characteristic feature of paradigmatic transformation is its pragmatic orientation towards the adequate reflection of translation variants. It usually involves breaking down the term-combination into separate words or altering the word order to better reproduce the represented expression in the target language.

Corpus features of reproducing term-combinations in corpus-applied translation studies. The comprehension of translation in the field of computational language processing starts at an algorithmic level. As crucial components of algorithmic models, we consider software products and databases, which serve as efficient archivers among other translator's tools.

Condensed within corpus linguistics, text corpora are designed to address various tasks, involving the extraction of inherent characteristics of linguistic constructions for qualitative linguistic analysis *(Bednarek, 2021)*. In a more generalized sense, the classification distribution of text corpora into bilingual and multilingual *(Fantinuoli, 2022)*, representing numerous original texts with corresponding translations, allows for the interpretation of their linguistic content. It's important to also consider corpora where all languages are equivalent categories *(Pystejovsky, 2004)*: 1) corpora created based on official-business texts, such as those from international organizations like NATO, UN, WTO, or the European Community; 2) pseudo-parallel or comparable corpora gathered under similar criteria, combining texts from the same thematic group written in two or more languages, comprising original and translated texts.

The capabilities of corpus linguistics in operational processes, such as forming text corpora, studying linguistic content within the corpus, revealing mechanisms of language interaction within contextual content reflection, contribute to linguistic processing of this content reflection. It's in this way that the identification of term-combinations belonging to words with a particular function of pragmatic realism transmits information about official-business texts of international organizations.

The initiation of studies on the extraction of term-combinations from official-business texts was spurred by the research efforts of various scholars in different domains. S. Picciotto's work on financial terminology (*2011*), I. Simonnæs's investigation into legal terminology (*2019*), S. Flusberg, T. Matlock & P. Tibodeau's study of war metaphors in public discourse (*2018*), J. Griffin's analysis of UN terminology in the field of human rights (*2008*), and W. Goode's work on trade terminology (*2008*) collectively delved into the meaning and attributes of attributive terms. These attributive terms, distinct from common lexicon, are organized, interconnected, and complexly structured determiners.

Renowned theorist of official-business terminology, Thierry Fontenelle, believes that linguistic advancements contribute to the expansion of corpus studies in the direction of collocations and term-combinations. Fontenelle introduced the terms "lexical" and "grammatical collocation," reflecting the interdependence of quantum states between two different linguistic constructions (*1994*). The collaborative work of K. R. McKeown & D. R. Radev in "Collocations: A handbook of natural language processing" (*2000*) elucidates crucial linguistic components used for various natural language processing tasks, encompassing natural language generation, machine translation, information retrieval, sentiment analysis, and language learning. The researchers conclude that computational systems will influence collocation search, involving "three dimensions: frequency, mutual information of two random variables, and $\chi 2$ test" (*McKeown, Radev 2000*). Following the modern scientific paradigm of corpus linguistics,

"an automatic system for extracting and investigating collocations forms its types of term-combinations, including those of official-business nature" (Ibid.).

Despite the application of statistical and automated methods for extracting term-combinations from collocations (such as Sketch Engine, association methods, strength of association criteria), these methods primarily characterize high-frequency collocations that serve as an intermediate level between single terms and idiomatic expressions. However, within this scope, certain lexical variants are still utilized, expanding the capabilities of the statistical approach and enhancing the likelihood of collocational relationships based on given keywords. In some cases, automated systems may conflate general vocabulary with term-combinations, which can impact the communicative accuracy of specialized texts.

The adequate selection of optimal features for representing term-combinations in corpus-applied translation studies can be attributed to traditional linguistic analyses and linguistic studies. Within the framework of the traditional approach to reproducing term-combinations, the following features are employed: structural integrity, which does not involve separate components within the term-combination; lexical precision; stylistic unification; and adequate syntactic structure of reproducing the term-combination in context.

In corpus-applied translation studies, terminologization, which involves enriching the terminological vocabulary by extracting linguistic units from a text corpus, prompts the choice of optimal features for reproducing term-combinations in translation.

Quantitative features for reproducing term-combinations within a text corpus also illustrate the use of mathematical modeling methods (characteristic method, principal component analysis), statistical association measures (log-likelihood, MI, t-score), and the TF-IDF measure (product of two factors) reflecting the integration aspect in the process of extracting term-combinations from a set of collocations. This results in a constant multiplier applied to each word, logical contextual activation through the KWIC format, which assists in developing a program for reading a text file and an algorithm for number extraction within a string, and the utilization of software tools like Sketch Engine and Orange, which play a crucial role in the high-quality corpus analysis of official-business texts from international organizations.

Taking into account the representativeness of official-business texts in both the source and target languages, the frequency of occurrence of a term-combination in context allows for its pluralization in translation. The quantitative feature ensures consistency of the analyzed phenomenon and contributes to the precision of translating epistemological terminology.

The ***corpus feature of contextual adequacy*** involves contextual analysis in which the term-combination is used. The linguistic format (linguistic representation) of an official-business text is oriented towards emphasizing the importance of reproducing the term-combination in various contexts. This is done to understand the semantic nuances of language elements and to find an appropriate translation that takes these patterns into account. Representing term-combinations in official-business texts through the lens of corpus-applied translation studies has its specificity.

Nominalist models of designations of international organizations, *well-known names of secretaries and political figures, military strategic objects, combat zones, military operations, international capital movement, trade activities, resolutions of the UN General Assembly, international migration* form the basis for corpus research into modern terminology. This feature is based on the idea that achieving contextual adequacy requires considering an extensive context, including the context in the source language, the context in the recipient language, and the reproduction of cultural specificity in both languages.

Therefore, when selecting a term-combination to work with in a text corpus, we have in mind databases that enhance the reception of contextual elements in both the source and target languages, represent intertextual relationships, and demonstrate contextual adequacy in corpus-applied translation studies.

The enrichment of the conceptual framework of corpus studies enhances the overall linguistic format of the text corpus related to the analysis of official-business issues. In the context of official-business discourse, the emphasis on corpus terminological parameters is particularly prominent. Specifically, the ***corpus feature of grammatical agreement*** demonstrates evaluative models, grammatical guidelines, and priorities for grammatical correspondence between the original and translation in corpus-applied translation studies. The essence of the grammatical agreement feature, as a corpus-determined phenomenon that is formed and manifested in official-business texts, takes into account the grammatical correctness of translation and is an important aspect of its quality. In this regard, grammatical norms and rules of language, both in the original and the target language, appeal to precedent nominalizations.

The influence of grammatical forms and syntactic structures is highly persistent, which is reflected in a deep understanding of syntactic peculiarities in both the source and target languages. Additionally, the use of grammatically balanced phrases, functional invariable parts of speech, prepositions, pronouns, and other grammatical elements is an important aspect of grammatical agreement of term-combinations in the text corpus. Demonstrating adequate grammatical constructions contributes to preserving the integral structure and semantics of the text during translation.

In the context of our research, the corpus feature of grammatical agreement enables the description of the usage of tenses, verb forms, numerals, and other grammatical categories that ensure accurate information transmission. The linguistic approach directs its toolkit towards analyzing terminological combinations in official-business texts. The research value of the grammatical agreement feature lies in reproducing complex grammatical structures in the source language, through the corpus of texts, reflecting similar cases in the target language and substantiating the choice of an appropriate translation.

Thus, analyzing a corpus of official-business texts using an integrated hierarchical approach to document classification, utilizing the quantitative feature of term-combination reproduction in the text corpus, the feature of contextual adequacy, and the corpus feature of grammatical agreement becomes a significant trigger for quality research of official-business texts. The use of these features emphasizes the logical determinism of the linguistic phenomenon and ensures consistency and precision in translating epistemological terminology.

4. Conclusions

Therefore, the influence of the text corpus, linguistic transformations, and translation pragmaticism on the analysis and reproduction of term-combinations in corpus-applied translation studies underscores the dominant importance of term-combinations in the context of the functional orientation of the source and target languages. The new system of knowledge in collocation analysis of term-combinations initiates research that offers a theoretical perspective on an important toolkit for studying and understanding specialized vocabulary in the context of translation. Techniques and methods of reproducing and researching typical word combinations or phrases in the process of speech synthesis, involving context and using the text corpus in corpus-applied translation studies, contribute to forming collocational relationships and expanding the scope of context realization in which term-combinations emerge. At the same time, the

procedure of outlining paradigmatic transformation of term-combinations in corpus-applied translation studies tends toward changing and varying the way term-combinations are identified in the context of official-business texts based on corpus data analysis. In this regard, we interpret the component complex of this phenomenon as a formalized and structured unity of two or more pragmatically related terminological units.

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THE IMPACT OF INDUSTRY 4.0 ON THE MODERN WORLD EDUCATIONAL PROCESS AND IN UKRAINE

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Summary

In the article, the authors analyze the basic concepts of Education 4.0 and determine that it is characterized by the digital transformation of industry and the introduction of advanced technologies. It is established that Education 4.0 is a new approach to learning based on the use of advanced technologies, interactivity and individualization of the learning process. It is noted that the Concept of Education 4.0 provides for a change in the basic principles of the educational process: the formation of a set of competencies rather than a set of knowledge; continuous improvement of teaching methods through the active introduction of modern technologies; teacher and student become partners who jointly carry out research activities The authors describe the features of the implementation of Education 4.0 in Poland, Ukraine and Romania, and provide an overview of the achievements and challenges facing Education 4.0 in the modern world.

In the article, the authors explore the challenges that accompany the implementation of this concept, such as increasing the competence of teachers, educators and research and teaching staff; creating technological infrastructure; issues of technological support, and others. In the course of the study, a survey was conducted at the All-Ukrainian Conference "Innovations, Trends" in 2023. A total of 55 respondents aged 25–68 took part in the survey. It is noted that encouraging a country to implement Education 4.0 is important for its competitiveness and development in the face of rapidly changing technologies. The authors provide recommendations that will help implement Education 4.0 and improve the educational process.

Key words: Education 4.0, digitalization, higher and pre-higer education institutions, information and communication technologies, new strategies, educational process.

1. Introduction

The information revolution, the rapid development of technology and communications, the pandemic, and then the war launched by the Russian Federation against Ukraine in 2022 were marked by the necessary transition to "digital" and distance education. The full-scale invasion of Russian troops dealt a major blow to the Ukrainian higher education system compared

to years of quarantine restrictions. The destruction of the infrastructure of higher education institutions, the problem of human capital, as well as the resumption of the educational process under martial law have become real challenges.

Therefore, the activation of new ways of learning, the search for new strategies and the development of Education 4.0 around the world have prompted Ukrainian educational institutions to try to actively implement it in the learning process.

Industry 4.0, characterized by the digital transformation of industry and the introduction of advanced technologies, has a significant impact on the modern educational process both in Ukraine and around the world.

After analyzing the work of scholars, we can identify the following aspects of Education 4.0:

– Updating curricula: Industry 4.0 requires updating curricula to take into account current technological trends *(Salmon, 2019)*. New courses and modules should include skills in artificial intelligence, the Internet of Things, data analysis, etc. This is becoming a prerequisite for graduates to be ready for a successful career in the digital age and to actively participate in the development of industry. It is worth noting that the curriculum update has several key aspects:

1. Inclusion of modern technologies: new curricula should take into account the latest advances in information technology, artificial intelligence and other technologies that define Industry 4.0.

2. Practical orientation in teaching disciplines, as programs should provide opportunities for the practical use of new technologies through laboratory work, projects, and internships at modern enterprises.

3. Cross-disciplinarity is an important element: updated programs should promote interaction between different technical fields to prepare specialists capable of solving complex problems in global technological ecosystems.

4. Key skills and competencies that enable the development of skills in working with big data, data analysis, software development, and cybersecurity and data protection.

– Development of digital skills: students studying in the modern world need to have basic digital skills to work effectively with modern computers, software, and electronic devices *(Anand, 2021)*.

– Availability of electronic infrastructure and access to the Internet of Things in educational institutions. Industry 4.0 requires a reliable electronic infrastructure and fast Internet connection to provide access to online resources and learning platforms *(Bykov, 2017)*.

– Open learning and scalability. Thanks to technological tools, the educational process can become more open and accessible to the general public, including distance and blended learning and scaling of educational programs.

– Changes in teaching methods. The introduction of new technologies, such as cloud services, virtual reality, and augmented reality, can improve the educational process, encourage students to learn, and motivate them.

– Ensure flexibility and adaptability. Modern curricula should provide students with skills that allow them to quickly adapt to changes in the technological sphere and the economy *(Barreiro, 2022)*.

Summarizing the above, Education 4.0 transforms the educational process, making it more adapted to the requirements of the modern technological society and contributing to the training of qualified personnel for the digital age.

2. Analysis of scientific sources

The processes of digitalization in educational institutions were considered by such scholars as O. Spirin, L. Kartashova, S. Antoshchuk, O. Humennii, N. Volkova, A. Kviatkovska, O. Shelever, and others. The effectiveness of the use of educational technologies and the implementation of Education 4.0 in Ukraine was studied by T. Vakaliuk, A. Yatsyshyn, S. Nazarovets, O. Zhabin, L. Kartashova, O. Ovcharuk, L. Petukhova, I. Robert, P. Samuelson, and others.

3. Features of Education 4.0 in Ukraine

Education in Ukraine still lags far behind past Industrial Revolutions (2.0 and 3.0) and involves the use of predominantly traditional teaching methods. Computers and the Internet still have little influence on the educational process, when they should become drivers of its improvement. That is why the study of the principles of functioning of universities in the context of the deployment of Industry 4.0 for their implementation in the practice of Ukrainian higher education institutions is important *(Kasych, 2022)*.

The European University Association (EUA) says Europe needs strong, autonomous and accountable universities that can act strategically and strive for continuous improvement. Their important characteristics should be consistency, interdisciplinarity, diversity and social cohesion. Higher education institutions must provide teachers with modern pedagogical tools and innovative technologies to support the educational process that meets the requirements of society 4.0.

That is, the key tasks of transforming universities towards the next level of development should be: implementation of Industry 4.0 technologies by updating the material and technical base; improvement of educational programs by modernizing them in accordance with the industry and sectoral direction and taking into account their advanced achievements; optimization of learning processes through the introduction of digital and other innovative technologies and methods; expansion of international cooperation through academic mobility, implementation of joint educational and research projects.

During the Government meeting on December 9, 2022, the major transformation program "Education 4.0: Ukrainian Dawn" was presented, which was prepared by the Ministry of Education and Science team on the basic principles and principles of the Ukraine Recovery Plan. The strategic goals of the program are the direction towards the restoration and development of Ukrainian education on the path to European integration. The priority is to restore the destroyed infrastructure. The key formula for financing education should be the principle of "money follows the person," which will allow citizens to be subjects of educational policy.

Not all universities are able to implement education 4.0 methods and technologies. Since Industry 4.0 is based on the use of automation and digitalization technologies, graduates must be ready to work in such dynamic conditions.

In general, the Concept of Education 4.0 provides for a change in the basic principles of the educational process: the formation of not a set of knowledge, but a set of competencies; continuous improvement of teaching methods through the active introduction of modern technologies; teacher and student become partners who jointly carry out research activities.

In the 21st century, there is a gradual transformation of higher education and a change in the philosophy of functioning of higher education institutions. Let us add that in Ukraine there is no higher education institution of this level yet.

4. Features of the implementation of Education 4.0 in Poland and Romania

The Polish labor market is still struggling with a shortage of competencies in Industry 4.0 and digital transformation. That's why an educational project was created, implemented by the Wroclaw University of Science and Technology in cooperation with ABB. The goal of the Education Project is to prepare future engineers to work in a digital industrial environment, equip teachers with modern tools, and convince those already working in industry to embrace digital transformation. The project includes, among other things, the creation of new curricula and courses based on innovative teaching methods. The main focus will be on expanding the educational offer of the Laboratory of Modern Electrical Devices at the Wroclaw University of Science and Technology, which is already one of the most modern facilities of its kind in Poland. The initiative will be funded by the governments of Iceland, Liechtenstein and Norway under the financial mechanism of the European Economic Area (EEA). In the DESI 2021 report, Poland ranks 24th in the European Union in terms of digitalization of the economy and society. Although, of course, many universities in Poland are trying to introduce elements of Education 4.0 into their teaching. For example, the Politechnika Gdańska is known for its expertise in technological disciplines and is actively working to adapt its education to modern technological requirements. The Politechnika Polska is known for its specialization in engineering and technology. It is actively working on the introduction of modern technologies, virtual laboratories and pedagogical approaches in the process of blended and distance learning.

The authors also analyzed the state of Education 4.0 in Romania, which is at the initial stage. Thus, in the project "Development of the Institutional Capacity of the Ministry of Economy, code SIPOCA: 7", Industry 4.0 refers specifically to Romania: "Support for digitalization in enterprises in the context of Industry 4.0, "taking into account the extreme importance of the EU in Romania's international trade" *(Turkes, 2019)*. Romania, like any other country in the world, has faced some challenges to adapt to the new educational context. As Romanian scientist S. Halili, technologies such as 3D printers or multitouch LCD screens are not available in educational institutions. Therefore, additional funds will be needed to purchase new equipment. In addition, teachers in higher education institutions are a crucial factor in the successful integration of technology. But in this context, Romania has problems: the reluctance of teachers to move from a traditional teaching system to a more student-centered one *(Halili, 2019)*. Most of them also lack the digital skills needed to work with the new equipment, necessitating intensive training. In response to the European Union's requirements, Romania developed in 2020 the Strategy for the Digitalization of Romanian Education for 2021–2027. It was a dense legislative proposal structured around two main areas of EU inclusion in digital education. According to this document, the digitalization of the education system has been a government priority since 2016, after the launch of the Educated Romania project.

5. Research results

In the course of the study, the authors analyzed the challenges faced by higher education institutions in implementing Education 4.0. During the All-Ukrainian Conference "Innovations, Trends" in 2023, a survey was conducted among teachers, graduate students, lecturers and research and teaching staff on the likelihood of challenges that higher and professional higher education institutions will face as a result of the implementation of Education 4.0. A total of 55 respondents aged 25–68 took part in the survey. The results of the survey are presented in Fig. 1.
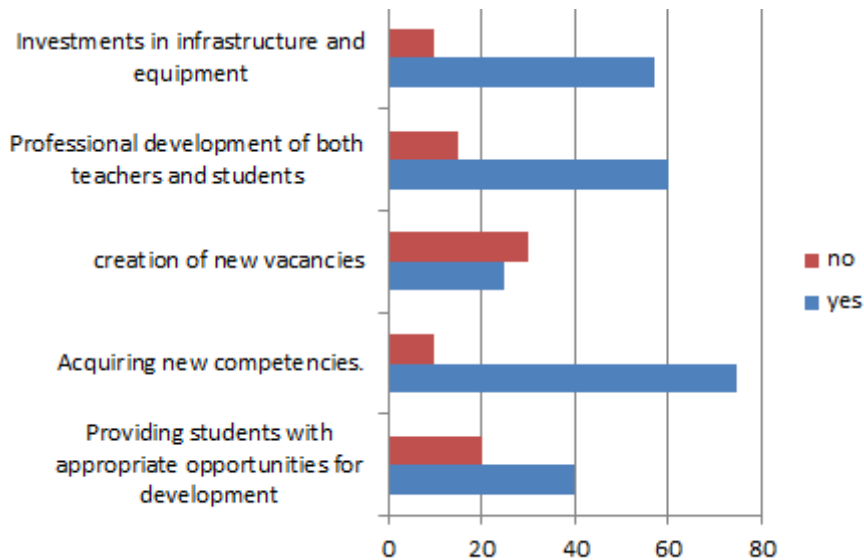
Fig. 1. Respondents' answers to the risks of Education 4.0

Having analyzed the survey results, we can say that the respondents believe that the main challenges are:

1. Providing students with appropriate opportunities to develop and acquire new competencies. Indeed, Artificial Intelligence, the Internet of Things, and advanced robotics require specialized knowledge and experience. Of course, employers provide additional training (40% said "Yes" and 20% said "No" to relevant opportunities, and 75% said "Yes" and 10% said "No" to competencies).

2. A potential challenge is the creation of new jobs, so the tasks of educational institutions at all levels include appropriate training of young people to solve problems related to Industry 4.0 technologies (25% said "Yes", 30% – "No").

3. Professional development of both teachers and students (60% said yes, 15% said no). Modern higher education institutions should also strive to improve the skills of their staff so that they can support their students on the path to success in the market defined by Industry 4.0 technologies.

4. Investments in infrastructure and equipment (57% said "Yes", 10% – "No").

Therefore, encouraging a country to implement Education 4.0 is important for its competitiveness and development in the face of rapidly changing technologies. The authors recommend the following steps that can be taken to achieve this:

1. Develop a clear strategy: Government agencies and educational institutions should jointly develop a clear strategy for implementing Education 4.0. It should include specific goals, objectives and steps to achieve success.

2. Forming partnerships. It is important to cooperate with industry, technology companies, and innovative startups. This will support training that meets the needs of the labor market.

3. Supporting infrastructure changes. Investing in modern infrastructure, including access to fast Internet and technologically equipped classrooms, is essential for the successful implementation of Education 4.0.

4. Enhancing the competencies and professional development of teachers, educators and pedagogical and research staff. They should have the opportunity to acquire skills and knowledge to use modern technologies in teaching: conducting trainings and seminars, participating in international conferences is an important component of this.

5. Financing of innovations: The state should provide financial support for the development and implementation of innovative curricula and technologies in educational institutions at all levels.

6. Conclusions

On the one hand, the results of the study confirmed the continued interest at the European level in bringing the education system in line with the new

Paradigm, on the other hand, they proved that there are significant implementation risks. Which can occur in every country. The authors note that the implementation of Education 4.0 is a complex process, but it can significantly improve the quality of education and prepare students for the requirements of the modern world. To overcome these challenges, cooperation of all stakeholders and constant adaptation to changes in the technological environment and society are necessary.

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HISTORICAL EVOLUTION OF IT TERMINOLOGY AND ITS FURTHER DEVELOPMENT

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Summary

The article examines the peculiarities of the evolution of the IT (Information Technology) language and its interaction with the environment, which is manifested by the constant appearance of new words and expressions that arise when describing technological phenomena. The study employs historical, linguistic, and cultural analyses to provide insights into the evolution of IT terminology.

The historical evolution of IT terminology traces the dynamic progress of technology. Beginning with borrowed mathematical terms like "algorithm" from the work of Persian mathematician al-Khwārizmī, IT terminology has continually adapted to embrace new concepts. Charles Babbage's analytical engine introduced "punch cards" and "mechanical levers" as precursors to modern IT vocabulary. The ENIAC era expanded it to include "circuit," "transistor," and "byte." Software development contributed "bug," and the rise of personal computers brought "desktop" and "mouse."

The internet era ushered in terms like "email" and "browser," while the mobile age introduced "apps" and "WiFi." The 21st century witnessed the emergence of "tweet," "neural networks," "deep learning," and "machine learning," reshaping technology and industries.

Immersive technologies brought "virtual reality" and "augmented reality," while decentralized systems introduced "blockchain" and "cryptocurrency," revolutionizing finance.

Standardization of IT terminology has become crucial for clear cross-border communication, led by organizations like the Internet Engineering Task Force (IETF).

Looking forward, the IT lexicon will expand with terms related to quantum computing, biotechnology integration, and emerging technologies. In conclusion, IT terminology reflects adaptability in the digital age, ensuring precise communication in an ever-changing technological landscape.

Key words: evolution, language, technology, historical origins, standardization, future developments.

1. Introduction

The emergence of IT (Information Technology) terminology is a testament to human innovation. Over time, as our technological environment has grown and changed, our language has adjusted to encompass fresh concepts, notions, and instruments. It's a journey that stretches back through the annals of history, intertwined with the evolution of technology itself. From its humble beginnings rooted in mathematics to the contemporary digital era, the lexicon of IT has expanded exponentially, shaping not only the way we communicate but also our understanding of the digital world. This article embarks on a linguistic exploration, tracing the historical

evolution of IT terminology and its profound impact on our technological landscape. It reveals how these terms, far from being static, are living entities that adapt and evolve to accommodate the ever-advancing frontiers of technology.

2. Origins and development of IT terminology

The emergence of IT (Information Technology) terminology is a testament to human innovation. Over time, as our technological environment has grown and changed, our language has adjusted to encompass fresh concepts, notions, and instruments. As our technological environment has undergone seismic shifts over the decades, our language has demonstrated a remarkable capacity to adapt and expand. This linguistic evolution is not a passive process; rather, it reflects our active engagement with the cutting edge of innovation. With each new invention, breakthrough, and paradigm shift, our vocabulary expands to accommodate fresh concepts, notions, and instruments.

Many of the earliest IT terms were borrowed from mathematics. Words like "algorithm" can be traced back to al-Khwārizmī, a Persian mathematician *(Why Algorithms, 23)*. This borrowing of mathematical terms into the realm of information technology highlights the close relationship between these two fields and the way mathematical principles have been instrumental in shaping the language and concepts of IT.

The emergence of groundbreaking inventions like Charles Babbage's analytical engine marked a pivotal moment in the development of information technology. Terms such as "punch cards" and "mechanical levers" became the precursors to more advanced IT lexicon *(Fundamentals, 2023)*.

As the analytical engine evolved and gave birth to subsequent computing machines, the terminology expanded to encompass concepts like "programming," "binary code," and "machine language." These terms, rooted in the innovations of Babbage and his contemporaries, laid the groundwork for the rich and diverse vocabulary of information technology that we use today. Thus, the history of IT terminology reflects the continuous development of technology and the ever-expanding lexicon required to describe and understand these advancements.

The advent of groundbreaking devices like the ENIAC (Electronic Numerical Integrator and Computer) marked a significant turning point in the evolution of IT terminology. During this transformative era, the lexicon of information technology expanded to incorporate a host of new and essential terms, including "circuit," "transistor," and "byte" *(A Brief History, 2023)*.

The ENIAC, as one of the earliest electronic computers, relied on complex electronic circuits to perform calculations. This development gave rise to the term "circuit" within the realm of IT, denoting the interconnected pathways of electronic components that facilitated data processing and computation. Furthermore, the subsequent invention of the transistor, a crucial electronic component, led to the integration of this term into IT terminology. Transistors revolutionized the field by offering a more compact and efficient alternative to vacuum tubes, enabling the miniaturization of computers and the rapid advancement of electronic technology. The concept of "byte" also emerged during this period as a unit of digital information storage, representing a set of binary digits (bits). This term became fundamental for measuring data capacity and representing the size of files, data transfers, and memory storage.

The advent of software development marked a pivotal phase in the evolution of IT terminology, bringing with it a host of foundational terms that have since become integral to our understanding of computer science and programming. One of the most iconic terms

to emerge during this period was "bug," a word popularized by the legendary computer scientist Grace Hopper. The story goes that in the early days of computing, an actual moth got trapped in a computer's hardware, causing a malfunction. Hopper humorously referred to this incident as a "bug," and the term stuck *(Shapiro, 1987: 376)*. While the literal bug incident was a rare occurrence, the metaphorical concept of a "bug" came to symbolize any unexpected issue or error in software. This simple word became the cornerstone of debugging, a critical aspect of software development aimed at identifying and resolving issues in code.

In addition to "bug," software development introduced other key terms that revolutionized the field. "Loop" represented a fundamental concept where a sequence of instructions is repeated until a certain condition is met, allowing for efficient and repetitive operations in code.

The late 20th century witnessed a technological revolution that transformed the way we interacted with computers and the digital world. This era introduced plenty of terms that became an integral part of our everyday language, reflecting the profound impact of personal computing, the internet, and mobile devices on our lives.

With the rise of personal computers, the lexicon of information technology underwent a significant expansion. Terms like "desktop," "mouse," "keyboard," and "monitor" emerged as essential components of the personal computing experience. The "desktop" referred to the graphical user interface where users could organize files and launch applications, becoming the digital workspace for millions. The "mouse" revolutionized computer interaction by allowing users to point, click, and navigate through graphical interfaces seamlessly. The "keyboard" remained the primary input device, enabling users to type documents and interact with software. The "monitor" displayed digital content, from text and images to videos, making it a window to the digital world.

The birth of the internet in the late 20th century brought forth a whole new set of terms that would define the online landscape. "Email" revolutionized communication, allowing individuals to send messages electronically, transcending geographical boundaries. "Browser" became the gateway to the World Wide Web, enabling users to explore websites and access information. "Servers" hosted websites and data, providing the backbone of the internet's infrastructure. "URL," or Uniform Resource Locator, served as the web address, guiding users to specific online destinations. "HTML," or Hypertext Markup Language, underpinned the structure of web pages, shaping the way content was presented. "Hyperlink" allowed users to navigate between web pages with a simple click, introducing a new level of interconnectedness to online content.

The 2000s marked the rise of mobile devices, introducing another wave of technological innovation and terminology. "Apps," short for applications, referred to the software programs designed for smartphones and tablets. These apps ranged from games and social media platforms to productivity tools and utilities, transforming mobile devices into versatile tools for work and entertainment. "Sync" became essential for keeping data and content consistent across multiple devices, ensuring seamless access to information. "WiFi" enabled wireless internet connectivity, freeing users from the constraints of wired connections. "Bluetooth" facilitated short-range wireless data exchange, connecting devices like headphones, speakers, and peripherals to smartphones and computers. In essence, the late 20th century and the subsequent decades were marked by a proliferation of IT terminology driven by the rapid advancements in personal computing, internet technology, and mobile devices. These terms not only reflected the evolution of technology but also became an integral part of our daily lives, shaping the way we communicate, work, and navigate the digital landscape.

In the 21st century, the advent of platforms like Facebook, Twitter, and cloud services such as AWS ushered in a new era of IT terminology. Everyday language quickly integrated terms like "tweet" and "hashtag," reflecting the impact of social media on communication. "Tweet" represented posting short messages on Twitter, while "hashtag" became a powerful tool for categorizing and searching content across platforms.

Simultaneously, cloud services like AWS popularized the term "cloud," signifying remote data storage and processing, transforming businesses and individuals' digital operations. "Streaming" technology revolutionized entertainment by delivering multimedia content in real-time via the internet, making physical media obsolete. Netflix and Spotify exemplified this shift.

These terms not only became part of our daily conversations but also reshaped how we communicate, work, and entertain ourselves. They embody the fusion of technology and culture in the digital age, illustrating the evolving nature of IT terminology's role in our digital experiences.

Advanced computational processes brought terms like "neural networks," "deep learning," "bots," "algorithms," "machine learning," "artificial intelligence," "natural language processing," and "data mining" to the forefront, revolutionizing the landscape of modern technology and reshaping industries across the board. These terms are not mere linguistic constructs but the cornerstones of a technological revolution that continues to redefine the way we interact with and perceive our digitally infused world.

The emergence of immersive technologies gave birth to terms such as "virtual reality", "augmented reality", "headsets", and "haptic feedback". These terms not only describe technologies but also represent the evolution of human-computer interaction, promising exciting possibilities for the future.

Recent advancements in decentralized systems have introduced terms like "blockchain", "cryptocurrency", "mining", and "distributed ledger".

These terms have transcended mere buzzwords to become integral components of the global financial discourse. They not only reflect technological innovation but also signify a paradigm shift in how we perceive, store, and exchange value in the digital age, with far-reaching implications for finance, security, and beyond.

3. Cultural impact

The cultural impact of IT has also played a role in the creation of terminology. Terms like "hacker" or "cybersecurity" were influenced by both the technology and the culture surrounding it. Films, books, and media often popularized or introduced these terms to a broader audience.

Beyond "hacker" and "cybersecurity," numerous other terms have been shaped by this cultural intersection. Consider "viral" in the context of internet content; it reflects the rapid spread of information akin to biological contagion. Phrases like "going viral" have become commonplace in describing online phenomena. Similarly, "webinar" and "podcast" illustrate the fusion of the web and broadcasting, reflecting how we use information and entertainment. The concept of "selfie" encapsulates the digital age's penchant for self-expression and self-documentation, while "emoji" and "memes" are visual symbols of our online culture. Even the notion of "unfriending" or "blocking" in social media signifies the intricacies of our digital relationships. These terms not only emerge from the prevailing culture but also serve as linguistic signposts of our evolving societal norms, behaviors, and values in the digital era.

4. Standardization

Information technology (IT) is a complex field with intricate concepts and processes which requires specific terminology, ensuring clear and precise communication among professionals. Without standardized IT terms, misunderstandings and errors could arise, potentially leading to critical system failures or data breaches. In an increasingly interconnected world, IT professionals collaborate across borders. Standardized IT terminology, often in English, facilitates seamless communication among professionals from diverse linguistic backgrounds. It serves as a lingua franca in the IT industry, allowing teams to work together effectively. IT terminology streamlines communication by condensing complex ideas into concise terms. This efficiency is crucial in IT support, troubleshooting, and decision-making processes. It enables professionals to convey ideas quickly and accurately, saving time and resources.

As the IT industry operates on a global scale, the imperative to standardize its vocabulary and establish a common language capable of surmounting linguistic and cultural barriers takes on profound significance. Addressing this imperative, influential organizations like the Internet Engineering Task Force (IETF) *(Internet Engineering, 2023)* assume a central role. The IETF, an open international community comprising network designers, operators, vendors, and researchers, functions under the auspices of the Internet Society. Their primary focus involves actively participating in the development and upkeep of protocols, technologies, and terminologies that underpin the contemporary digital landscape. Beyond advancing technology, their mission encompasses ensuring lucid and uniform communication within the IT field.

The steadfast commitment of the Internet Engineering Task Force to preserve and standardize IT terminology has yielded a substantial contribution to facilitating effective cross-cultural cooperation. Through the establishment and maintenance of terminology standards, they facilitate dialogues among IT professionals, researchers, developers, and practitioners on a global scale. These standards transcend linguistic boundaries, guaranteeing that technical discussions and documentation remain comprehensible, regardless of the mother tongues of the individuals involved.

In the ever-evolving realm of IT, organizations such as the IETF, along with notable entities like the Institute of Electrical and Electronics Engineers (IEEE) *(IEEE, 2023),* the World Wide Web Consortium (W3C) *(W3C, 2023)*, and the Open Source Initiative (OSI) *(OSI, 2023)*, transcend their roles as technology developers. They serve as guardians of a universal language that empowers individuals from diverse linguistic and cultural backgrounds to communicate and collaborate harmoniously. Thus, the standardization of IT terminology emerges as a testament to the potency of collaborative efforts, fostering a global community united by a shared comprehension of technical concepts and innovations.

5. The future

In the ever-accelerating march of technology, the influx of novel concepts and ideas necessitates the constant introduction of new terms into the IT lexicon. As we delve deeper into the realms of quantum computing, delve into the intricate fusion of biotechnology and information technology, and explore frontiers yet uncharted, our vocabulary must evolve in kind. This dynamic linguistic landscape is a testament to our adaptability, reflecting not only the depth of our technological advancements but also our commitment to accurate and precise communication.

Quantum computing, for instance, brings with it a plethora of unique terminologies related to qubits, superposition, and quantum entanglement. The biotechnological integration into IT spawns neologisms at the intersection of genetics, informatics, and artificial intelligence, as we seek to redefine healthcare and biotechnology. As smart cities, IoT ecosystems, and blockchain technologies mature, so too will the lexicon of IT, introducing words like "smart grids," "sensor fusion," and "decentralized consensus."

6. Conclusions

In summary, the evolution of IT terminology is an integral part of our technological life. As new technologies and concepts emerge, so do new terms. IT terminology reflects the cutting-edge innovations in the field, providing a framework for discussing and understanding these developments. IT terminology is the backbone of effective communication within the technology sector and across various industries. It promotes clarity, efficiency, and collaboration while ensuring that the IT field remains adaptable to rapid technological changes. Its importance is evident in every aspect of modern communication and technology-driven endeavors. As we forge ahead on the uncharted path of technological advancement, our language keeps pace, adapting and expanding.

Such technologies as punch cards, mainframes, the cloud computing, AI, and blockchain are proof of that. Each step forward introduces novel concepts, tools, and paradigms that demand their lexicon. Terms like "big data," "machine learning," and "smart contracts" emerge not just as linguistic novelties but as indispensable tools for articulating complex ideas.

In this ever-evolving landscape, our mastery of IT terminology remains paramount. Precise, well-defined terminology ensures that our shared understanding of IT concepts remains unambiguous and globally accessible.

To sum it up, the evolution of IT terminology is not a passive byproduct but an active testament to our adaptability and growth in the digital age. It's a reflection of our capacity to embrace change, innovate relentlessly, and navigate the complex terrain of technology with unwavering precision and clarity. As technology continues its relentless march forward, so too will our linguistic prowess evolve.

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GUARDIANS OF THE COMMUNICATION PROCESS, THEIR FUNCTIONS IN THE FORMATION OF THE MEDIA LANDSCAPE

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Summary

The proposed study examines the complex and multifaceted communication process, as well as the role of the media in shaping public perception, values, and beliefs. Recognizing the power and responsibility of the mass media for percepting the environment, emphasizing the importance of media literacy and critical thinking of information consumers, we propose to comprehend the key functional of specialists who dramatically influence the media landscape development, agenda molding, as well as "information bubbles" creating that can be as favorable for the further development of the society, as inhibiting it.

In our opinion guidekeepers, spin-doctors and news-ombudsmen play the key roles among communication specialists. They influence not only the control and filters of the content broadcast, but also the formation of moral principles of media workers in general and the creation of professional ethical codes.

Considering, that modern media platforms serve as the means of spreading social, political, cultural ideas, as well as public discourse of various orientations, it is worth actualizing functions of the media (both individual representatives and platforms in general) such as: conscious design and dissemination of information; management of public perception in order to prevent political and economic crises; ensuring honesty, accountability and transparency between the public and representatives of the media community. Particularly these functions the mentioned media persons are able to provide, as despite the different contextual bases, they all play an important role in the process, management and development of ethical principles of communication.

Key words: gate-keeper, spin-doctor, news-ombudsman, media person, communication, information, media ethics.

1. Introduction

In modern conditions of extensive informatization, the foundations of the information and communication process are the formation and functioning basics of the media landscape covering various stages and elements involved in the transmission of information, ideas and messages from sources to recipients through various communication channels. Understanding the communication process functioning is critical for understanding the media landscape work. In addition to the established and well-known stages of the communication process, such as: a sender, a message, encoding, decoding, channels, noise, receivers and feedback, some new components of this process are appearing, in particular: gatekeeping, which is responsible for controlling and filtering information, before it will reach a wider audience through the media; spin-doctoring – a technology aimed at presenting information, an event or a person in a favorable light,

using persuasive language, framing and strategic messages for the purpose of managing public perception; controlling provided by the news ombudsman, whose activity comprises not only ensuring the honesty and transparency of broadcast information, but also investigating and considering complaints and disputes between the public and the media; the context of the broadcast information which may affect the interpretation of the message; media literacy – the ability to critically analyze and interpret media content, aiming at navigating a huge number of information sources and being able to tell the reliable information from the fake one. Understanding the communication process in the media landscape is aimed at helping to make grounded decisions on the information consumed and building discussion platforms on the role of the media in the society, their adherence to ethical codes and value guidelines. Therefore, considering these issues helps developing relations of information production and consumption, which is the focus of scientists and practitioners all over the world, in particular: K. Barzilai-Nahon, S. Bowen, D. Watts, E. Erzikova, A. Zerfass, D. Krueckeberg, H. Kurtz, M. Latzer, K. Marsden, A. Moreno, D. Tambini, R. Tench, D. DeIulis, N. Just. Domestic scientists also pay a lot of attention to issues of ethical regulation of media activity, in particular journalistic ethics, but unfortunately, at the legislative level, even in the new Law "On Media" No. 2710-IX dated November 3, 2022, issues of ethical regulation in the media are not outlined, although V. Ivanov with a group of scholars of Taras Shevchenko National University of Kyiv, Institute of Journalism has been researching ethical codes, axiological foundations of journalism and the development of media literacy relations for many years. In particular, the founder of the weekly "Mirror of the Week" V. Mostovoy in his joint work with S. Shturhetskyi *(Ivanov V., Shturchetskij S., 2011: 8)* "Practicum on journalistic ethics" states: "professional ethics is like a security net, and for a journalist it is like a vestibular function that enables one navigating, keeping upright, moving with the straight back".

It is clear that not only journalists should take care of the media space protection but also other representatives of the media community, who do not only inform the audience of events and phenomena, but, in our opinion, should also educate this audience, instill aesthetic taste, propose ideas for reflection, form cultural trends to improve the quality of life and health. Bare naturalism has never been an aesthetic model, as it is important for a person during a creative process to generate forms and meanings bringing pleasure to the senses, inspiring, captivating, giving understanding of perspective, not, merely, reflecting a dry fact.

Taking into account the duties of traditional and mostly interactive media, it is worth taking a close up at the activities and functions of the "guardians" of the communication process, which contribute to forming the media responsibility, and to some extent, reflect morality – a subject that examines the connection between the broadcast content and social behavior.

2. Spin-doctoring as a tool for managing information messages

The modern communication process, actively overcoming the limitations of the information space, has evolved due to the development of spin-doctoring methods which conceptual foundations play an important role in forming the information landscape and influence the public perception. The boost of global interest in spin-doctoring technology while managing information and communication policy indicates a growing emphasis on strategic communications and message exchange, for spin-doctoring methods are often used both for crisis communication and reputation management.

Since spin-doctoring technologies are becoming more and more common, the need for media literacy and accountability mechanisms is growing as well therefore we suggest returning to the primary meaning of the concept "spin doctor".

When considering the technology of spin-doctoring it is worth recalling the year 1984, the debate between Ronald Reagan and Walter Mondale on which outcome the term was firstly used in the "New York Times". It meant highly qualified public relations specialists who offered journalists to use ready-made interpretations for describing certain events. Particularly, in the context of such offer to journalists we should recall the most often mentioned spin-doctor Howard Kurtz, who began his career believing that journalism is clean – and media professionals are engaged exclusively in the service of the public, searching for the truth – and, unfortunately, came to the opposite conclusion, which led him to switch from journalism to spin-doctoring.

We come across the information everywhere in modern literature that H. Kurtz *(Kurtz H., 1998: 211-223)* has written the book "The Spin Cycle: How the White House and the Media Manipulate the News" and this publication is a desk book for spin-doctors. But the fact that he regrets in a way, about the need of using templates and the labels applied by spin-doctors and that the patterns can be used for the benefit of increasing the public responsibility of the nation, is unfortunately not often mentioned. This book describes strategies of "convincing feminists to support a not-so-spotless leader, Democrats to smear a young woman, and journalists to ignore a scandal and report as if the indictment was a special scandalous scheme to vilify a decent man".

Thus, we can conclude that despite the positive idea under the concept of doctor and the prefix spin, which is not completely comprehensible for common people spin-doctoring in the classical sense is considered a synonym of political manipulation with the help of modern media. It involves using a rich arsenal of specific methods and technologies affecting people's minds: publication of favorable messages, formation of certain emotions in the target audience with the help of visual means or verbal images, etc. All of these techniques are different in their impact and content, but they have one thing in common: they all are aimed at creating a certain emotional mood and psychological attitudes. The main material with which spin-doctors influence the public's perception of an event is information, or more precisely, the management of information flows. Therefore, a spin-doctor has to deal with news management, i.e. presenting the event favorably for the customer, and correcting the coverage of the event in the media after the information development has acquired an adverse effect.

Currently, quite an interesting issue is discussed in media discourse: to what extent spin-doctoring is justified from the point of view of politics, corporate management whereas, to our mind, the most important aspect is the impact of spin-doctoring technology on the final audience, on the public. From this perspective, we find useful the study of our compatriot H. Pocheptsov *(Pocheptsov H., 2008)*, who was one of the first in our territory to start studying the issue of spin-doctoring. His works carefully examined as well as exploration of the British researcher D. Watts *(Watts D., 1997),* who offers 5 stages classification of PR spin-doctoring technology: 1) pre-spin – preparation before the event; 2) post-spin – polishing the event; 3) tornado-spin – an attempt to divert public interest in another direction; 4) spin-control – management of events that get out of control; 5) spin-down – management of events that are no longer under control to prevent further losses enable understanding appropriateness of spin-doctoring in the corporate sector in crisis times.

Spin-doctoring technologies, when used correctly, allow finding ways of effective, fruitful and effective communication with the public. The main strategies and methods of spin-doctoring in the context of managing information flows in various types of organizations in periods of crisis threat or its development having been considered showed that in situations of crisis and reputational risks, spin-doctoring specialists cannot do without spin-doctoring technologies to

effectively solve communication tasks and level negative outcomes. Therewith, it is desirable they should adhere to not only corporate standards and the desire of ensuring one's own reputation, but also take care of it (reputation) for the future, accounting for all ethical norms, rules and codes.

3. Gatekeeping and its key effect

Today, significant changes in information consuming are specified by the diversification of Internet platforms, the evolution of gadgets, etc., that raises a number of issues, including: information overload, misinformation, sensationalism of headlines, filter bubbles and echo chambers, censorship and propaganda, responsibility, etc. Although the Internet offers access to a large amount of information, it also develops problems related to the reliability and quality of this information. The evolving media landscape requires the society to be vigilant, critical and responsible consumer of information in order to make informed decisions and reduce the risk of misinformation and manipulation.

The task of providing the society with "clean" information is laid, to some extent, on the gatekeepers, whose activities are aimed at defining the agenda, choosing the forms and channels of specified topics broadcast, as well as forming public opinion and analyzing the impact of information on the audience. Let's recall the primary use of the concept "gatekeeper" by D. White *(White D., 1950)*, precisely for news study, when in 1950 he was studying the articles of a city daily newspaper for a week trying to come to a conclusion about the principle by which the editor filtered the information. So, despite the fact that the term was introduced into scientific use by K. Levin in 1947 *(Levin K., 1947)* which meant protection principle in general, it was D. White *(White D., 1950: 28)*, who adapted it to the media sphere, developing the concept with one "main filter" that passively refers to the information flow.

In our opinion, this concept is not perfect, because according to it, the control process is nether protected from prejudices, editorial judgments and the influence of media owners or political plans, or takes into account the peculiarities of the socio-political system, ideological and socio-cultural context, as well as factors of the institutional order *(Mytko A., 2014: 47)*.

By the above studies, we can conclude that with a fairly responsible mission, the activity of a gatekeeper as well as a spin-doctor is faulty in some points for the information filtered by them may only look like a manifestation of someone's deeply personal preferences. Accordingly, in order to establish effective gatekeeping, a combination of skills, ethical considerations and responsibilities is expected including:

– knowing the basic principles of journalism, in particular accuracy, honesty, objectivity and transparency;

– awareness of the covered topic as well as other views on it and technologies;

– the ability to assess the informational value of stories and understanding of the criteria for selecting relevant and meaningful messages for the audience;

– compliance with ethical norms and moral principles in the media;

– verifying facts and sources of obtained information;

– striving for diversity and inclusiveness in news coverage;

– providing balanced coverage, presenting different views on the problem;

– avoiding sensationalism, bias and excessive emphasis on certain aspects of broadcasted information;

– taking into account the interests and needs of contact groups.

– media literacy and critical thinking;

– adaptability to today's conditions and widespread digitalization and various digital platforms;

– self-reflection and evaluation of the decisions taken from the point of view of principles and standards.

Observing the main relations of a gatekeeper's activities requires being dedicated to the fundamental values of a media specialist, continuous self-improvement and a deep sense of responsibility for providing accurate, fair and valuable information to the public.

In general, gatekeeping is a fundamental function of media on the whole and journalism in particular. It helps maintain the quality and integrity of news reports while guiding the selection and presentation of information to the public. However, it is important to recognize that gatekeeping is not granted from challenges, including potential bias and the influence of various factors on editorial decisions.

4. The news-ombudsman is the founder of the media ethics

In contrast to the previously mentioned "guardians", as well as to monitor ethics and morality in the media environment, the news-ombudsman institute has appeared, namely, the Organization of News-Ombudsmen and Standards Editors (ONO) – a modern international non-profit organization whose members are representatives of readers, journalists, editors from all over the world for implementing standards in both traditional and interactive media. Employees of this deal with complaints from consumers of various forms of information (textual, visual, audio) and resolve conflicts between them and the media. As a rule, each specialist is a member of the news-ombudsmen institute runs their own column or a communication channel, where the conflict situations are analyzed. He often considers complaints in a pre-trial procedure that could end up in court proceedings. Today, there are only a few dozen media in the world that have news-ombudsmen service.

For precise understanding the functions of the news-ombudsman, let's consider the history of this concept, because it reveals the essence of the activity of both individual ombudsmen and the entire institution of media regulation. A detailed description of the history of a news-ombudsman phenomenon can be found in the "Guide to media self-regulation", compiled by the representative of the OSCE Office for Media Freedom Myklos Harasti *(Harasti M., 2008 : 64)*, where he notes that: "ombudsman" is a Swedish word ("representative") that has become popular in other languages as the name of a mediator who examines citizens' complaints. It was first used in the press by "the Courier-Journal" newspaper in Louisville in 1967, which assigned the local head office of information to regulate interactions between readers and journalists. Then, in 1970, the management of "the Washington Post" newspaper set up a department under the leadership of the deputy editor-in-chief, in which readers' complaints were considered, internal memos were drawn up based on the results of such consideration, columns where the readers could express their unbiased opinion were published. Gradually, the system was being improved by integrating into interactive portal that enabled much easier and faster providing comments, receiving posts, critical remarks about errors, as well as giving feedback to the readers *(Ulen. G Smith, 2008: 78)*.

What is the main task of the news-ombudsman and how their activities comply with the media ethics? It is the media ombudsman who ensures respect for the rules and customs established by the mass media they (ombudsman) represent providing a kind of internal quality control. This means having a contract with the audience on:

• providing the most accurate, complete and comprehensible information;

• clear separation of information and comments;
• correcting the errors;
• reflecting pluralism and diversity of opinions;
• ensuring non-violation of human rights and respect for privacy.

It is the news-obmutsman who tries to find mutually satisfactory solutions to complaints, for their further coverage, as such solutions will contribute to the fact that not only the editors of traditional media will work even harder to comply with ethical standards, but also amateurs, in our opinion, will begin to apply in their materials, at least, generally accepted ethical and moral codes *(Ulen. G Smith, 2008: 80).*

We would like to emphasize that modern media enthusiasts (bloggers, influencers) often forget that financial success obtained at the expense of hype is not a long-term chewing gum, especially today, when the question of organizing an "ethical police" in the media based on the news-ombudsmanship institution is risen not only at the national level or in individual news-rooms, but also among the bloggers more responsible towards their profession that critically impact the consciousness of the society as a whole. After all, today, a socially active Internet audience needs reliable and accurate information to obtain an objective picture of the world and make informed public decisions. Additionally, this audience plays an important role in the system of ethical regulation: it reacts positively or negatively to publications, leaving the comments and refutations (in case of an error). Such practice gives rise to a fundamentally different approach to media ethics. The openness and interactivity of the media resource becomes an important component of regulation. Where the author has crossed the line, the society acts as an ethical barometer, reacting to it with likes, critical remarks, and retorts.

5. Conclusions

In conclusion, we want to focus on the fact that most of the ethical principles developed during the last century were oriented towards the commercial model of mass media. It certainly had its pros and cons. On the one hand, in a number of countries with totalitarian regimes and an active role of the state in media regulation, the political doctrine often affected the ethical norms of the journalist's behavior. The economic motivation of his activity limited his freedom of expression. Today, an amateur journalist often has no financial incentives which in a sense makes him less dependent on external factors, such as, for example, editorial policy. But, unfortunately, this freedom extends as far as the lack of understanding of the civil or legal responsibility of disseminated information.

Recently, a lot has been done at the national level for improving the quality and ethical standards of the media, namely, by the body of self-regulation of the work of journalists and editorial offices in Ukraine (Journalistic Ethics Commission), the Code of Ethics of the Ukrainian Journalist was proposed in 2004, revised and edited in 2013. This code contributes to the support of projects aimed at editorial independence, ethical management, transparency and building a self-regulatory trustworthy system.

Thus, it becomes obvious that the era of socially responsible journalism has not yet set in, but traditional and interactive media, as well as their representatives such as news-ombuds-men, should start a dialogue to develop unified mechanisms of ethical regulation, to determine the balance of the interests of the society and the media. The latter, having a huge social influence, are a formative factor in the development of the global information space. And what level of democracy and objectivity it will be endowed with depends, to a large extent, on the relevant activities of spin-doctors, gate-ekeepers and news-ombudsmen.

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CROSS-CULTURAL MUSICAL TRANSFORMATION:
SHAPING CHINESE TRADITIONS

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Summary

This article endeavors to thoroughly examine the processes of Western influence on Chinese musical culture, focusing on the perspectives of prominent figures within the Chinese composer-performer tradition. Specifically, it highlights the role of Westernization as a means of shaping musical concepts in the works of Fei Shi, Ou Man, Qing Zhu, and Zeng Zhizhi. Furthermore, it acknowledges that a substantial number of music scholars pursue education abroad with the intention of delving into Western musical experiences and engaging with the resources of Western musical culture and the arts. Upon their return, whether they adopt a "Westernized" or "reformed" approach, they are actively contributing to the practical development of their own musical culture and innovative musical ideas. It is revealed that the processes of Westernization primarily occurred through the efforts of individual representatives within the Chinese community. The article highlights their practical actions involving the adaptation and creation of contemporary styles and forms within Chinese musical culture.

Key words: Western influence, Chinese musical culture, Westernization, Prominent figures, Musical concepts.

1. Introduction

Statement of the issue. In the contemporary era, China is actively engaging in communication with various countries across the globe, spanning a wide spectrum of economic, cultural, ideological, and political domains. This interaction extends to areas such as music and art. With shifts in its national policies, China has embraced greater openness to the world. A considerable number of Chinese students are pursuing education in foreign countries to gain exposure to new fields of science, fresh cultural perspectives, and novel ideas, with the aim of enriching their national outlook and contributing to the advancement of their nation. Simultaneously, in today's globalized society, a pertinent question emerges regarding the impact of Western musician on Easter musical culture.

Research analysis. Through a comprehensive examination and scrutiny of the contributions made by Chinese music pedagogues in historical contexts, a particular perspective has emerged among scholars. It posits that Chinese music culture and art exhibit distinctions in structural aspects compared to their Western counterparts. This article offers an alternative viewpoint. Drawing on the legacy of musical traditions handed down by predecessors, it substantiates that the evolution of Chinese music is marked by an eclectic developmental trajectory.

In the realm of musical artistry, the early 20th century witnessed a convergence of Chinese and Western musical influences, giving rise to innovative compositions and significant theoretical treatises *(Bian Mei, 1996: 34-37)*. Concurrently, as Chinese students increasingly

pursued education abroad, Chinese music began assimilating external ideas, thereby foster-ing the growth of indigenous musical forms. This endeavor, propelled by extensive research undertaken by precursors, notably facilitated the assimilation and practical implementation of polyphonic choral music and fundamental music theory within China.

Subsequently, individuals garnered invaluable educational experiences. The pioneering foreign students who spearheaded the infusion of Western musical culture included Shen Xin-gun – who studied in Japan in 1902, Li Shutun – Japan, 1905; Zhen Zhixin – Japan, 1901; Gao Shaotian, Fen Yaxun – Japan, 1905 and others. "In the year 1840, the Opium War jolted ancient China from its slumber, a state in which it had been dreaming of the "Celestial King-dom" *(Terner, 1983: 56)*. Some Chinese began to recognize the power of their adversaries and the advanced weaponry and technology of the West. As their eyes opened to perceive the world, a group of insightful individuals sought to elevate the nation by learning from the "barbarians" in order to guide them for the salvation of their country. These forward-think-ing individuals embarked on a mission to propel the nation to a new level. Wei Yuan's book "Illustrated Treatise on the Maritime Kingdoms" systematically introduced Western science and technology and advocated the idea of "learning from the barbarians to control the barbari-ans" *(Tan, 2014: 56-59)*. Subsequently, the Westernization Movement transformed the concept of learning from the West into practical implementation within Chinese society.

The purpose of this article is to ascertain the influence of Western musical culture on the development of Chinese music by examining the insights and ideas put forth by Chinese musicians.

The research methodology involves the application of systematic-structural and analyt-ical methods to identify the dynamics of changes in the context of the westernization of Chinese art. It also employs the functional method to investigate the transformations that have occurred in this process and the role of the traditional component within its structure.

According to this, the research tasks have been defined as follows: to conduct an analysis of the history of the Westernization of Chinese art, including music, taking into account key events, figures, and trends; to study the influence of Western music theory and practice on the development of Chinese musical tradition and compositional methods; to analyze the activities of individual artists in the context of the researched issue.

2. The influence of foreign musical currents

In the realm of music, Western musical culture began to proliferate in China alongside the expansion of Western churches during the era of colonialism. The missionary activities conducted by Christian churches in China, along with the establishment of missionary schools, served as pivotal means of disseminating Western music in the country. Chinese intellectu-als recognized the advancement of Western music education and its culture *(Bian Mei, 1996)*. In 1896, Emperor Guangxu sent a considerable number of foreign students to Japan. Subse-quently, the number of foreign students studying in Japan sharply increased in the following years. Some historical documents record that the peak of education in Japan for Chinese stu-dents occurred in 1906 *(Wang Yue, 2005)*. This period was viewed by the Chinese as a form of Western education in the East. During this period, after returning from their studies abroad, stu-dents utilized Japanese, European, or American melodies to blend with their own lyrics when composing songs. An illustrative example is the original "School Music Song". The dissemi-nation of "school music" compelled the widespread popularization of Western music theory in China as well *(Lyan Khaydun, 2005)*.

Since then, the number of Chinese scholars traveling abroad has gradually increased. They engage in the interpretation of what they have seen, felt, and learned. Some scholars also exhibit a keen interest in foreign musical culture. They collect foreign documents, acquaint themselves with Western musicians, and delve into music theory from the West. Thus, the development of contemporary Chinese cultural policies has played a pivotal role in facilitating and expediting the process of modernizing Chinese musical culture.

At the outset, the musical concepts of Chinese musicians began to take shape predominantly during their educational experiences in Japan. During that period, musical education in Japan was heavily influenced by the adoption of advanced musical ideas from Europe and the United States. Consequently, Chinese musicians who studied in Japan initially experienced this influence indirectly, but gradually, Western musical ideas started to permeate China. Regardless of whether it pertained to music teaching methodologies, teacher training, the role of music, music theory, or other aspects, all absorbed the core principles of progressive Western music education.

Influence from the trends in music education in Europe and North America during the 18th and 19th centuries played a certain role, particularly in the ideological aspects, in shaping contemporary Chinese music educators *(Terner, 1983)*.

In the 18th century, Europe was undergoing a gradual dismantling of the feudal, slave-based society, and concurrently, the Enlightenment movement was gaining momentum. The Enlightenment era involved a struggle against feudal serfdom and attempts to build a new capitalist system. As capitalist economics developed, there was a swift rise in people's demands for cultural and entertainment activities, including music, and a growing appreciation for musical education, which rapidly evolved during this period. During this epoch, European music progressed most rapidly and flourished in countries such as Great Britain, France, Germany, and Italy. Similarly, American musical education was also quite advanced and continued to develop during this era.

3. The new generation of Chinese musicians and their thoughts

During the 18th and 19th centuries, European and American musical ideologies were at the forefront in terms of educational concepts, teaching methods, resources, and teacher training. This had an impact on certain Asian countries and, to some extent, influenced modern music education in China, especially among students who studied abroad, playing a pivotal role in the development of contemporary Chinese music and education.

Many Chinese students traveled to Japan to study music in both specialized music institutions and regular schools. After the establishment of the Republic of China, some of them ventured to Europe, the birthplace of Western music. Figures such as Xiao Yumei, Wang Guanci, Zhenzhu, Huang Ji, and others received comprehensive and systematic musical education in Europe and America. Whether in Japan, Europe, or the United States, Chinese scholars eagerly and tirelessly delved into Western musical art. During their studies, they made choices not only based on personal preferences and hobbies but also with the idea of grasping the current state of musical art, which could uplift national spirit and safeguard the country from potential threats. Most of them later became advocates and founders of compositional schools and music education in contemporary China, aligning with their initial goals and motivations for studying musical art. Here are some representatives of these new contemporary Chinese musicians.

4. Westernization faction

Fei Shi, Ou Man, Qing Zhu, Zeng Zhizhi, and others believed that the central concept lay in pursuing full Westernization and creating universally beautiful music that could be understood worldwide.

Fei Shi, Chen Shi (1884–1959), published "The Theory of Perfecting Chinese Music" in 1903, an essay in which he strongly criticized the shortcomings of traditional Chinese music. He argued that traditional Chinese music was 'desperately devoid of the spirit of progress and asserted that both ancient and contemporary Chinese music had nothing to offer. He advocated for the complete adoption of Western music and Western music education in China, using the energetic implementation of Western music education in Japan after the Meiji Restoration as an example. He stated that Western music is beneficial, and it can promote the idea of national progress. "Fei Shi believed that both Japanese and European music should be fully embraced and incorporated. He emphasized, 'Only by uprooting the old can we introduce innovation, and only after music is fully Westernized can China's national character be improved'"; for this reason, he firmly stressed, "so I must change my words regarding the issue of perfecting music, saying: "Western music is good, Western music is good!" *(Berger & Hsiao, 1988: 53).*

Chen Shi's musical theory, proposed in the early 20th century in the Chinese music industry, was dubbed as 'total Westernization.' The style and tone of his articles, which denigrated traditional Chinese music while praising Japanese and Western music, were highly intense and representative of the typical debates within the Westernization school at the time. It was a stance of "belonging to the minority, not the majority" *(Bian Mei, 1996).* He criticized China's feudal hierarchy based on the 'three, six, nine' system and believed that music should belong to the masses. Therefore, he advocated for the development of Western instruments that were 'simple but not simple,' meaning they had a complex appearance but were easy to play, and people could understand their sound on a profound level. Western music, in his view, had a positive spirit. Western music could alter a person's character.

Chen Shi's musical theory, introduced in the early 20th century within the Chinese music industry, can be described as "complete Westernization".The style and tone of his articles were highly intense, denigrating traditional Chinese music while extolling Japanese and Western music. This approach typified the debates within the broader Westernization movement of that era. Chen Shi advocated for a position of "belonging to the minority, not the majority" *(Bian Mei,1996).* He criticized China's feudal hierarchy, particularly the "three, six, nine" system, and argued that music should belong to the masses. As a result, he called for the development of Western instruments that were "simple but not simplistic", meaning they would have a complex appearance but be easy to play, allowing people to grasp their sound deeply. Chen Shi believed that Western music had a positive spirit and the potential to influence a person's character.

Zeng Zhizhi (1879–1929), also known as Zelin, was a Chinese music educator and theorist. He was born and raised in Shanghai. During his studies in Japan in 1901, he became interested in the new Japanese music, leading him to enroll in the Tokyo Conservatory. Zeng Zhizhi was deeply influenced by the discursive environment of Japanese music education during the Meiji period. While in Japan, he actively participated in cultural activities and organized various music events. Upon his return to China in 1907, he focused on promoting Western music theory in China, making a significant contribution in this regard. Zeng Zhizhi founded an orchestra with nearly 40 members, becoming the first relatively comprehensive Western-style orchestra established by Chinese individuals in modern China. He emphasized the idea of "creating new music for China". In his translation and publication of the "Preface to the Music Textbook" in

1904, which marked the initial stage of the "school music song" period, he proposed moral and intellectual education, aesthetic and parallel physical education, highlighting the educational function of music.

Zeng Zhizhi's musical ideas were mainly formed during his studies in Japan. He believed that music was all-powerful and played a positive role in advancing education, politics, family life, and the cultivation of human nature. Zeng Zhizhi argued that Western theory served as a prerequisite for the study of music, composition, instrumental music performance, and vocal singing. He was the first music educator in my country to propose the simultaneous development of moral, intellectual, physical, and aesthetic education.

5. Conclusions

Through the analysis and exploration of the personal thoughts and works of Chinese musicians, this article demonstrates that the development of Chinese music does not occur in isolation. This article also affirms this perspective. Since the emergence of religion, wars, and waves of studying abroad in China, Western music has had a subtle influence on the development of Chinese music, contributing to its growth and refinement, significantly enhancing the international presence of Chinese music.

The development of the musical culture of any nation, whether it is Eastern or Western musical culture, cannot be isolated; it forms and evolves gradually through repeated interactions, exchanges, and fusion over an extended period. Chinese musical culture in the new era must continue to inherit and deepen the materials of traditional musical culture while absorbing nourishment from global musical culture, primarily Western. All forms of musical compositions, performance styles, languages of musical art, and more are affected. A large number of musicology students studying abroad do so to learn from the musical experiences and artistic resources of Western musical culture. Upon returning from their studies, regardless of whether they are "Westernized" or "reformed," they are on the path of practically developing their own musical culture and ideas. They are all influenced by the techniques of music creation based on Western music theory. Therefore, refining the concepts of Chinese musical thought and its cultural foundation provides enormous space for the development of Chinese music.

Under the influence of Western musical culture, contemporary Chinese music has not only retained its unique direction but has also risen to new heights by absorbing the advantages of Western music. In modern China, there is a complete practice of combining Chinese and Western music theory. For instance, the music theory used in college entrance examinations adopts the Western system of music theory, and Chinese compositions also appear in tonality analysis.

The development and integration of Chinese music with Western music theory have been beneficial, enriching the diversity and creativity of Chinese music. This blending of cultures continues to propel the evolution of Chinese music in the global context.

Chinese students have made a significant contribution to the exchange of music and culture. Upon their return from studying abroad, they brought back countless advanced and wonderful Western musical cultures. They closely linked these advanced cultures and new artistic expressions with traditional Chinese ones. The fusion of musical culture and art in our country has reached new heights, promoting the development of musicology in China. Thanks to them, we see how the dawn of the Chinese nation joins the global music stage.

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HIGHER EDUCATION DURING THE WAR TIME IN UKRAINE

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Summary
The war in Ukraine has changed the life not only for the Ukrainian citizens, but also the people all around the world. The first days were incredibly awful and the disaster was so huge that nobody (nor lecturers not the students) could even think about the process of studying. The fight for surviving has begun.

Two week in the beginning of March, 2022 were out of studying (all the students had so called "unexpected vocations"). It is clearly that many foreign students gave up studying in Ukraine after the 24th of February, 2022. But, in spite of our grief, even a lot of foreigners desired to continue online studying at Ukrainian universities. There are many students who gave up studying in Ukraine not believing in future perspectives here.

In the condition to save the life Ukrainians have to continue their everyday work to avoid economic and social collapse in the country in all spheres of agriculture, industry, education, culture, etc.

The war time makes us change a lot: widen the methods of distance learning, differentiate the individual studying, using different psychological methods to avoid panic attacks during air alarms in the period of classes, often blackouts in almost all regions of Ukraine, etc. As a result, we have to provide the online studying to supply educational service even in the war time to save the university structure, the working positions, to prevent scientific potential being destroyed.

Key words: foreign students; war time; Ukrainian language; distance studying; online education; higher education institution.

1. Introduction

Foreign citizens can study in more than 240 institutions of higher education in Ukraine and obtain higher education in various specialties. The main languages of study at the Higher Education Institutions of Ukraine are Ukrainian and English. Every year, educational institutions of Ukraine invite students from more than 150 countries.

The state enterprise "Ukrainian State Centre of International Education" (USCIE) takes care of foreign students who are getting higher education in the higher education institutions of Ukraine. The enterprise was established in 2003 and belongs to the sphere of management of the Ministry of Education and Science of Ukraine. USCIE popularizes Ukrainian education abroad, provides informational, methodological and other support for the education of foreign students, works on the development of international cooperation, and engages in analytical activities. The Ukrainian State Centre for International Education ensures an operational exchange of information between all participants in the educational process, central bodies of executive power, and the diplomatic corps (5).

The *scope* of this research is to analyse the situation of higher education in Ukraine (on the example of Sumy National Agrarian University) for the Ukrainian students and foreigners

and predict its further development. The *goal* of this article is to point out the peculiarities of education process in Ukrainian universities in a whole and Ukrainian language studying as a part of it during the war time in Ukraine.

In this article the comparative and chronological methods have been used to demonstrate the specific changes and the real up-to-date conditions with educational process especially in the part of studying for foreign students in Ukraine.

The second aim of this article is to point out the main features of Ukrainian language studying during the war time in Ukraine to show the up-to-date conditions and program the further plans.

In modern conditions there are three ways to study in Ukraine: the e-learning and the distant studying, asynchronously with Viber and e-mail checking (this way is used because of air alarm and blackout, when the studying process is interrupted).

E-learning is a system of learning built using information and telecommunication technologies, which are widely used by both students and teachers in modern conditions. The e-learning system allows teachers and students to provide teaching courses, receive information and interact with each other only through the Internet, regardless of time and location. All coursework and communication is done via e-mail, forums, chat, or video conferencing. Some educational institutions call this type of course "fully online". E-learning can be used online or in a classroom where students take a course with an instructor but only interact with the instructor online. With such training, students have unlimited access to content and the results of the course, program or degree are provided online. On the other hand, e-learning allows students to use virtual conferencing software such as Zoom, Google Meet, Skype Meet Now, Cloud Meeting, and many others to communicate with their instructors face-to-face over the Internet *(Lohvynenko: 59)*.

Distance learning is a form of organization of the educational process that, due to the use of information and communication technologies, can be implemented both in conditions of geographical distance between the student and the teacher, and directly at the university for the formation of the student's independent activity in mastering the study program by specialty *(Kulaha)*.

The Ministry of Education and Science of Ukraine during the war time give the following definition of distant studying: "Distance learning is an individualized process of acquiring knowledge, skills, and methods of cognitive activity of a person, who occurs mainly through the mediated interaction of remote participants in the educational process ina specialized environment that functions on the basis of modern psychological and pedagogical and information and communication technologies" (Report).

Both of these methods are used during the war time in Ukraine. But some regions that are fully destroyed, have no chance to study at all: some of the students have moved to another region/state; some are studying in distance when they have a chance; the others are still abandoned.

Nowadays a lot of publications in relation to the topic of this article appear on the scientific field of different journals, papers, newspaper issues, etc. either in Ukraine or abroad. Concerning this article, they can be divided into two main groups:

1) the war in Ukraine: Institute for the study of War (ISW) – Ukraine Crisis Coverage (Frederick W. Kagan, Mason Clark, George Barros, and Kateryna Stepanenko. Forecast series: Putin's Likely Course of Action in Ukraine. Updated Course of Action Assessment); Grace Mappes, Madison Williams, Yekaterina Klepanchuk, Angela Howard, Karolina Hird, and Frederick W. Kagan. Russian Offensive Campaign Assessment, November 29) (6); *Wojciech Kosc.*

Thousands of Ukrainian students find peace in Poland (26th of November, 2022) https://www.universityworldnews.com/post.php?story=20221118120910683;

2) the higher education in war time in Ukraine: *Vasyl Kremin, Volodymyr Luhovii, et.al.* On The Work of the Departments and Scientific Institutions of the National Academy of Pedagogical Sciences of Ukraine Under the Conditions of Marital State (February-August. 2022). (Herald of the National Academy of Educational Sciences in Ukraine. 4(2). 2022); Education of Ukraine under martial law. Innovative and project activity: Scientific and methodical collection. Edited by Serhii Shcarlet. Kyiv-Chernivtsi. 2022. 140 p.; The University in Wartime: Educational Transformations (the portal of Lviv University: https://lnu.edu.ua/universytet-u-chasi-viyny-osvitni-transformatsii/); Ukrainian Institutions of Higher Education During the War (the portal of Sumy National Agrarian University: https://snau.edu.ua/ukra%D1%97nski-zakladi-vishho%D1%97-osviti-pid-chas-vijni/).

2. Foreign students during the war time in Ukraine (SNAU)

Sumy National Agrarian University (SNAU) is a young educational institution, established in 1977 as a branch of Kharkiv Dokuchaev Institute of Agriculture. Now this university is a center of agricultural education not only of Sumy region (the North-Eastern part of Ukraine), but also of Poltava, Chernihiv regions. According to the official statistics we have 6800 students, 500 lecturers (Professors and Associate Professors, Senior lecturers, lecturers).

Last fourteen years SNAU has educated hundreds of foreign students. But the situation was changed by the war on the 24th of February, 2022: Yurii Danko, the Vice-Rector for Research Work of the Sumy National Agrarian University, spoke with a wide-ranging story: "On the morning of February 24, Russian tanks crossed the state border of Ukraine. Our Sumy city is 40 km from the border, and at that moment the main question of determining what to do at this moment arose. Tanks are nearby, and we have to manage the process. I will emphasize two key points that distinguished the Sumy National Agrarian University from other higher education institutions: in addition to Ukrainian students, at the time of the beginning of the Russian aggression, 72 Chinese students and a total of 150 foreign students remained on the territory of the educational institution, who needed our support. The second key point is that we are an agricultural university, where there are biological objects that also suffer from war" *(Danko)*.

There are some peculiarities of the process organization: foreign students have left Ukraine and now they are living in the countries of Europe (Hungary, France, the Great Britain, etc.), and also in India, China, Africa. Some of them were deported before the 24th of February, 2022 and some of them were deported after (Chinese students). Many African students preferred to stay in the European countries, they began to work to have money for living and studying.

The university authority provided all necessary support for the first weeks of the war: psychological, food security, accommodation, home delivery, etc. The last group of students who left Ukraine in March, 2022 was the Chinese and Indian students.

In the beginning of the 2022–2023 studying year we have small groups of foreign students, sometimes the real number is only one student in a group. As usual they stay home (India, Africa, European countries, China, Turkey), they are safe, they support the lecturers in Ukraine, and they are still the students of SNAU.

But many students have left their universities trying to continue studying in a safer country (Poland): "In the 2021–22 academic year, there were some 36,000 students from Ukraine in Polish universities and other higher education institutions, making up nearly 42% of all foreign

students in Poland, by far the biggest group. On top of that number, there were an estimated 150 PhD students from Ukraine. In the first few weeks after the war had broken out, Polish universities received close to 5,700 applications from Ukrainians looking to become students in Poland. Nearly 100 PhD students also applied" *(Wojciech Kosc)*; Great Britain: "Ukrainian refugees studying at English universities will face the same fee status as domestic students, it has been announced. In a letter to higher education institutions, universities minister Michelle Donelan says the government is extending access to "The student support, home fee status, [and] tuition fee caps" to Ukrainian refugees who had been given leave to stay in the UK. It means Ukrainian undergraduates studying at English institutions will not be charged more than £9,250 a year – instead of international fees, which can be much higher – and will have access to student support such as loans" *(Simon Baker)*.

These two examples have showed the incredible support of Ukraine abroad from the one side and the decreasing of student number in Ukrainian institutions from the other side.

But nevertheless, Ukrainian system of higher education is still working. Through the constant blackouts nowadays in Ukraine the lecturers and the students are progressing in a studying process using also e-mailing and Viber a lot. In some way the pandemic of Covid-19 "helped" us prepare for distance and e-learning, thus, war time became anaggravation of the previous hard 2-year period. Thanks to Internet connection (Elon Musk' Star links, in particular) teaching staff provides educational service to all the students both in Ukraine or abroad.

It is unbelievable, but pandemic of COVID-19 nowadays is a way to prepare for distance studying during the war time in Ukraine. According to UNESCO, almost 1.5 billion people seeking education were forced to stay at home, as a result closure of educational institutions due to the COVID-19 pandemic.

Most of the factors affecting the quality of distance learning can be divided into:

a) factors related to the professional and personal qualities of the teacher (ability to implement online-studying, necessary competencies for the implementation of this form of studying);

b) factors related to the organization of distance education in a higher education institution (access to the necessary materials, quality of technical equipment, Internet speed);

c) factors related to the student of education.

So, the question of researching the factors affecting the effectiveness of distance learning in institutions of higher education remains relevant and requires detailed research *(Shemyhon: 118)*.

The war in Ukraine had started in 2014 by occupation of Donbass region and the Crimean Peninsula long before the brutal invasion in 2022. A lot of young people went to war, but there is great amount of potential defenders, who are not ready to die, who does not feel inner confidence about the readiness to defend their motherland at the cost of his own life, many of them don't have the ability to kill the enemy.

Thus, in such a condition our universities have overtime enrolment of students of three main categories:

1) the first year students (the second higher education) (90% -men);

2) the Master's degree students (99% – men);

3) the PhD students (75% – men).

A lot of them are studying on the commercial basis that gives additional financial support to the universities, on the one hand, but it greatly increases the number of Ukrainian students in the academic groups, on the other hand, – this is an additional burden on the lecturer. There are the examples of groups where the number of PhD students and Master Degree students is more than one hundred (130 and 115, respectively).

3. Teaching staff for foreign students during the war time in Ukraine

Before the war more than 150 foreign students were studying at Sumy National Agrarian University (SNAU). The most common and demanded faculties for the foreigners were: the faculty of Economics and Management, the faculty of Veterinary Medicine, the faculty of Civil Engineering, the faculty of Agrotechnology and Natural Resource Management. Mostly, the platform of our university was used as an open way to the European society.

Due to the decreasing of the number of foreign students the teaching staff has also been reduced (Fig. 1).
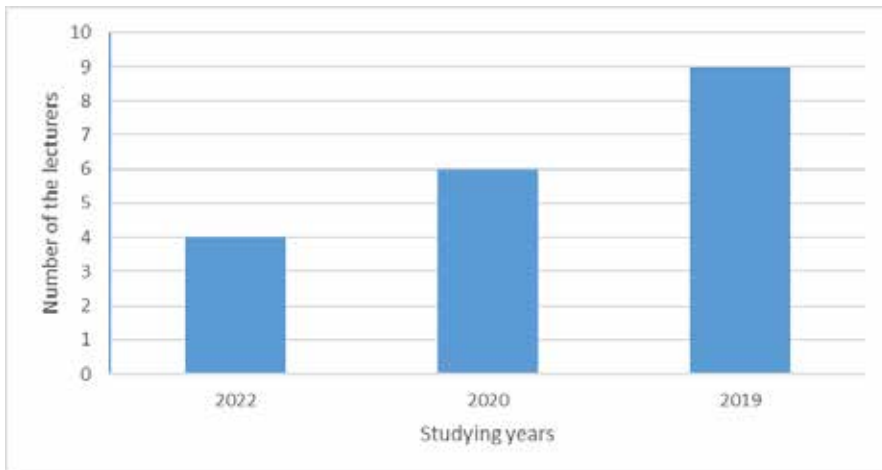
Fig. 1. Reducing of teaching staff

The reasons of teaching staff quitting were:
– the shortening of foreign student's number (the law '*no students – no teachers*');
– the growing requirements for scientific and pedagogical staff in Ukraine (every studying year – Scopus or Web of Science article, professional publications are at the expense of the lecturer; organising foreign language university contests; curator work; grant activity; methodical work (development and providing new courses and disciplines); vocational guidance work, study load more than 600 academic hours per year, etc.;
– poor management of the departments (unreliable system of student's group formation (not suitable schedule, the number of students in one group for foreign language studying can be 1 foreign student or 28 Ukrainian students and during the war time even 115 Ukrainian students in Master's degree course);
– no technical support of teaching staff (online studying is based on the lecturer's personal computers, Laptops, Internet, etc.);
– unlimited working hours, mobbing, no rights but only obligations, no university's authority protection from the fake scientific journals, etc.);
– in 2022 – the cynical attitude of the management of the faculty and department towards the staff (instead of uniting in the war time).

The first months of the war (from February to May) the half of teaching staff was forced to move to the safer regions of Ukraine, because Sumy is 40 km from Russian border (mostly, in the western part of Ukraine: Lvivska region, Zakarpatska region, Rivnenska region, but also

the Central part of Ukraine: Cherkaska region, Poltavska region). There were mostly the wom-en-lecturers with their children.

During the summer months the most part of the staff has returned to Sumy. Nowadays from the 23 lecturers only two of them are in Great Britain (Oxford and Scotland) (Fig. 2).
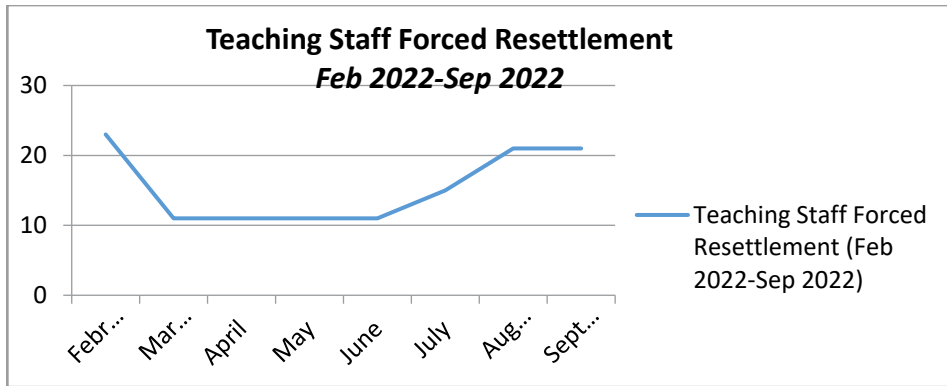
Fig. 2. Forced resettlement of SNAU Foreign Languages Department teaching staff

4. Studying process in Ukraine in war time

The Ministry of Education and Science of Ukraine introduced changes in the system of professional pre-higher and higher education long before the start of the war. These changes were significantly supplemented during the Russian aggression against Ukraine.

The table 1 below shows the main principles of non-stop work of institutions of higher and professional pre-higher education, which do not contradict the general European rules.

There are some peculiarities of the process organization: from the period of the 24th of February till nowadays foreign students are living in the countries of Europe (Hungary, France, the Great Britain, etc.), and also in India, China, Africa that causes the problem of internet con-nection and differences in time zones. The most responsible part of students is the Chinese one: at least 80–90% of them are usually at distant work (Zoom meeting, no Google Meet because of limited Google services in China). On the contrary, African students almost fully ignore the distant studying, prefer to send the home tasks through Viber and sometimes e-mails. Ukrain-ian students don't often have an opportunity to study (blackouts, poor internet connection, air alarms, etc.).

Sumy State University lecturers agreed to conduct the classes after working hours. It means they allowed students to join online meetings in the evenings (not blackout time). Of course, this initiative was not approved by university managers. Nevertheless, lecturers worked and still are working devotedly in their free time for the good of student's education.

In addition, Ukrainian lecturers used to apply their own mobile and computer devices for working and even total blackout didn't stop them from teaching. Lecturers attracted auton-omous devices (laptops, tablets, smartphones, etc.) and batteries to the studying process (dif-ferent types of generators). Thanks to separate batteries the computers had been working for two-three hours. With the help of the hot spot on mobile phones the classes were held.

Table 1

Pprofessional pre-higher and higher education

2020–2021	2022	2023
The development of the institutional environment of higher, professional pre-higher education, national qualification system		
– KPI of heads of higher education institutions was introduced; – license terms of educational activities have been updated; – refusal of state diplomas; – the application of the Formula for the distribution of budget expenditures among institutions of higher education has been expanded; – the law of Ukraine on "Professional higher education" has been implemented	– the strategy for the development of higher education in Ukraine for 2022–2032 and the operational plan for its implementation in 2022–2024 were approved; – the mechanism of the safe introductory campaign (national multi-subject test (NMST)) has been simplified; – determination of learning outcomes obtained in non-formal and informal education; – conditions for access to higher education have been created for residents of temporarily occupied and particularly dangerous territories; – conditions have been created for the preferential categories of graduates and those obtaining higher education; – denunciation of international obligations regarding cooperation with the Russian Federation and the Republic of Belarus	– creation of conditions for expanding autonomy, corporatization and privatization of higher education institutions; – development of military education, training of specialists in the protection of critical infrastructure, preparation of youth for national resistance; – consolidation of the fields of training of higher education seekers to determine the profiling of higher education institutions;
Practical assistance in the management of institutions of higher and professional pre-higher education		
– a single electronic system for monitoring the employment of graduates has been introduced; – Piloting of the Unified State Qualification Exam	– relocation of institutions of higher and professional pre-higher education from temporarily occupied and particularly dangerous territories; – an introductory campaign was conducted in the new format of testing abroad; – training of the management staff of institutions of higher and professional pre-higher education in the peculiarities of work in the conditions of martial law	– transfer of higher and professional pre-higher education recipients of preferential categories to budget funding; – restyling of the management system of a consolidated institution of higher education (Professional pre-higher and higher education)

Besides, the number of students in the groups decreased significantly, the redundancy level among the university lecturers is very high.

The usual lessons are sometimes interrupted by the air alarm.

Thus, there were some reasons for the foreigners to continue education in Ukraine:

– not all regions are under attack, relatively safe;
– the studying is online;
– advance payment and close Bachelor's or Master's Degrees.

Online studying in Ukraine still allows the foreigners to master their grammar and vocabulary skills:

– the students from China, who are studying food technologies at our university got knowledge about the phonetic system of language, trained some specific sounds; they also learn some necessary phrases of business etiquette; try to model communicative situations, etc.;

– students of the Veterinary Faculty continued to study Business Ukrainian: different types of business letters, application forms and business calls; learned some necessary business phrases about different activities;

– the foreign students of the second course improved their vocabulary on topics "Ukrainian Traditions", "Natural Recourses of Ukraine", "Studying at university", etc.

Thus, the process of studying continues, but the lecturers and the students face with three main problems:

– unstable internet connection;
– different time zones (Ukraine-Africa-China-European countries);
– often turning off the light (so called "blackouts");
– psychological pressure of war.

This studying year in Sumy National Agrarian University (from the 1st of September, 2022 to the 31st of August, 2023) is characterized by the absent of foreign students of Preparatory Faculty. Before the war that Faculty accounted from four to six groups (approximately 60–80 students) of foreigners who gained the knowledge of Ukrainian language and English language to continue their further studying at universities of Ukraine (Sumy, Kharkiv, Kyiv, etc.).

However, the number of Master's degree students and PhD students has significantly increased. It is explained by the mobilizationduring the martial lawfor the young men from the age of 21 to 65. The law of Ukraine allows not to be mobilized if you have medical permission not to serve in the army or if you are the student of day time studying at university. For now, the number of this group of students fully compensates the quantity of Ukrainian students, but doesn't change the situation with the foreigners.

As of today, December 2022, a mixed form of education has been introduced in the universities of Ukraine. In those territories, where the security situation allows, Ukrainian first-year students study in lecture rooms, observing all safety rules (bomb shelters during an air attack). But mixed form is not still allowed for the foreign students.

5. Conclusions

As a conclusion, there are some main points to underline:
1. The higher education hasn't been stopped;
2. The lack of student number was compensated by the PhD's and Master's students;
3. The teaching staff is sufficient to ensure the educational process in institutions of higher and pre-higher education;
4. The transition to a mixed form of education gives hope for the return of all students in the classrooms;
5. In accordance with the future strategy many universities will have to be privatised and financed by themselves (no state support will be available);

6. With a great help of European countries, the professional pre-higher and higher educational institutions will be faster integrated into the European system of education;

7. In the case of victory of Ukraine in the russian-Ukrainian war the system of education of Ukraine will have to be reconstructed and refined due to the European standards.

According to the current situation in Ukraine, it is difficult to assess the quality of higher education and professional pre-higher education. Fortunately, the learning process has not been completely stopped thanks to modern learning tools (distance learning, e-learning, etc.). Ukrainians are fighting not only for their lives, land, freedom but also for the opportunities to be in the family of real European society.

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LA OBRA DE MIGUEL DE UNAMUNO EN EL ESPACIO UCRANIANO: INTERPRETACIÓN Y TRADUCCIÓN

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Resumen

El conocimiento con la obra e ideario del célebre escritor y pensador español del siglo XX, Miguel de Unamuno (1864 – 1936), igual que la traducción de unos de sus textos, empezó ya a finales de los años veinte – treinta del siglo XX y continúa atrayendo a los lectores, críticos y traductores de todo el mundo en la actualidad por desarrollar y analizar los conceptos universales de la existencia humana. En este artículo nos vamos a centrar en los aspectos de la presencia de la obra unamuniana en la cultura y ciencia ucranianas, en particular, en la interpretación y aplicación de sus ideas por los intelectuales ucranianos para determinar el concepto de la nación ucraniana moderna y en la traducción de sus textos al ucraniano en corte diacrónico junto con los desafíos de la traducción. De esa manera demostrando los vínculos entre ambos extremos geográficos de la Europa.

Palabras clave: Unamuno, ideario filosófico, concepto, interpretación, aplicación de ideas traducción, equivalente, juego de palabras, defafíos de traducción.

1. Introducción

El patrimonio filosófico, poético y narrativo de Miguel de Unamuno atrajo y sigue atrayendo la atención no solo de numerosos lectores sino también de los científicos de diferentes áreas de humanidades. A escala mundial su lector e investigador abarca desde los artículos críticos sobre algunos aspectos de su obra o géneros particulares hasta unas monografías fundamentales, lo que crea un contexto amplio de discursos interpretativos. No fue exepción el ambiente intelectual ucraniano que muy a menudo utiliza algunas ideas unamunianas para aplicarlas a la realidad ucraniana y utilizarlas como ejemplo europeo de construcción de la nación. El interés puramente literario no es menor ya que las obras de este escritor constituyen el canon de la literatura española y están traducidas a muchos idiomas y la traducción al ucraniano tiene como fin de llenar el espacio intelectual literario en Ucrania.

2. Interpretación

Estando el pensador español vivo, en el periódico ucraniano de Galychyna apareció un artículo crítico, dedicado al autor español y su obra, que fue publicado en 1929 en la revista literaria "Literaturnyi naukovyi visnyk" por el autor Igor Honcharenko con el título "Don Miguel de Unamuno (cartas desde Francia)" *(Honcharenko, 1929)*. I. Honcharenko nos da una corta descripción de los ensayos filosóficos principales de Miguel de Unamuno "El sentimiento trágico de la vida" y "Agonía del cristianismo". Además, mediante la personalidad de Unamuno trata de demostrar al lector ucraniano el caracter español, ya como al mismo Unamuno se le definía el padre del pueblo español. I. Honcharenko dice lo siguiente: "Escribir sobre don

Miguel, significa entrar en el campo espiritual del pueblo español con su realismo místico" *(Honcharenko: 426)*. El autor ucraniano destaca el caracter patriótico de este pueblo lejano que tendría que servir de ejemplo para el suyo: "El español cuenta solo con sus propias fuerzas; no busca caridad ni compasión, quiere ser él mismo como lo hizo la naturaleza" *(Honcharenko: 420)*. Y todo esto para contraponer a los ucranianos con el pueblo ruso, para el cual el determinante era «nihil», de que ellos, los ucranianos, se enamoraban y lo que espantaba al autor del artículo *(Honcharenko: 426)*.

La filosofía unamuniana I. Honcharenko la presenta con real estilo de la vida humana, el estilo revolucionario activo. Esta filosofía de acción que "ataca todo lo muerto y pasivo, llama a la energía y a la lucha, por que toda la vida es ardor y agonía" *(Honcharenko: 427)*.

En el año 1938, otro artículo editado en la revista "Dzvony", escrito por el famoso poeta ucraniano Yuriy Kosach "La misión del Don Quijote y Miguel de Unamuno" también se centra tanto en la comprensión de la psíquica española como en el entendimiento de los acontecimientos en España. Demostrando los focos principales del ideario unamuniano este autor hace reservas de que publicar el artículo mencionado no significa aprobar por completo todas las ideas de Miguel de Unamuno, sino tener posibilidad de discutir con él: "Cada buen cristiano debe tener grandes advertencias y una parte amplia a negar e incluso censurar" *(Kosach, 1938: 327)*.

Este artículo se centra preferentemente en la religiosidad, es decir, en el problema de fe. Se está mencionando que Miguel de Unamuno era una persona religiosa y a veces mística y que entre sus obras hay tales que fortalecen y explican los sentimientos religiosos y, como dice en adelante el poeta ucraniano, "cualquier católico se firmaría bajo esas palabras religiosas porque Unamuno sobrepuso a la razón fría la pasión, arrebato y sacrificio, y al materialismo lo vencía con su idealismo" *(Kosach, 1938: 327)*. Aquí el autor del artículo reprocha al Don Miguel sus equivocaciones e incluso herejías, que consisten en insistir que a Dios nunca se lo encuentra y que la razón nos aleja de Dios. La intensión de Kosach es propagar la moral disciplinada: "Nuestras emociones, instintos, deseos se vuelven creativos, y no destructivos, cuando nuestra razón los dirige al cauce correspondiente" y "diferentes caminos nos llevan a Roma" *(Kosach, 1938: 326)*; y, además, es conservar la religión como uno de los pilares del estado y pueblo ucraniano. Aquí también se pone énfasis en que la Europa le descubrió a Unamuno y entendió su influencia universal; que él es un espíritu representativo de la España moderna; que es "como Carlyle para Inglaterra" o "Fichte para Alemania" *(Kosach, 1938: 328)*. Como Fichte, Unamuno quiere elevar el alma clavada de sus compatriotas mediante una alta disciplina moral conectada con las más claras tradiciones del pasado. Como Carlyle, usa ficción y lírica para que la nación, que largo tiempo se encuentra al margen de las grandes corrientes europeas, encuentre en el idealismo moderno la razón de la vida intensiva y de la grandeza *(Kosach, 1938: 328)*.

Otro aspecto del artículo es hacer conocer al lector ucraniano con la Guerra Civil española que se consideraba como una guerra cruel, colonial y liberadora a la vez. La atención del autor la llaman las voluntarias declaraciones unamunianas, especialmente las palabras sobre el espíritu de la guerra, sobre la exaltación de Alcázar o de sus caballeros desperados, etc. Ideológicamente se notan los paralelos con la situación ucraniana del tiempo de aparición del artículo crítico, a saber, la transmisión del espíritu fuerte y patriótico que si uno quiere cumplir su misión de ciudadano y servir a la patria renunciando todos los sentimientos humanos tales como el dolor, el miedo, el amor hacia la mujer. Además, se presenta el mito del Don Quijote como símbolo de un romántico y ejemplo de la cruzada contra todo lo racional o, mejor dicho, contra todo lo que impida la libertad y la vida del pueblo. Otra vez se hace transliteración al pueblo ucraniano.

El adjetivo "romántico" se atribuye al mismo Unamuno en la nota necrológica "Unamuno, caballero de la España romántica" el día siguiente de la muerte del filósofo, donde dos columnas el profesor y crítico literario Mykhaylo Rudnytskiy consiguió describir el caracter completamente rebelde y fuerte de Miguel de Unamuno. También lo igualó con el Don Quijote, ya que reflejaba todas las contadicciones del hombre moderno que no quería resignarse a la vida deformada por la lucha por los bienes materiales. Como resumen, en la nota se asegura que merece aprender el idioma español aun solo para leer las obras de Miguel de Unamuno *(Rudnytskyi, 1937).*

En la época soviética la obra unamuniana se traducía bastante y cada edición se acompañaba de prólogos detallados que se centraban en la dominante social de la escritura suya.

En el periodo actual de la Ucrania independiente empezando de los años noventa del siglo XX, a las ideas de este filósofo y escritor español recurren los intelectuales ucranianos para ampliar el discurso crítico literario y reforzar la importancia de las ideas ucranianas haciendo paralelos con los idearios de diferentes países y culturas europeos. Así es el caso de la investigación hecha por la escritora y crítica literaria ucraniana Oksana Zabuzhko, que en sus monografías "La filosofía de la idea ucraniana y el contexto europeo" y "Notre dame d'Ukraine: la ucraniana en el conflicto de mitologías" ve semejanzas entre los idearios del poeta, escritor y pensador ucraniano de principios del s. XX, Iván Frankó, y Miguel de Unamuno. La investigadora subraya que "ambos daban esperanzas sobre la vida oscura, poco clara, no fijada mediante ningunas formas de la cultura social dominante que como si fuera aguas subterraneas que corre en el grosor de las masas dormidas, inquebrantes y resistentes a los cambios políticos. Iván Frankó se alegraba que su propio pueblo, "aunque suprimido, obscurecido y demoralizado a lo largo de muchos siglos … sin embargo se pone a despertar, siente cada vez más intensamente el ansia de luz, verdad y justicia en las masas más amlias"; el segundo, el español, invitaba a sus contemporáneos a "despertar a la vida el pueblo confuse", "que vive debajo de la historia y forma su cimiento de todos su estados, su protoplasma", es decir, sacarle de su estado subconciente, "intrahistórico" a la luz de la conciencia clara *(Zabuzhko, 1993: 22-23).*

A principios del siglo XXI siguen publicándose unos artículos sueltos sobre la obra unamuniana. Se centran particularmente en algunos aspectos de la filosofía suya, por ejemplo, el artículo de Nataliya Parova "La problemática existencial en la obra de Miguel de Unamuno" *(Parova, 2004)* y el de Galyna Vypasniak "La ambivalencia de santidad en las novelas "La tía Tula" y "San Manuel Bueno, mártir" *(Vypasniak, 2014)*. En el último la autora se centra en la idea unamuniana de que la santidad no es exlusivamente unos dones pertenecientes a los religiosos sino a cualquiera que sienta y demuestre su amor por el prójimo. De esta manera, la autora ucraniana trata de invitar a su lector ucraniano a aplicar en la vida social y personal los principios morales del cristianismo que según ella carece la sociedad ucraniana, además confirma que "la religión es la continuación de la tradición, mediante ella podemos ver a los antepasados nuestros y lo que ellos creían. La religión ayuda a vivir y es parte del alma nacional, por lo tanto hace falta protegerla como un valor de significado nacional" y, además, menciona a Unamuno porque él enseña a los que le rodean a trabajar pensando no solo en si mismos sino en los que están alrededor suyo" *(Vypasniak, 2014: 11)*. El mismo tema de religiosidad pero con el enfoque en la religiosidad individual desarrolla en su artículo O. Holub "El factor religioso en la formación de la idea nacional" *(Holub, 2008)*.

Sin embargo, un amplio estudio crítico-literario de la obra de Miguel de Unamuno, que sin dudas algunas puede considerarse como una investigación monumental en el ambiente científico ucraniano, es la monografía del doctor Oleksandr Pronkevych "La nación-narración en la literatura española de la época modernista" *(Pronkevych, 2007)*. Abarcando una amplia

etapa modernista española y numerosos autores suyos, O. Pronkevych ofrece un detallado estudio del concepto de hispanidad y creación del concepto del castellanocentrismo. Y, además, explica el interés de los intelectuales ucranianos por el tema español con ello de que "son parecidas las situaciones naciogénicas de España y Ucrania, que destaca la propensión de los intelectuales de ambos países a elegir los modelos parecidos de la narración de la nación" *(Pronkevych, 2007: 199)*. Una especial atención merecen los capítulos de la monografía de O. Pronkevych que tratan de la comparación crítico literaria de los personajes y tramas unamunianas y los de los escritores ucranianos. Así, en el capítulo "Los bosquejos amorosos comparativos", en el párrafo "Científico en el laberinto amoroso: Miguel de Unamuno – Valerián Pidmohylnyi" presenta una detallada comparación entre las novelas "Amor y pedagogía" y "Un drama pequeño" donde los escritores colocan a sus personajes en una situación límite que los obliga a reconocer la existencia de los elementos irracionales en los más íntimo de la existencia humana, que expotan en el exterior y niegan la suposición teórica sobre una regularidad lógica del universe *(Pronkevych, 2007: 237)*. En el párrafo "Historias de "amores inventados": Miguel de Unamuno – José Ortega y Gasset – Viktor Domontovych" O. Pronkevych subraya que Unamuno y Ortega, concebiendo de manera filosófica el eros, examinan el "amor inventado" como un representación simbólica de la "crisis existencial", que se acompaña con la parálisis de voluntad causada por la incapacidad de amar. En la literatura ucraniana el fenómeno del "amor inventado", sin usar este término, está presente en una serie de obras del famoso intelectual y escritor ucraniano de principios del siglo XX Viktor Domontovych. Enumerando unas divergencias en la realización de los proyectos del amor inventado de tres autores, O. Pronkevych subraya que a los tres los une el deseo de utilizar la situación de enamoramiento como medio de conocer las capas más profundas de la conciencia humana para superar luego el aislamiento nacional y hacerla universal *(Pronkevych, 2007: 240)*.

Los artículos sueltos míos también se centran en la obra unamuniana, particularmente, en el análisis de las novelas suyas desde el punto de vista de la identidad personal. Los aspectos más importantes son la correlación entre lo individual y lo colectivo *(Mayevska, 2017)*, el conflicto de identidad y su constituyente femenino versus masculine *(Mayevska, 2011)*, además, los conceptos de la memoria, identidad narrativa y formas de representación de la identidad personal *(Mayevska, 2015)*.

Para la crítica literaria ucraniana ya casi se convirtió en costumbre mencionar a Miguel de Unamuno en el contexto de investigación de la novela de Miguel de Cervantes "Don Quijote". Gracias a otra monografía de O. Pronkevych "Don Quijote: novela-mito-mercancía" *(Pronkevych, 2012)* el lector ucraniano puede conocer más detalladamente una serie de focus interpretativos para analizar esta novela y entender sus personajes, en particular, su recepción en la cultura y literatura españolas de principios del siglo XX. De prueba de que el lector ucraniano va a saber de la persona de Unamuno en el contexto de interpretaciones del Quijote, sirve el material didáctico preparado y publicado en la revista "Zarubizhna literatura" *(2017)* destinada para los profesores de la escuela segundaria. Aquí, estudiando la vida y obra de Cervantes y analizando al protagonista, a los alumnos se proponen diferentes interpretaciones del Quijote, entre las cuales está la de Unamuno.

3. Traducción

En lo que se refiere a las traducciones de la obra de Don Miguel pues temporalmente coinciden con las interpretaciones. En el año 1934 Ivan Dubynskiy tradujo el ensayo "En defensa de antinomia" *(Unamuno, 1934)* que es un reflejo de la identidad personal unamuniana

y mediante este texto el lector puede obtener una imagen personal del autor y también con la elección de este texto el traductor exhorta a una acción activa y no pasiva y a la fuerza del espíritu. En los años treinta el lector ucraniano tiene información sobre las obras unamunianas, tales como "Del sentimiento trágico de la vida" y "Agonía del cristianismo", mediante los artículos mencionados arriba, y aparece la traducción de un fragmento final del poema "Cristo de Velázquez" *(Unamuno, 1938: 384)*. Su traductor Yuriy Kosach siguió la métrica del original y conservó el sentido, y es notable que alcanzó una extraordinaria riqueza en las palabras ucranianas de la primera mitad del siglo XX.

Pero la traducción más numerosa de la poesía de Unamuno se realizó en los tiempos actuales. En 1997 en la revista literaria "Vsesvit" el poeta Hrygoriy Latnyk publicó sus traducciones de las poesías de diferentes colecciones de Unamuno, a saber: de la colección "Poesías" los poemas "Montes de mi tierra" y "No me entiendes", del "Rosario de sonetos líricos" los poemas "No quiero ser víctima", "Dolor común" y "El futuro pasado", de la colección "Romancero del destierro" el poema "Adiós España", de la colección "Cancionero" los versos "Ebro, Mino, Duero, Tajo", "Cerca del cielo", "Siento el sueño eterno", "Fascismo", "Estoy lleno de vida", "Vivo con sueños" *(Unamuno, 1997)*. Los poemas traducidos se los puede dividir en dos grupos según el tema: los metafísicos y los de amor a España. Se manifiesta también el talento de traductor que no solo guarda el mismo tono emocional sino también la métrica.

Otras traducciones de la poesía unamuniana pertenecen al poeta y traductor Serhiy Borschevskiy, que tradujo "Que es la vida?", "Leer, leer vivir la vida", "Me destierro a la memoria" *(Troyanda i misiats, 2006)*.

Para terminar con la traducción de poesías en el momento de escribir el artículo, merecen ser mencionados los versos dentro de las novelas "Niebla", "Amor y pedagogía" traducidas por Olena O'Lir y Kateryna Onischuk poetizas, traductoras y críticas literarias.

No cabe duda que durante los tiempos de la URSS la obra unamuniana fue conocida al lector ucraniano por medio de la traducción al ruso.

En cuanto a la narrativa traducida al ucraniano, la primera novela de Unamuno traducida al ucraniano fue "Nada menos que todo un hombre" hecha por Mykola Ivanov en 1930 en y publicada como un libro aparte en Kharkiv. Ya en el periodo actual en 1999 Margaryta Zherdynivska tradujo el cuento "El incidente" publicado en la revista literaria *Vsesvit* y en el año 2012 en Lviv fueron editadas en un libro las novelas "Niebla", "La tía Tula", "Ábel Sánchez" (traducidas por Víktor Shovkún) y "San Manuel Bueno, mártir" (traducida por mí, O. Mayevska) y en 2016 salió "Amor y pedagogía" también mi traducción. En 2017 se publicó en ucraniano "Vida de don Quijote y Sancho, según Miguel de Cervantes Saavedra y comentada por Miguel de Unamuno" con un detallado comentario de este ensayo unamuniano escrito por O. Pronkevych y por ultimo en 2021 la traducción de la colección de cuentos "El espejo de la muerte" hecha por mí.

4. Paradojas unamunianas: complejidades de traducción

El mismo proceso de traducción de las novelas unamunianas contiene muchas trampas, tanto terminológicas como polisemánticas. En cuanto a las últimas, los más ejemplares son:

– en "Niebla" *el cenicero (Unamuno, 2012: 51)* que tiene traducción al ucraniano *попільниця/popilnytsia* que es recipiente donde se echa la ceniza mientras se fuma y *попелище/popelyshche* que es el resultado de una quema. En este caso podemos discutir con el taductor que usó el segundo significado, porque el cenicero a lo largo de toda la narración simboliza al

padre del protagonista en cuya memoria solo se quedó de cómo su padre llenaba la habitación con el humo de cigarrillos.

– en "Niebla" el verbo *soñar* con doble significado de desear algo imaginando *мріяти* y de ver un sueño durmiendo *бачити сни*, el traductor aprovechó de que el protagonista pronuncia este verbo unas cuantas veces en la misma réplica y lo traduce utilizando dos significados: "Спатиму сам один! Снитиму один! Мріятиму сам один!!" *(Unamuno, 2012: 45, 101)*.

– en "Ábel Sánchez" está la palabra *primita* que significa *una especie de pájaro* y también es deminutivo de *prima* el traductor utilizó la palabra *пташка/пташкарита (Unamuno, 2012: 257)* ya que en ucranaino así se suele llamar a una chica guapa.

A veces por parte del traductor hay tentación de intensificar las emociones del personaje siguiendo ya el tono o carácter del mismo y de estilo unamuniano o al revés de suavizar la expresión de las emociones:

– en "Niebla" *una cosa grave* fue traducida *в мене великі неприємності* y se la puede traducir de diferentes maneras, pero en la novela se trata de una simple complicación o un hecho desagradable (*складність* o *трудність*) que luego se explica por otro personaje Víctor Goti *(Unamuno, 2012: 107)*.

– también en "Niebla" *vete* que es simple imperativo afirmativo de largarse (*забирайся, йди геть з моїх очей*) el traductor exagera con *йди геть із життя* que significa *vete de la vida=muere (Unamuno, 2012: 231)*.

– en "La Tía Tula" *por puerco* que es un insulto se suaviza por el traductor con una simple *por que no le quiero ver*/*бо я не хочу вас бачити (Unamuno, 2012: 467)*.

También los términos universales o préstamos de uso común *melancólico* o *absorber* tienen más matices semánticos que la traducción simple al ucraniano *сумний* y *поглинути мене*. Por eso mejor dejar los equivalentes completos *меланхолійний* y *абсорбувати* respectivamente *(Unamuno, 2012: 126)*.

El escritor español en sus obras muchas veces juega con el concepto de géneros (masculinidad y feminidad) muy a menudo cambiando los géneros en las palabras que nunca se podría imaginar cambiadas. Por ejemplo, Otello y Desdemona que ya se tranfromaron en típos de conducta, en la novela "Niebla" aparecen como Otellas y Desdemonos, ya dándonos entender el autor que las mujeres pueden tener la misma conducta que los hombres y al revés. Y si en ucraniano la forma masculina de Desdemona suena bien la femenina de Otello no, en este caso se propone añadir las palabras *hombres* y *mujeres* a los nombres propios *(Unamuno, 2012: 159)*. Otro ejemplo, en la misma novela, cuando los sirvientes hablan con Augusto del estado de ser casado y de quien es mujer en el matrimonio *(Unamuno, 2012: 46)*. En este caso, el traductor debe saber bien la idea de deconstrucción de los papeles de varón y mujer. El sentido érotico muy velado se revela en un pasaje muy interesante, según yo, a saber: "A un pueblecito costero que tuviese montaña, dominando al mar y por este dominada" que merece estar conservado en la traducción "*Де була гора, яка владарювала над морем і море, що нею володіло*" y no "*де були гори, що нависали над морем, і море, яке підступало до самих гір*" *(Unamuno, 2012: 437)* donde en el segundo caso tenemos una simple descripción de manera realista.

Además, traduciendo a Unamuno es importante tener en la mente los tramas de las demás novelas, así es el caso de *candidato* no se puede traducir con un sustantivo abstracto *кандидатсво* sino concreto *кандидат (Unamuno, 2012: 104)* porque se trata de Apolodoro que era candidato a ser genio en la novela "Amor y pedagogía". Otro ejemplo es la frase repetida en "Niebla" dicha por primera vez por Augusto a Rosario *que me vea en ellos, tan chiquitito* y otra vez por Mauricio a Augusto *qué chiquito se ve* en la traducción se debe conservar también dos veces o *маленький* o *дитина (Unamuno, 2012: 182, 199)* pero en dos casos igual.

Las trampas terminológicas surgen porque el autor inventa muchos términos propios que están presentes en todas las novelas. De sobra (desde el punto de vista de traductor) están en "Amor y pedagogía" *melisagogía*, *cocotología*, *turrieburnismo*, etc. que gracias a que el autor utiliza griego o latín para su formación, el tradutor los utiliza también para sus equivalentes ucranianos *мелисагогіка, кокотологія, туррієбурнізм (Unamuno, 2012: 384)*. En la "Tía Tula" son los términos *domesticidad* y *domesticación* que exigen muchos esfuerzos para transmitirlos en ucraniano que ya no se puede traducir con una palabra sino con combinación de palabras *громадянське життя* y *домашнє життя (Unamuno, 2012: 384)*. En "Ábel Sánchez" aparecen *abelitas y cainitas* traducidos *шанувальники Каїна* y *шанувальники Авеля*, sin embargo mejor seguir la misma estructura de la palabra es, decir, el diminutivo de los nombres propios *авеля́та і каїня́та* y eso nos explica el mismo autor en su prógolo para la segunda edición de esta novela que esos diminutivos no significan que hay aficionados de estos perconajes bíblicos sino hay muchos tantos Abeles y Caines en cualquier lugar.

Otro aspecto importante es la tradución de los títulos de las obras que con la evolución del idioma ucraniano y con la de conocimientos más profundos acerca de la obra unamuniana. Así el poeta Yuriy Kosach, mencionado en el principio del artículo, en su texto sobre Unamuno, traduce los títulos "Любов і педагогія", "Тітка Туля", "Ніебля" y "Авель Саншез", donde en los dos últimos se ve la influencia francesa. Otro caso es la palabra *sentimiento* de "Del sentimiento trágico", este poeta no la traduce, dejando *сентимент (sentyment)*, y ya en la reciente traducción *відчуття (vidchuttia)*. En caso del término *casticismo* la traducción de O. Pronkevych ya es la explicación del término *"З приводу національної чистоти"*.

En lo que se refiere a la última obra unamuniana traducida "El espejo de la muerte" *(Unamuno, 2021)* cabe destacar la complejidad de la traducción de los cuentos costumbristas centrados en el ambiente eusquera lo que obliga al traductor a buscar equivalentes en la realidad ucraniana que aveces ni tiene correspondiente palabra en castellano.

5. Conclusiones

Es importante subrayar que en los años treinta y noventa del siglo anterior se recurría a los conceptos claves unamunianos para aplicarlos a las estrategias de formación del estado ucraniano, sin embargo que para hoy día el interés acerca de la obra de Miguel de Unamuno es de carácter literario y cultural, ya que propone un amplio campo de análisis y lecturas. Es bastante conocido entre los lectores y es parte constituyente de los cursos de literatura española del siglo XX. Y en cuanto a la traducción, si los géneros poético, narrativo y filosófico pueden ofrecer un esbozo general del ideario unamuniano, deberían estar traducidas por lo menos unas cuantas obras teatrales de Unamuno para que el lector tenga un cuadro más bien completo. En fin el interés por los textos de este filósofo español y referencias hacia su ideario intelectual y creativo por la sociedad ucraniana a lo largo de ya segundo siglo sirve de ejemplo y comprobación que Ucrania nunca dejaba de ser parte de la comunidad europea a pesar de diferentes obstáculos histórico políticos.

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SYSTEMICITY OF THE LEXICAL LAYER OF THE LANGUAGE

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Summary

The article contains an overview of approaches to the study of the concept of «field» as a marker of the immanent systemic nature of language, to the typology of field formations. In modern linguistic studies, there is a distinct tendency to study vocabulary as a complete system, which is determined in the works of T. Kosmeda, H. Mezhzherina, L. Lysychenko, O. Selivanova, O. Malenko, V. Tarasova and other famous scientists. The main proof of the systemic nature of vocabulary is the creation of special microstructures, or semantic subsystems, organized on the basis of paradigmatic, syntagmatic and epidigmatic relations. With this in mind, researchers offer various options for combining vocabulary: lexical-semantic groups, semantic fields, thematic groups, thematic classes, etc. The projection of such a position onto the lexical layer of the language actualizes the concept of lexical-semantic fields, which are united by a content commonality and reflect the conceptual, substantive or functional closeness of the indicated phenomena. In the article, we focus our attention precisely on the concept of the lexical-semantic field, since it most vividly reflects the hierarchical structure of fragments of the lexical-semantic system and expresses the relationship of traditional language categories, preserving the natural systematicity of the language phenomenon.

Key words: lexical-semantic field, lexical-semantic group, thematic group, semantic field, language system.

1. Introduction

In modern linguistic studies, there is a different tendency to study vocabulary as a complete system, which is united in the works of T. Kosmeda, H. Mezhzherina, L. Lysychenko, O. Selivanova, O. Malenko, V. Tarasova and other famous scientists. They note that vocabulary directly or indirectly reflects life, activity, material and spiritual culture. However, there is still no unified approach to the study of the vocabulary of the language at the level of revealing its systemic nature. This motivates the relevance of our research. The purpose of the publication is to review approaches to the study of the concept of "field" as a marker of the immanent systemic nature of language, to the typology of field formations.

2. Evidence of the existence of the lexical system

Vocabulary is dynamic: it reacts sharply to changes in society; it is a living organism in which certain processes are constantly taking place: the appearance of new words, the transition of words to the passive layer, the change of some meanings of lexemes, etc., which makes the study of its content and structural characteristics as difficult as possible. The structure of the vocabulary is considered in two aspects: through the systematic relations between lexical units

and through the stratification of the vocabulary, the study of which is facilitated by the methods of structural linguistics, the use of which has expanded the horizons and possibilities of analysis of this complex and extremely powerful language level.

Some researchers deny the existence of the lexical system as such, since it cannot be compared with the phonetic and grammatical systems, where there is a defined corpus of units. The lexical system is built on an extremely extensive array of millions of units. The lexical system is built on an extremely extensive array of millions of units. These units are not protected from social, cultural and material influences, therefore they undergo sudden and unsystematic changes, however, this does not affect the comprehensive systematicity of the language phenomenon. H. Mezhzherina, supporting and summarizing the above, believes that "the thesis "language is a system of systems" can rightly be attributed to the category of linguistic axioms" *(Mezhzherina, 2002: 114)*. The researcher focuses on the fact that "the first attempts to identify the general principles of the organization of language vocabulary date back to the 18th century, when V. Humboldt`s teaching on the "internal form of language" manifested a systemic and holistic view of language, and D. Didro i Zh. L. d`Alamber, when defining the main tasks of lexicology, noted the systematic nature of the organization of words in the language" *(Mezhzherina, 2002: 115)*.

The concept of system is often extrapolated to language. A system is a complete object consisting of elements that are in mutual relations. An important property of the language system is the heterogeneity and ability of its elements to undergo combinatorial transformations. In this regard, O. Selivanova notes that the language system is "a hierarchical organization of language competence abstracted from real speech activity, consisting of invariant units, structured on the basis of syntagmatic, paradigmatic and epidigmatic connections between these elements at all language levels" *(Selivanova, 2010: 659)*.

The above gives reason to believe that the vocabulary of any language is a complex system, the study of which can take place in a wide range of directions and approaches, among which two diametrically opposed ones dominate: logical (when studying the semantics of a language, scientists take into account concepts) and linguistic (word). Among the representatives of the first approach, it is worth mentioning Y. Trir, P. Rozhe, Kh. Kasares, the second – T. Kosmeda, L. Lysychenko and other scientists, on whose position we rely in our research.

Lexica is a complex and integral system, which makes it impossible to study its entire range. Therefore, scientists consider the most appropriate step-by-step analysis of individual groups, components of the lexical system, in which the field approach can be most useful, since it is within its limits that the external and internal connections of the analyzed lexical material are taken into account, which, therefore, will not violate the natural architecture of the lexicon of a certain language as such.

O. Potebnia also wrote in his early works that the laws of grouping words and their meanings must be studied. The linguist also believed that with the development of language and thinking, it is important to study the semantic series of words in close connection with the history of the people. Continuing the ideas of the great scientist, modern scientists emphasize the fact that it is necessary to clearly distinguish the actual lexical system from the lexical-semantic one. We understand the lexical system as an organized set of interconnected elements, characterized by the plurality of elements, their organization and interconnectedness.

So, the lexical-semantic system is a synthesis, the result of a complex interaction of words in their individual meanings, presented at the nominative-classification level (paradigmatics) and the level of lexical conjugation (syntagmatics).

3. The word is the basis of the lexical-semantic system of the language

As O. Selivanova notes, paradigmatics is "a type of connections in the language system that are established on the basis of variability, similarity, oppositeness, derivation, inclusion, subcategorization of linguistic units and exclude their simultaneous use in the same position" *(Selivanova, 2010: 531)*. The researcher defines syntagmatics as "an end-to-end type of connections in the language system that determines the combinatory ability of units of any level, that is, the potential possibility of their linear combination in the speech stream" *(Selivanova, 2010: 650)*. There is also a third type of connections in the language system – epidigmatics. This type of connections "is based on the associativeness and imagery of human thinking and mediates the processes of metaphorization" *(Selivanova, 2010: 152)*.

The presence of paradigmatic, syntagmatic and epidigmatic relationships emphasizes the systematicity of vocabulary as much as possible. Paradigmatic relations are related words whose meanings have a common component. Words enter into syntagmatic relations on the basis of logical contiguity of concepts and lexical contiguity. Epidigmatic relations are characteristic of the meanings of a polysemantic word.

Traditionally, three main directions of studying vocabulary as a system are distinguished: the study of lexical composition by subject groups; historical and semasiological study of the lexical-semantic group of the same or different languages; study of the semantic side of the language by conceptual and semantic fields.

So, the word is the basis of the lexical-semantic system of any language. This system is an organized set, the elements of which are connected by certain stable connections. The main features of the lexical system as a set of means of linguistic expression are: distribution of words by lexical-grammatical and semantic classes; interaction of elements of word formation; features of the morpheme composition of words; ratio of unambiguous and official words, concrete and abstract, motivated and unmotivated vocabulary; the level of openness and closedness of the main lexical microsystems; the role and semantic valence of the compared vocabularies in the respective microsystems.

4. Views of researchers on the formation and functioning of the lexical system

The boundary unit of the lexical system – the word – is multidimensional, and its significance in this system is determined not only by linguistic factors, but also by extralinguistic factors (the correlation of the word with the subject line and the sphere of functioning), which makes it extremely difficult to study their meaning spectrum by methods established in linguistics. However, the structural approach to the study of the vocabulary of the language has expanded the possibilities of researchers, as it is based on the study of separate, but united by a common semantic core, groups of lexical units. The process of generalization is at the heart of language development. As a result of this process, words are grouped according to their semantic similarity. Linguistic practice still does not accept a single name for the associations of such words: they are classified as lexical-semantic systems, semantic classes, semantic microstructures, lexical microsystems, lexical-semantic paradigms, archilexemes. However, most often they are called lexical-semantic groups.

As S. Bronskykh rightly points out, a lexical-semantic group is "a group of words that are characterized by closer semantic connections. Within the lexical-semantic group, even more closely related semantic associations (lexical-semantic categories) are distinguished – synonyms, antonyms, hyponyms" *(Bronskykh, 2012: 10)*.

The term lexical-semantic group is often used to denote verbal semantic fields. By this term, he understands a lexical association with homogeneous meanings, which is a specific phenomenon of the language, determined by the course of its historical development. This is a set of words that have close and identical meanings with different shades, differential features (synonyms). According to this approach, the main linguistic criterion for distinguishing a lexical-semantic group is the presence of semantic connections between words according to lexical meanings. The semantic fields include synonyms, antonyms, other groups of words connected by the commonality of some semantic relations. Two main ways of existence of connections between lexical-semantic groups of words are distinguished: 1) through the interaction of the entire range of meanings of one group with the range of other groups; 2) due to heterogeneous semantic connections of one member of the group with other words that are not part of this group. The basis for distinguishing a lexical-semantic group under this approach is the semantic unity of certain units – lexemes, its units must belong to one part of the language. Therefore, the definition of a lexical-semantic group as a combination of words that belong to the same part of the language and are semantically related to each other in terms of lexical meanings becomes classic.

The criterion for distinguishing a lexical-semantic group is often called the presence in one or another period of free semantic connections between words along the lines of their lexical meanings. The primary criterion for distinguishing such a unit is the word as the main dictionary unit in its multiple and complex semantic connections with other dictionary units.

According to O. Malenko, a lexical-semantic group is one of the micro-units of the lexical system, which has a systemic status, is limited to the words of one part of the language and acts as a union of logically and thematically connected constituents *(Malenko, 1996: 5)*. In addition, O. Malenko emphasizes the presence of paradigmatic series with genus-species privative types of relations within the lexical-semantic group; the relative similarity of the meanings of the members of one lexical-semantic group; common characteristics of the semantic structure; presence of nuclear and peripheral parts; commonality of distributive potentials *(Malenko, 1996)*.

In this aspect, we agree with the position of H. Mezhzherina, who notes that a lexical-semantic group is a "structural-semantic unit of language, which is characterized by the semantic connection of words and their meanings, the categorical community of lexical units, the hierarchical order of their organization, relative autonomy of units, continuity of the semantic space" *(Mezhzherina, 2002: 115)*. Taking into account the above, a lexical-semantic group is understood as a set of units of the same part of speech. The basis for distinguishing this unit is the word in its various complex semantic connections with other lexical units. Elements of lexical-semantic groups are united and connected by intra-linguistic relations.

Some scientists call the main structural unit of the vocabulary a semantic field, which denotes a wider group of words, contains words from different parts of the language, is characterized by the presence of a common differential feature in the corresponding elements. The identifier of the semantic field is outside the field and, more often than not, acts as a phrase denoting a generic concept in relation to the members of the field. The elements of the semantic field are combined by a community of non-linguistic connections and relationships.

The field is also defined as a set of linguistic, mainly lexical, units that are united by a common content (sometimes by a common formal indicator) and reflect the conceptual, substantive, or functional similarity of the indicated phenomena. A field is a grouping of linguistic elements with common properties that belong to different levels of language. If the presence of a common differential feature in certain elements and attraction are considered to be a sign of a field, then defined functionally invariant groups are defined as fields in the vocabulary.

The elements of these groups are characterized not only by the presence of a common (invariant) feature, but also by a communicative and structural function.

An important feature that distinguishes the concepts of a semantic field and a lexical-semantic group is the intra-language and extra-language conditionality of connections between the elements of one or another microsystem. The elements of the semantic field are united by a community of non-linguistic connections; elements of the lexical-semantic group are connected by intra-linguistic relations.

The semantic field contains in its composition words of the same order – either with a concrete (names of birds) or with an abstract (field of intelligence) meaning. The lexical-semantic group, on the contrary, can consist of: words denoting material objects (land); from words denoting ideal objects (verbs of motion); from words with abstract and concrete meaning.

Since the lexical-semantic group is separated from the semantic field on the basis of some polysemous word, this polysomous word is the dominant group and is necessarily part of it. Other members of the group are with the dominant in terms of synonymy. The identifier of the semantic field is always outside the field and, as a rule, is a phrase that denotes a generic concept relative to all other members of the field.

In this regard, V. Tarasova rightly notes that the semantic field is a system of words formed historically in the process of the communicative activity of a collective of speakers, united by an abstract integral seme or a community of formal indicators, to indicate a certain fragment of the picture of the world *(Tarasova, 2010)*.

One of the lexical microsystems is a thematic group. The scientist noted that words that are part of the thematic fields are united by the same typical situation or one topic. However, a common nuclear scheme is not mandatory for them.

The most important feature that distinguishes a thematic group is the extra-ordinary conditioning of connections between its elements. In contrast to a semantic field ordered by a set of verbal signs, a thematic group is a collection of material or ideal denotations (or referents) marked by verbal signs. Another important feature of the thematic group called the diversity of connections between its members and the absence of such in general. The form of arrangement of the denotations that make up the thematic group is enumeration. At the same time, various connections and inclusions, enumerations, etc. can be observed between certain elements of the set (genus-species, part-whole, etc.). The name of the thematic group is, as a rule, a word (and not an artificial entity) – education, transport, etc.

It is possible to classify vocabulary by thematic groups for different purposes, therefore, in each such case, the composition of the group will change regardless of the lexical-semantic connections of the words. Thematic groups of words can often overlap with industry vocabulary. Within one thematic group there are smaller, but closely related lexical-semantic groups.

We record the presence of a thematic class – a formal analogue of the semantic field. The impossibility of clear and unambiguous grouping of vocabulary into thematic classes should not be considered a disadvantage. Thematic classes (and, therefore, semantic fields) do not divide the dictionary into classes, but combine words according to separate linguistic meanings. This is true for all lexical units regardless of their categorical affiliation. In some cases, the boundaries of the thematic class are distinguished intuitively.

An important lexical-semantic microsystem of language is the lexical-semantic field. This term is preferred when the subject of research is the semantic organization of the lexical system. Grouping when analyzing lexemes according to different paradigmatic groups, it is more logical to consider lexical-semantic and thematic groups as constituent parts of the lexical-semantic field.

One of the main problems of studying the semantic level of language is the problem of modeling the content plan and any semantic subsystems (microstructures). The semantic model should have the ability to isolate the values included in the subsystem; establish semantic relations between these values.

5. Conclusions

Therefore, one of the urgent tasks of modern linguistic science is the study of systemic relations in vocabulary. The main proof of the systematicity of vocabulary is the existence in its composition of special microstructures or semantic subsystems organized on the basis of paradigmatic, syntagmatic and epidigmatic relations. As a result of the analysis of scientific sources, we come to the conclusion that there is no single approach to the study of the vocabulary of the language at the level of findings of its systemic nature. There are different options for combining vocabulary and, accordingly, different views of researchers on the formation and functioning of the lexical system (lexical-semantic fields, lexical-semantic groups, semantic fields, thematic groups, thematic classes), and therefore, the issue of this issue remains relevant. In our opinion, the concept of "lexical-semantic field" fully reflects the hierarchical structure of fragments of the lexical-semantic system and expresses the relationship of traditional language categories (synonymy, antonymy), preserving the natural systematicity of the language phenomenon.

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GLOBALIZATION OF EDUCATION:
VITAL APPROACHES IN STEM EDUCATION

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Summary

The article deals with the contemporary situation in education sphere in terms of globalization process, describing the key aspects of the globalization of education, as well as the main aspects of STEM implementation. The article highlights various technologies of STEM system that are widely used all over the world. Among the most common are augmented and virtual reality, artificial intelligence, internet of things and others. Much attention is paid to recourses needed for implementation of STEM into learning process. Online Courses, Educational Websites, Open-Source Platforms, STEM Education Kits, Maker Spaces and Fab Labs, STEM Competitions and Challenges as well as many others were viewed in the article.

The process of implementation of these resources and technologies was considered on the basis of "Smart Heat" educational project that can serve as a perfect example of successful combination of these approaches into educational process. It's worth noting that the selection of technologies and resources for STEM learning should align with the educational goals. They introduce practical knowledge and emphasize the importance of hands-on, experiential learning that promotes critical thinking, problem solving, and creativity.

Key words: STEM, technologies, resources, educational systems, educational projects.

1. Introduction

In our contemporary interconnected world, the necessity and importance of globalization in education cannot be overestimated. As borders blur and cultures converge, it is imperative that education evolves to prepare students for a globalized society. Embracing globalization in education is a necessity in today's world. It prepares students to thrive in an interconnected, rapidly changing global society. By using new approaches to education sphere we are preparing students for a global workforce and high competition on the labour market and facing global challenges, we equip the next generation with the tools they need to make a positive impact on the world. Globalization in education is a powerful force for progress, tolerance, and prosperity.

Globalization in education includes various aspects that affect students, educational institutions, curricula and educational systems in general. Universities and secondary education institutions set themselves the goal of improving their positions in world rankings. This stimulates competition and leads to standardization of education on a global scale. Educational programs and teaching materials are becoming more adapted to the global context. One of such

projects is STEM (Science, Technology, Engineering, and Mathematics) approach to education (*Nikitina, Ishchenko,2023*). It iswidely represented in the modern world.

Therefore, the purpose of the article is to analyze new approaches in the context of globalization of education. In accordance with the goal, the following research objectives were identified:

1. determine the aspects of globalized education;
2. analyze technologies and recourses for STEM system;
3. consider the technologies and resources mentioned in the hands-on example.

2. Aspects of globalized education

Globalization for education refers to the changes and transformations occurring in education systems due to increased global interconnectedness and interdependence. This process may encompass the following aspects:

International student and faculty mobility: Globalization of education entails a rise in the number of students and scholars moving across borders for education or research purposes.

International standards and learning criteria: With the growth of globalization, there is an increasing importance of harmonized international standards and criteria for assessing the quality of education.

Utilization of technology for educational access: Globalization of education also means broader access to educational resources and technologies on a global scale.

Multicultural environment in educational institutions: There is an increasing diversity of cultures, languages, and nationalities in educational institutions, providing broader opportunities for cross-cultural learning.

Global competition and choice of educational programs: With the development of the global education market, students have more opportunities to choose programs and institutions in different countries.

More relevant and adaptive curricula: The global nature of contemporary issues requires educational programs that can adapt to changing conditions in the global economy and society.

***Increased international collaboration in scientific research*:** Globalization fosters more intensive collaboration between scientists and research groups in different countries.

These aspects of globalization influence the ways of educational institutions organization, their activities, principles and standards they apply, and the opportunities provided to their students and scholars for international knowledge exchange and experience-sharing.

3. STEM Technologies

The use of smart technologies to support STEM education radically changes the traditional teaching system, when a teacher at the blackboard explains new material to students, and they listen and complete assignments in a notebook. Intelligent technologies make it possible for students to interact interactively with educational materials, to get acquainted in practice, and not in theory, with the laws and phenomena that students study at school. They help develop not only hard, but also soft skills, which will help them find themselves in our rapidly changing world. However, when implementing smart education initiatives, it is necessary to take into account the preferences of students, learning style, level of training of both children and teachers, etc. and consider their potential limitations. Even within the same class, children of

the same age group have different learning preferences, and an intelligent educational tool must be tailored to these preferences.

Technologies provide the necessary equipment, information and environment for effective learning and skill development in these fields. These include laboratory equipment that allows students to conduct experiments and research in scientific and engineering fields, online resources and software that provide students with the necessary information and materials to learn theory and practical skills in these fields. Access to modern computers, software and technologies such as 3D printers and robotics plays an important role in skills development and research in STEM fields. The most important resource is the development of quality training programs and curricula and qualified teachers and instructors with expertise in their fields *(Kapral I., Usova I., Maksymova A., Yefymenko T., Boyko S., 2023)*.

Here's a brief overview of new technologies that are widely accepted in STEM (Science, Technology, Engineering, and Mathematics) nowadays:

Augmented and Virtual Reality (AR/VR): These technologies immerse users in virtual environments, enhancing learning experiences by simulating real-world scenarios and experiments.

3D Printing: Enables the creation of physical objects from digital models, revolutionizing prototyping and hands-on learning in engineering and design.

Artificial Intelligence (AI) and Machine Learning: These technologies enable computers to perform tasks that typically require human intelligence, allowing for data analysis, pattern recognition, and problem-solving.

Internet of Things (IoT): Connects everyday objects to the internet, allowing for data collection and automation, leading to innovations in fields like smart homes and automation.

Blockchain: Provides secure and transparent record-keeping, with applications in secure transactions, data integrity, and cryptography.

Robotics: Involves the design, construction, and programming of robots, enabling automation in various industries and fields.

Genetic Engineering and Biotechnology: Includes technologies like CRISPR-Cas9, enabling precise manipulation of genetic material, with applications in medicine, agriculture, and beyond.

Nanotechnology: Focuses on manipulating materials at the atomic or molecular scale, leading to breakthroughs in materials science and electronics.

These technologies are driving innovation and reshaping the way STEM disciplines are taught and applied in various industries and research fields. They offer new opportunities for exploration, experimentation, and problem-solving in the realms of science, technology, engineering, and mathematics.

4. STEM Resources

Resources in STEM education also play a crucial role in building students' knowledge and skills, and in preparing them to meet current and future scientific and technological challenges.

Resources such as textbooks, online courses, labs, and software provide students with the necessary knowledge and tools to learn and practice STEM content. Educational institutions and classrooms need access to libraries, databases, laboratories and equipment to conduct research projects, and they need access to computers, software and electronic components. To support research and teaching projects, access to current scientific articles and publications is

required. The Internet provides vast online resources, including webinars, courses, video lectures, and educational platforms that facilitate access to knowledge and learning.

In addition, smart educational tools should complement the teacher, not replace him. The next aspect is choosing effective educational resources and tools to make STEM education smart. The resource should be easy to use and should not require a steep learning curve that may discourage both teachers and students from using it. In addition, it should be effective in terms of time management and not require a lot of effort to manage it. If a resource does not align with learning theories used in STEM education, it may not be effective in improving student learning outcomes. By doing this, we can use smart educational tools that effectively engage students and improve their learning outcomes.

Before adopting any resource, one should review the specific requirements, prerequisites, and age appropriateness of each resource or platform to ensure it meets your students' educational needs and goals. Let us have a close look at these resources.

Online Courses: Platforms like Coursera, edX, and Udemy offer a wide range of online courses related to "Smart-systems" and STEM topics. These courses cover subjects like robotics, AI, IoT, data science, and more, providing structured learning materials, video lectures, quizzes, and assignments.

EdX is the most sophisticated and academic platform for free distance education, a joint project of MIT (Massachusetts Institute of Technology), Harvard University and Berkeley University. Currently, several dozen leading universities in the world participate in the program *(edX, 2023)*. The EdX teaching methodology is not much different from other projects: lectures, divided into modules lasting up to 10 minutes, alternate with exercises for better mastery of the material. If an incorrect answer is received, the program analyzes the error and makes recommendations for correcting it.

EdX has an analogue of Coursera specializations – Micromasters Programs. These are a series of graduate level courses. For example, there is a micro-master's degree from Columbia University in Artificial Intelligence that costs $1,200 (4 courses at $300 each), and a micro-master's in Android Application Development that costs $1,000 (5 courses at $200 each). However, all courses without obtaining a document can be taken for free.

Educational Websites: Websites such as Khan Academy, Code.org, and STEM Learning provide free educational resources, tutorials, and activities for STEM education. They offer lessons on coding, robotics, electronics, and other related topics, suitable for different age groups and skill levels.

"Khan Academy" is a non-profit lighting organization created in 2006 by educator Salman Khan to provide "high-quality education for anyone and everyone." *(Khan Academy, 2023)*. The organization creates lectures in the form of YouTube videos. In addition to the microlecture, the organization's website provides practical activities and methodological materials for readers. All resources are available without cost to everyone in the whole world. Khan Academy provides an adaptive web system that generates tasks for students based on their skills *(Khan academy, 2023)*.

Open-Source Platforms and Communities: Platforms like GitHub and Hackster.io provide access to open-source projects and resources for "Smart-systems." These platforms allow students and educators to explore and contribute to projects, access code repositories, and collaborate with a community of developers.

GitHub is an online platform for storing, managing and collaborating on open-source projects. It is a tool that has become an integral part of modern software development and is widely used in various fields, including science, business and the public sector. GitHub's main

focus is on code management, but the platform can also be used to store and collaborate on different types of files and documents. *(GitHub, 2023)*. The platform promotes collaboration on projects.

Hackster.io (Hackster.io, 2023) is an online platform and community for Internet of Things (IoT), electronics and robotics enthusiasts. It is a place where developers, engineers and students can collaborate on projects, exchange knowledge and ideas, and find inspiration to create new technical solutions. There, users can ask questions, share experiences and find solutions for their projects, communicate with other developers and receive feedback from the community.

The platform provides educational materials, training courses and tutorials on various aspects of electronics, programming and IoT. Hackster.io organizes various technical competitions where participants can compete and showcase their projects.And most importantly for us, the platform supports interactive projects that can be implemented in educational programs and demonstration events to attract attention to engineering sciences and electronics.

STEM Education Kits: Various companies and organizations offer STEM education kits tailored to "Smart-systems" topics. Examples include Arduino kits, Raspberry Pi starter kits, robotics kits (e.g., LEGO Mindstorms), and IoT development kits. These kits often come with hardware components, sensors, and programming resources to support hands-on learning.

For example, the large 275-piece Makeblock STEAM Education Kit Robot Science offers a state-of-the-art open-source platform-based learning kit designed to teach programming with a STEM approach. UsingmBlock, a visual programming software, the kit is easy and convenient to use to introduce classroom work, practice, and create fun projects. The kit includes an assortment of sensors, electronic modules, mechanical components, 16 accompanying lessons *(Makeblock, 2023)*.

Maker Spaces and Fab Labs: Maker spaces and fabrication laboratories (Fab Labs) provide physical spaces equipped with tools, machinery, and materials for hands-on learning and experimentation. They offer resources, workshops, and mentorship for students interested in "Smart-systems" and other STEM disciplines.

Makerspaces fit right into every school and educational setting and are often found in public libraries, where large empty spaces are ideal for engaging Makerspace participants in hands-on activities that teach twenty-first century skills. The emphasis at Makerspaces is on hands-on learning for students in STEAM subjects–science, technology, engineering, art, and math–as well as digital and information literacy *(Kyiv, 2023)*.

The creation process on which the Makerspaces concept is built is a powerful tool for learning at all levels. Spaces for creation, creativity and production are considered one of the most important advances in innovative educational technologies, and are a tool for engaging students in higher-order creative problem solving through hands-on design, construction and iteration.

Fab lab (fabrication laboratory) is a small workshop that provides everyone with the opportunity to individually manufacture the products and parts they need. Such a laboratory usually has, in addition to hand tools and measuring instruments, modern CNC machines. At the same time, the task is to give a chance to make "almost everything" from "practically nothing" *(Fablab Kiev, 2023)*.

Research Papers and Publications: Academic journals and publications in fields like robotics, AI, and IoT provide valuable research papers and articles that can be accessed by educators and students. These works are a form of communication and dissemination of new research, discoveries and knowledge in these areas. Scientific articles and publications play a

key role in the dissemination of knowledge and scientific progress in STEM fields. They allow researchers to share their discoveries and evaluate and build scientific knowledge on the work of other scientists. Exploring these publications can deepen understanding and expose learners to cutting-edge research and developments in "Smart-systems."

Webinars and Conferences: Webinars and conferences in the STEM field are important vehicles for sharing knowledge, research and innovation ideas, and for training and professional development in the field. These events provide students with the opportunity to present their research and projects and also teach presentation and science communication skills. Webinars and conferences focused on "Smart-systems" and STEM education offer opportunities to learn from experts, gain insights into emerging technologies, and network with professionals in the field. Organizations like IEEE (Institute of Electrical and Electronics Engineers) often organize webinars and conferences on related topics.

Online Forums and Communities: Engaging with online forums and communities can provide support, resources, and opportunities for discussion and collaboration. Platforms like Stack Overflow, Reddit, and specialized forums dedicated to "Smart-systems" topics allow students and educators to ask questions, share knowledge, and participate in discussions.

Platform Reddit *(Reddit, 2023)* is a site that combines the features of a social network and a forum where registered users can post links to any information they like on the Internet and discuss it. There are many subreddits on Reddit dedicated to various aspects of STEM. For example, r/science, r/technology, r/math and others.

Stack Overflow *(Stack Overflow, 2023)* is one of the most popular and influential online resources for programmers and developers. It is a question-and-answer platform where programmers can ask questions, get answers, discuss technical problems, and share programming and information technology knowledge.

STEM Competitions and Challenges: Participating in STEM competitions and challenges related to "Smart-systems" can be an engaging way to apply knowledge and skills. Competitions like FIRST Robotics Competition, Intel International Science and Engineering Fair, and Hackathons provide opportunities for students to showcase their abilities and problem-solving skills.

But there are also local festivals. Family STEM festival ROBOTICA is a festival of educational innovations and modern technologies in the field of educationwhere its participants could share their work in the field of robotics, programming, and LEGO®-engineering *(ROBOTICA, 2023)*. The festival included:
– robot competition;
– free master classes on programming and design;
– innovative technologies in the field of education;
– incredible scientific experiments;
– board games area and lots of fun with LEGO® for adults and children

Local Institutions and Organizations: Local universities, research institutions, and STEM-focused organizations often offer workshops, seminars, and outreach programs related to "Smart-systems" and STEM education. Exploring their resources and events can provide valuable learning opportunities and networking possibilities.

All of these resources promote quality education and training for students in STEM fields. It is important to provide access to a variety of resources to maintain and stimulate interest in science and technology subjects and develop the skills needed for a successful career in STEM. Remember to check the specific requirements, prerequisites, and age appropriateness of each resource or platform to ensure it aligns with the educational needs and goals of the students.

5. STEM Resources Implementation

As STEM education has been a priority in many countries for several years let us take "Smart Heat" Project as an example.

Imagine, it is morning, it is still dark outside. The children entered the classroom, the lesson began. Indoor temperature is, for example, 24 °C. During the lesson, the temperature in the room may increase due to heat emissions from the students who are there, from changes in the intensity of solar radiation. Taking into account the conditions of natural insolation and infiltration in the classroom, schoolchildren, using teaching systems should

– create a model for gradually reducing the level of artificial lighting in the classroom.

– then, by regulating the heating devices, reduce the amount of circulating coolant, thereby lowering the temperature in the classroom to the optimum. Moreover, it is also taken into account that the heating system is quite inertial and a predictive calculation is required for the entire period of the lesson.

The project itself included the following sections:

1. Modernization of the heating system:

– arrangement of the weather regulation system;

– installation of microclimate control sensors in rooms, controlled thermodynamic heads on heating devices; balancing valves and metering devices could also be installed on heating risers;

– development and implementation of "Smart Heat" software in an educational institution.

2. Creation of the "Smart Heat" system. These sections

– provide for the development of software that would allow receiving data from embedded systems, visualizing the operation of these systems (levels of consumption, illumination, temperature, pressure, etc.);

– ensure the management of the operation of these systems;

– give students a tool that allows them to further participate in filling the information system with data, working with information flows, developing models and algorithms for operating the institution's power supply systems.

The next step is the presentation of the work. The best way to do this is by publishing its results on a special forum. Participation in a conference on STEM education can completely change the algorithm for completing the project, because conferences offer a great opportunity to meet and network with other professionals in the field. Students can learn about other experiences, share their own, and make valuable connections that can lead to collaborations and partnerships (*STEM Education Conferences: Top 5 To Attend In 2023)*. Conferences provide a platform for young researchers to expand their knowledge, provide an opportunity to go beyond the daily routine and explore new perspectives and ideas.

6. Conclusions

The globalization of education is a complex and multifaceted process that involves the exchange of knowledge, skills, and ideas across borders. It opens up a world of possibilities for students. By incorporating new technologies and resources such as robotics, IoT, AI, data analytics, and other related technologies into contemporary methods of teaching students can be engaged in hands-on, experiential learning that bridges the gap between theory and real-world applications and therefore make it easier to compete in labour market all over the world.

Students can also gain practical skills, develop critical thinking and problem-solving abilities, and cultivate a deep understanding of STEM concepts. They learn to work collaboratively, leveraging interdisciplinary knowledge and applying it to design and implement innovative solutions. With access to online courses, educational websites, maker spaces, competitions, and other resources, educators can provide students with rich learning experiences that ignite their curiosity and passion for learning and the very process of learning and teaching may become amazing both for teachers and learners.

These technologies are driving innovation and reshaping the way STEM disciplines are taught and applied in various industries and research fields. They offer new opportunities for exploration, experimentation, and problem-solving in the realms of science, technology, engineering, and mathematics.

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POETICAL ANALYSIS OF THE IMAGE OF UKRAINE
IN O. DOVZHENKO'S FILM STORY "UKRAINE ON FIRE"

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Summary

The appearance of the central image of Ukraine in the film story "Ukraine on fire" as the dominant character of insubordination and the tragedy of the suffering of the Ukrainian people. The image of Ukraine in O. Dovzhenko's film story "Ukraine on Fire" is an undisguised, tragic truth about the fate of the Ukrainian people during the Great Patriotic War.

The years 1941–1942 remained in history as the most difficult hours of the great grief of the war for Ukraine. This is the time when all of Ukraine was occupied by fascists. Oleksandr Dovzhenko watched all these bloody events, it was the war that served as a prerequisite for writing a film story. In these dire and terrible times for Ukrainians, the author admitted that he created it "with fiery pain in his heart and burning suffering for Ukraine, which was in German hands, with painful regret and fear for its fate" *(Dovzhenko, 1956: 102)*. Such methods as hermenevtic interpretation, descriptional, structural are used. The purpose is to discover deep meanings, carved in this film story, due to which stylistic devices author emphasizes the horror of the war.

Key words: death, war, Motherland, fascists, interpretation.

1. Introduction

The years 1941–1942 remained in history truly as the most difficult hours of the great grief of the war for Ukraine. This is the time when all of Ukraine was occupied by fascists. Houses and entire villages, young and old, cities and villages – everything was on fire, completely destroyed: "The horizons were covered with smoke. Fiery ramparts with thunder and roar rolled more than once from east to west. Dead tanks blackened the fields with their menacing carcasses, as if they were dead tanks in the desert. And where not to go, where not to go – everywhere carried the spirit of an unburied human corpse. Mined unmown fields were full of ominous secrets" *(Dovzhenko, 1990: 86)*.

Oleksandr Dovzhenko watched all these bloody events, it was the war that served as a prerequisite for writing a film story. In these dire and terrible times for Ukrainians, the author admitted that he created it "with fiery pain in his heart and burning suffering for Ukraine, which was in German hands, with painful regret and fear for its fate" *(Dovzhenko, 1956: 102)*.

But despite the most stressful days of the war, the artist did not doubt for a moment about the victory of his compatriots over the Nazis, but because of the unspeakable grief, which is like a bottomless sea, flooded his native Ukraine, Dovzhenko did not feel the sense of extravagance and joy at the arrival of victory: "The Germans will not conquer us. We cannot be conquered. No one was able to conquer us even before the revolution… It will be difficult for me to rejoice in the victory (…) The image of my unhappy Ukraine, on the fields, on bones and on tears, and whose blood was won, overshadowed everything in my soul" – he notes 6 April 1942 in his diary, *(Dovzhenko, 1956: 182)*.

Oleksandr Dovzhenko's Ukraine is always associated with a woman. In the film story, the writer constantly emphasizes the need for a steadfast struggle against the Nazi invaders who occupied his native Ukraine. In order to rally his compatriots to the "sacred and liberating" war against the fierce enemy, he searches for examples of military exploits in the glorious past.

Dovzhenko's appeals to her land during the war period are conveyed by the following epithets: "bloodied", "burnt", "broken", "ruined", "destitute in the ravages of fires", "talentless martyr". which reproduce the entire palette of sorrowful feelings, leaves behind sad memories. The war took the lives of thousands of people, the nation was divided into traitors and patriots, everything was burned, any traces of the existence of human life on this earth is a consequence of the catastrophic nature of the situation.

But as a person who constantly chose beauty between truth and beauty, Dovzhenko was still able to find the strength to see the beautiful even in the conditions of war. In the work, quite often, you can notice a huge number of landscapes, which, above all, add a touch of joy to the film story. "In a garden near a clean hut, among flowers, bees, children and domestic birds, on a quiet summer day, the family of collective farm worker Lavrin Zaporozhets sat at the table, as if in a picture, and quietly sang "Oh, I'll go to my family for a walk"" *(Dovzhenko, 1990: 1)*.

Dovzhenko's love for Ukraine is a real, genuine attachment of a devoted son to his mother. She has care, duty, and selflessness. Addressing the writer's "Diary", he noted: "I want to live in Ukraine. Not to be with me. Let them even shorten my already short summers, I want to live in Ukraine (…) I am a son of Ukraine, of Ukraine" *(Dovzhenko, 1956: 692)*. These lines convey the artist's heartache, indescribable debauchery and great love for Ukraine, the image of which is masterfully depicted in the film story.

2. The tragic image of Ukraine in the film story

It is impossible not to note that the image of Ukraine in the film story is through-and-through, that is, it develops and acquires dynamism throughout the entire work. But Ukraine, which during the long time of its glorious past was a ruin many times, is most vividly reflected in the author's lyrical digressions and appeals, of which there are a huge number in the work: "O Ukrainian land, how you hid yourself! Rivers are filled with blood, lakes with tears and pity. Bairaks and crossings with a corpse caught fire, with pus and deathly vomit. The steppes were trampled with anger, and with curses, and with longing and pity" *(Dovzhenko, 1990: 36)*.

Ukraine is, above all, Ukrainians. In the film story, they are depicted as hard-working, brave, valiant, with a primordial attraction to beauty. But at the same time, eternal slavery, which taught them not only humility, but also social ignorance and indifference. They did not create their own history, which future generations would be proud of, so none of "the glorious great-grandfathers, great warriors" were needed.

The so-called "Achilles heel" was on public display, which is skillfully used and known by everyone. Including the Germans. The author directs the results of such an analysis to the mouth of

the German general von Krause. "These people are completely devoid of the ability to forgive each other's disagreements, even in the name of common, high interests. They have no state instinct… They have been living for twenty-five years with negative slogans of rejecting God, property, family, and friendship! They have only an adjective left from the word "nation". They have no eternal truths. That is why there are so many traitors among them…" *(Dovzhenko, 1990: 28).*

The song is compositionally symbolic, because, as you know, Ukraine cannot exist without it. The song both begins and ends the film story, creating the effect of "framing" the work. Only one song "Oh, I'm going to go for a walk", which the Zaporozhian family loved to sing when they had a free day, allows the reader to hope for the best, gives optimism, despite the tragedy of the work itself. It is also a symbol of the family at the beginning of the work, and at the end – as a sign of the happy future life of Olesya Zaporozhets and Vasyl Kravchyna. Then they hugged. He kissed her hands and face. And she is. Father Lavrin, brother Roman came, Ivan Zaporozhets came, who also turned out to be a brother. And although they were all wounded, and their mother, grandfather Demyd, Savka, Grigoriy were no longer there, and the house was burned, they gathered around the oven and sang in honor of their mother:

Oh, I'm going to go for a walk

But my whole family is rich" *(Dovzhenko, 1990: 102).*

The image of Ukraine is also supplemented and concretized by the female images of Olesya and Christi, who personify the horrors of war and overcoming them by girls "in the terrible hour of the life of their people.«

Probably, the most fatal image is the image of Christa Khutornaya, the wife of the captain of the Italian punishment squad Antonio Palma. She was publicly condemned in the partisan unit for sincerity and truth, for having a good opinion of her husband. She did not commit any crime, but she, a decent woman, was called obscene words – "whore", "insole", "officer's whore". She did not deserve such an attitude towards herself. "When she was taken for questioning, she could barely walk. Her whole young body lost its strength and seemed to melt away. It was as if she was falling from a great height to the ground in the terrible consciousness that the parachute behind her had not dissolved and now she could neither stop, nor shout, nor call… The earth inexorably pulled her to itself, the earth" *(Dovzhenko, 1990: 74).*

Khrystyna's honesty during the interrogation finally confused prosecutor Lymanchuk. When he asked: "Where is your national pride, where is your human dignity, where is your maiden honor?", – Hrystya says with dignity: "I know that I will not get out of here alive. Something is telling me, – she put her hand on her heart, – it says that my death has come, that I have done something forbidden, evil and illegal, that I have neither the national pride, nor honor, nor dignity that you said. So tell me at least once before I die, why I don't have this? And where is it little people? Our family is honest.

I did not recognize you as my judge. Only you can destroy me as the hideous, unwanted phenomenon that I really am. Why in our area before the war did you measure our girlish virtues mainly by a day's work and by hundredweights of beets… Am I a nationalist? Which one is there?! I remember you. You slipped through our village. I poured water into your radiator. It was flowing heavily in you and you cursed so loudly and disgustingly. I cried then and, while crying, I asked you if there would be fascists in our village: maybe I ran away? Do you remember what you told me? You called my question provocative. So I remained under the German, a whore and a bitch… Now you despise me, threatening me with death. And I want to die, I want! … What can you punish me with?" *(Dovzhenko, 1990: 76).*

The image of Olesya, Christ's friend, is no less sorrowful and mournful. Dovzhenko himself portrays her sympathetically. It is obvious that Olesya exemplifies a model of Ukrainian

young women: beautiful and elegant, diligent in her work, modest and singing. As a great patriot, Olesya is most worried about the common grief of the people – the occupation: "Oh my God! That it will be with us" *(Dovzhenko, 1990: 21).*

Olesya is an extremely strong girl, because even her last name Zaporozhets indicates this and personifies the indomitability and fighting spirit of her heroic ancestors. When Lavrin, Olesya's father, was making a list of young people who would later be sent to work in Germany, he recorded his own daughter in it. Soon, Olesya and Khrystya are going on a German train to become slaves. The girls try to escape, but in vain. Khrystia was seized with debauchery, but Olesya did not lose heart. Olesya is the girl who makes great efforts to be able to find a way out of the most desperate situation. She always believes in her own strength, because she is full of love for the Motherland and love for tanker Vasyl Kravchyna, her boyfriend. "Christ, we are the mothers of our people. Everything must be moved, children must be born so that the people do not move. Look what is being done. Many millions are dying. (…) I believe! And you believe, Christ. They strangle you, but you believe…" *(Dovzhenko, 1990: 56).*

3. The image of females and males in the story

Olesya, unlike Christy, did not manage to escape, so she is no longer an individual, but a real commodity in the slave trade. But Olesya could not come to terms with the situation in which she is a slave. An unquenchable flame of freedom, great love for her dear land was kindled in the girl's heart. Germans and Germans approached Olesya, touched her with their hands, turned her away. Olesya, it seemed, did not notice anyone, as if she was not here, at this disgusting slave market. She was in Ukraine. She poured over her to her father, to her mother, to her brothers, to Vasyl, who somewhere far, far away are shedding their blood for their native land. She felt that this terrible reality could not last long, because then the world would have to go out, and that reality laid its shameful hand on her" *(Dovzhenko, 1990: 64).*

But Olesya was undeterred and tried to run away again. Finally, her attempt was successful. When she got to Ukraine, she accidentally saw her beloved Vasyl. But it was not the same Olesya, how much grief she endured, she became gray. But despite everything, Olesya's soul was as indomitable as her will. Vasyl Kravchyna emphasized this, saying that Olesya has become even better. The girl steadfastly endured all the troubles that happened on her life's path, remained morally pure and spiritually rich. These features of Olesya's character specify the image of Ukraine, which, after many wanderings and human suffering, still persevered and defeated the enemies – the Germans.

The images of Olesya and Christi are a kind of display of the national character of the Ukrainian people. In particular, I. Lysiak-Rudnytskyi notes: "I believe in the existence of something that can be called a national character. National character is identical with a peculiar way of life, a complex of artistic values, rules of conduct and a system of institutions that are inherent to a given people. National character is formed historically and it is possible to determine the factors that lead to its rise. National character is not only a product of socio-historical development, but also a carrier of national culture, an expression of the national spirit" *(Lysiak-Rudnytskyi, 1993: 71).*

I would like to note that the tragic image of Ukraine is also complemented by male images – village headman and head of the Zaporizhzhya family Lavrin and tank driver Vasyl Kravchyna, who embody the wisdom, strength, and spiritual stability of the Ukrainian people. The image of Lavrin Zaporozhets is almost the leitmotif of depicting and personifying real Cossack traits: endurance, courage and courage. It is not for nothing that Dovzhenko bestows

Lavrin with the appropriate temperament, because in the film story he constantly fulfills the role of a leader: in the family, in the village, as a headman, in the collective farm. He also managed to pass these traits on to his five sons. Exposed by the police, captured and tyrannized by the Nazis, Lavrin does not lose that energy for life, courage, without a grain of untruth behind him, he speaks with honor and dignity to the executioner, in particular, the German general von Krause.

Lavrin's spiritual power manifests itself in his anger towards the occupiers. Like a brave Achilles, Lavrin fights on barbed wire with the chief of police and, as a result, the powerless one defeats the powerful one. Loyalty to one's people defeated betrayal, because "an inhuman lust for life seized the Zaporozhian. From the wide Ukrainian steppes, from the ravines and dark barracks, the pitch of history, skulls, smoke and bloody steam blew on him. The passion for struggle and revenge, all the will, all the mind flared up in him with such a terrible force that in one moment it seemed to rise to some extraordinary level, close to an explosion" *(Dovzhenko, 1990: 52)*.

Lavrin was a true Cossack: not only did he win the fight for his life, but he also kindled the hearts of others in the concentration camp with the fire of his desire for freedom and life: "Hey! Arise, who are strong and mighty! Hey, whoever wants to live, get out of the graves! Get up, hey!" *(Dovzhenko, 1990: 53)* When you read these pages, you get the feeling that Lavrin is not Lavrin, but a powerful combination of great Cossack figures of the past: Baida, Sirk, Bohun.

The Zaporozhian was most clearly expressed in the psychological and physical confrontation with the German general von Krause. When Lavrin was brought to von Krause, he was insanely furious, because he had no idea that he had good relations with the occupation authorities and at the same time was conducting subversive work against them. For such duplicity, von Krause explained to the Zaporozhian that he was on his land, his house was burned, his sons and wife were killed, and his daughter Olesya was taken to Germany. Krause emphasized that he would insult Lavrin by inhumane methods: first, he would gouge out his eyes, chop off his hands, and cut out his tongue. But Zaporozhets only calmly and frankly said: "Go to such a mother, let the devil take your soul" *(Dovzhenko, 1990: 48)*.

Lavrin often thought about the grief of the people and the grief of his own family, which had overtaken him. But it was meager compared to the public one: "What is my death and the death of my children? – thought Zaporozhets. – And what is my little torment, when thousands of our people disappear into nothingness. Families are dying, families are dying without number and borders" *(Dovzhenko, 1990: 49)*.

Equally important is the image of Vasyl Kravchyna, Olesya's future lover. At first, he is depicted as timid, does not reveal himself to be a hero, and twice sounds a negative representation of himself with the following words: "I am not a hero" *(Dovzhenko, 1990: 20)*. The night that happened between Olesya and Vasyl fundamentally changed the worldview of the latter. Currently, he has a goal: to find and win back Olesya at any cost, to carry her image through difficult battles and swears that she, Olesya, will forever remain in his heart: "No, I will not forget you, Olesya. I will not forget you, nor your house, nor the well under the willow… Whatever you are, I will return to you. May you be black, and sick, and mutilated by the enemy, may you turn gray from grief and tears and whiten your braid, may you dig chances against me, and weave barbed German wires against me, and sow bread for the enemy under the nagai, you will remain for me beautiful, just as you are beautiful now" *(Dovzhenko, 1990: 23)*.

Over time, Kravchyna evolves in the war, appears before us as a military commander, captain, acquires traits of courage and desperate bravery. O. Dovzhenko characterizes Vasyl's ability to tell the truth, to understand the true essence of the war, in the film story as perfect

heroism. Talking to her subordinate Siroshtan, who sees war only as a way to earn glory for himself and does not understand its meaning, Kravchyna proclaims: "Did you, having shed your blood, not understand anything about who and what we are? That we are not ordinary people, not witnesses of history, but heroes of a great and terrible time? That we will not gain capital, nor conquer foreign lands, nor conquer people, that we will come home to fires and ruins, so that some will have nowhere to lay their heads. And no father, no mother, no brother. And let's say they won. And this will be our great proud truth for many centuries" *(Dovzhenko, 1990: 87)*.

Still, after the war, Vasyl returned home, found Olesya and felt overjoyed. Finally, nothing will be able to separate him from Olesya. Only the bitter and tragic war was an obstacle to the love of young people: "Then they embraced. He kissed her hands and face. And she is. Then everything happened, as in a fairy tale" *(Dovzhenko, 1990: 102)*.

4. Conclusions

Having analyzed all of the above, the following conclusions can be drawn:

The tragic image of Ukraine, which is through and through, is dominant not only in the film story "Ukraine on fire", but also in all of O. Dovzhenko's work. Its appearance was due to the observation of the war by Oleksandr Petrovych himself, who passionately wanted to go to the front and see this tragedy with his own eyes.

In particular, the film story "Ukraine in fire" is a model of his image, a masterful embodiment of such an image by the writer. In the work, he realizes himself through the following symbols, characters, visual and expressive means, which personify the horror of the war and the trials and suffering it brought to Ukraine:

• epithets: "destitute", "mutilated", "raped", "eternal widow";

• lyrical digressions of the author himself: "O Ukrainian land, how you have covered yourself!…";

• a satirical depiction of Ukrainians who do not have their own philosophy and were in eternal slavery, unable to create a heroic story;

• the song as a symbol of the continuity of the existence of the Ukrainian people and its glorious history;

• female images of Olesya Zaporizhia and Khrysta Khutornaya, who are the personification of indomitability and wisdom of the mothers of the Ukrainian people;

• male images of Lavrin Zaporozhets and Vasyl Kravchyna, as an image of the resilience of Ukrainians, a manifestation of extraordinary courage and heroism.

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NARRATIVE IN VIDEO GAMES' VERBAL MODE

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Summary

As a distinctive form of art, video games feature a narrative element in a similar way that literature, theatre, and cinema do; however, there are certain characteristics that make video game narrative different from its counterparts in other art forms. Through the video games' brief history (as compared to other art forms), the narrative went from being almost absent and neglected to playing an integral role in the product. The goal of this paper is to research the narrative element present in the verbal mode of video games. Hence, the study focuses on the history and evolution of video games and narratives represented in them. It also considers the peculiarities of video game texts resulting in their analysis and detailed description. Methods used in the research include induction, deduction, synthesis and analysis; categorization; descriptive method, and historical method. Practical importance of the paper lies in that the results may become the basis for further investigation of narrative elements and the role texts play in video games.

Key words: narratology, art and media, textual studies, interactive art, semiotic resources.

1. Introduction

Video games are a relatively recent type of entertainment media that appeared as far back as late 1950s, and has been developing in strong connection with technological advancement. Early games were quite primitive both gameplay- and narrative-wise, but the developers quickly realized that just as any form of entertainment, video games require a story, so first games with a plot were introduced in the 1980s. Considered a form of art from 2011, the overwhelming majority of video games now feature narrative elements in them (even the ones that do not have any words).

Narrative studies based on video games were conducted since early 2000s as a part of a broader research *(Buckingham et al., 2003)*. Distinctive video game studies that primarily focused on multimodal and narrative features of the media appeared a decade later *(Ensslin, 2012)*, as well as manuals written for future narrative designers that shed more light on interconnection between ludic and narrative aspects of video games *(Skolnik, 2014; Heussner et al., 2015)*. However, the object of study is unique and complicated, and research stands in its early stage and requires more contributions into the discourse. Hence, it would be beneficial to study video game narratives and verbal aspect of its multimodality in more detail.

The goal of this article is to overview video game narrative and analyze in-game texts as a part of its verbal mode. The article provides an overview of video game history and describes its multimodal nature. It also categorizes and further analyzes the texts present in video games, which results in identifying and formulating the specific features of narratives.

Using the method of continuous sampling, we looked through game texts and were able to find some recurring patterns, which later helped us divide the texts into groups and sub-groups with the method of categorization. Having described and analyzed the texts, we could find unique features of video game textuality, as well as features that are common for all art forms that feature text. Conclusions were formed based on the findings with the help of induction method.

2. Video game narrative history and overview

Video games (also called computer games or electronic games) are one of the most recent inventions in the world of digital art and entertainment. William Higinbotham created what is now considered the first video game (called *Tennis for Two*) in 1958 *(APS News, 2008),* with earlier developments dating as far back as the beginning of the decade. The game created by Higinbotham was a simple tennis game, where the players had to hit the tennis ball at the right time and at the right angle. *Tennis for Two*, along with other early games (such as digital versions of *Tic-tac-toe*, *Mouse in the Maze,* and *The Management Game*) had very little story in them, and even gameplay-wise could be considered somewhat primitive.

The first video game that had a story in it was *Donkey Kong*, directed by Shigeru Miyamoto for the company Nintendo in 1981. The game's plot consisted of a player character rescuing his girlfriend from his pet ape, who climbed higher and higher with every level. Player could see the (first ever) cutscenes that unfolded the story little by little as the game progressed, as well as text bubbles (such as the girlfriend's cry for help). Another early game with a plot was *Crash Bandicot*, which followed a similar story: Crash (the protagonist) has to save his girlfriend from the antagonist, Dr Neo Cortex.

Even though technically those games did have a story in them, it was rather simple and in many ways gave way to the gameplay, simply providing context for the player's actions. However, they mark an important milestone in history of video game narrative: simply playing tennis, marching a mouse through a maze, or even shooting an enemy's spaceship (as in *Spacewar!*) without any reason or motivation besides winning wasn't enough already. If a player jumped across platforms that hung in the air, dodging enemy's attacks and climbing higher and higher, he or she needed a reason to do so, such as to save the girlfriend in distress.

Nowadays it is hard to imagine any video game completely without a plot. Featuring a protagonist (whether pre-defined, as in *Resident Evil* and *Life is Strange* or adjustable, as in *Dragon Age* and *Baldur's Gate*) who has goals and means to achieve them, an antagonist who (for whatever reason) tries to stop that from happening, and events that unfold in a certain sequence (whether scripted or dependent on the player's choices) are now as inextricable as fighting, running, or solving puzzles.

The article mentioned terms *story* and *plot*, which are a part (although not an exhaustive one) of a video game *narrative*. As is the case with any other form of narrative, video game narrative is a system that involves a story (or a plot), different senses that the story implies and messages it aims to convey, and means that enable the story to unfold.

Narrative is present all around us. We read a book – and it has a narrative; watch a movie – it has one, as well. Even scientific, medical, or historical works – all contain a narrative,

in one form or another, to some extent. Political narratives have been an object of discourse *(Patterson, Monroe, 1998)* too – whatever they may be, the word is on the lips of many these days. As a separate form of art (recognized in 2011) *(Melissinos, 2012)*, video games contain narrative, too – in their own special way. Thus, video game narrative has a number of distinctive features described below.

3. Verbal mode and narrative

Being the most technologically developed (and demanding) form of art, video games are multimodal. Modes are "semiotic resources that allow simultaneous discursive and communicative practice and different ways of interaction between its participants." *(G. Kress, 2001)* When we say that video games are multimodal, we mean that they have multiple semiotic resources participating in exchange of information. Those modes are verbal, non-verbal (gestures, camera movement, etc.), audio-visual, and interactive. While non-verbal and audio-visual modes are, without a doubt, vital components of a video game, the article will mention them briefly. Verbal mode poses the most interest for linguists, but its distinctive features derive from the other three – particularly, from the interactive one.

Interactivity is one of the most prominent features of video games, as it creates new ways of consuming (or rather, interacting with) art. Video games are not the only art forms that involve interaction, but they cannot be non-interactive. Interactive mode influences the verbal one, making video games so different from, for example, movies that use verbal, non-verbal, and audio-visual modes, but very few of them can be influenced by the viewers (those are mostly experimental and not widely popular). Interactivity turns events into quests, consumers into players, with a verbal mode adjusting accordingly.

Verbal mode plays an important role in video games – it transmits information about the game. Although non-verbal and audio-visual tools, such as decoration on a house in-game, a character's design, or a camera angle, may convey *some* information to the player, the overwhelming majority of it still relies on words. It is worth mentioning, however, that there are games that heavily rely on actions and surroundings to tell the story (*Little Nightmares, Limbo*); therefore, they do not pose much interest for linguists, and their means of storytelling will not be discussed in this article. The overwhelming majority of video games, especially ones that are set in a fantasy or sci-fi world with its own laws and history contain quite considerable and intricate verbal mode that can take many forms and serve many different purposes: from dialogue to gameplay tutorials, and each form has its own peculiarities. Thus, the article will concentrate on those types of games, mostly role-playing games.

4. Types of in-game texts

The first form words can take is dialogue. We are all familiar with it: it features a conversation between two (or more) people, during which an information exchange takes place. In more "traditional" forms of art that contain dialogue (literature, theatre, and cinema) it can tell us a lot about the scene, the characters who speak, their attitude towards the topic of discussion, etc., with the right choice of words. Video game dialogue serves similar functions: *characterization* (gives an idea about the player character and NPCs), *worldbuilding* (tells about history and culture of the game world), *pacing* (offers a moment of relaxation after a hard battle), and *humor* (lightens the mood).

In the book *The Game Narrative Toolbox (Heussner et al., 2015)* the authors divide video game dialogue into three categories: ambient dialogue, interactive dialogue, and dialogue in cutscenes. Brief distinction between the three is suggested as follows: ambient dialogue does not interrupt gameplay and serves to fill the silence in moments where it feels like the characters should say something; interactive dialogue is a mixture of verbal and interactive (gameplay) modes – here the player can choose a response he or she deems the most appropriate; dialogue in cutscenes interrupts gameplay and serves as an addition to the actions happening on-screen.

The most prominent peculiarity of video game dialogue is its variability. For example, there is usually more than one option for an ambient dialogue line that can be triggered in a certain area (*"I think this is the place"*), after attempting or performing a certain action (*"The chest is locked, we need a key", "Well, that certainly did something"*), or simply after a certain period of time passes (occasional banter between characters, for example). In games with non-linear narrative ('string of pearls' or branching) variable dialogue can serve as one of 'choice mechanics', where different options lead to different results. For example, in the final quest of the game *Dragon Age II*, the player must choose a side in a conflict between mages and templars, and that choice is presented in a form of dialogue where the player character has to articulate his or her choice in words in front of companions before setting the plan in action. Depending on the line chosen, the player will have to fight the opposing side (and, depending on multiple other choices earlier in game, some of the companions may support the player character or fight against them).

It is difficult to assign dialogue in video games to a single distinctive style due to high variability of video game genres and even types of interactions within one game; it may vary from informal (an interaction between two friendly characters) to formal (when speaking to an authority figure) and literary, or elevated, style. However, as dialogue serves a purpose of imitating real-life conversations, it often has what is called a personal style, conveying through a manner of speaking a character's background, temper, their attitude towards a certain situation. Hence, the vocabulary of dialogue varies highly, featuring simple lexis that is used by all manner of people, as well as elevated, pejorative, or archaic one. Syntax may also differ from one dialogue to another: short phrases and sentences are usually present in ambient dialogue, especially that which accompanies an action, while during an interactive dialogue a character may answer to a question with long, complexly articulated sentences, especially when explaining lore-related information.

Another form of verbal mode in video games are in-game texts: notes, journal entries, quest descriptions, tutorials etc. They can essentially be divided into two major categories: those that exist *inside* the game's world, and those that exist *outside* of it. Different notes, letters, and codex entries belong to the first group: they are usually filled with background information (that helps build depth of the game world) and can be written as to resemble real scientific/historical works. For example, in *Dragon Age* series there is an imaginary scholar by the name of brother Genitivi, and extracts from his works, along with many others, can be found by the player all throughout the game. There are also notes written by some characters that are not from any 'scientific' work: those may be entries in a diary, notes passed between characters as a form of communication, orders in written form, etc.

As in case of dialogue, there is also a high stylistic variation when it comes to such texts. Those codex entries that are written as if to resemble a scientific or theological work will have features typical for such texts: explanatory or descriptive nature, high amount of terminology (usually the one unique for the game, as such texts serve mostly a lore-explaining purpose), use of Passive Voice and impersonal constructions for pseudo-scientific texts, and elevated,

religious, sometimes poetic language of pseudo-scriptures. Notes and diary extracts are usually written in a semi-formal style (but may vary depending on a character that wrote them). Based on a video game genre vocabulary of such texts may contain archaic lexemes (as in medieval fantasy games) or modern day slang (in games set in modern times or nearest future). Syntax also varies greatly from one text to another, featuring simple sentences in personal notes, and more complex clauses when it comes to literary works.

The second category includes texts that exist outside the game world, but are important for the player. Such texts can be quest descriptions, game tutorials, item statistics, etc., and they can usually be found in a character's journal. Journal is a peculiar part of any video game: it seems to exist between the in-game world and the real world, and its contents may vary depending on the player's actions (whether a quest was completed or not, and if yes, with what outcome, etc.).

Let us further look into the wording of quest descriptions. In this case, developers (writers, narrative designers) can choose between different approaches: they can either describe a quest as simply an instruction for a player, or they may stylize it to fit the in-game world. For example, the game *Hades* has a list of tasks that a player character can complete in order to get some rewards, and they are written in the form of prophecies: "*The son of the god of the dead shall someday break free from the realm in which he was born*". In *Disco Elysium* some quests have a description in the form of a player character's inner voice telling him what he should do, and sometimes differ in the amount of detail. For example: "*Someone must know something about your lost firearm. Maybe a district authority, like someone high up in the Union? Or someone local, who saw you with it before you passed out – the Whirling's absent bartender? You could also ask the local pawnshop*". Depending on the game's genre, the style of quest descriptions differs from formal and/or elevated to more familiar, which then dictates certain choices of wording, but all quest descriptions should feature so-called *anchor words* or phrases that give a hint to what the player should do next: name of a location, or a character they need to talk to, or an action to perform.

Game tutorials are probably the most "real-world" game texts, as their purpose is to show the player how to play this game. They help the player learn how to move (walk, run, crouch, jump, etc.), use items, open journal and inventory, change armor/weapons, and also some other gameplay mechanics unique for a certain game. Game tutorials are written in a form of instructions and have a neutral, semi-formal style: "*Pres W, A, S, D to walk.*", "*You can drag and drop items between the two sides or down to the quickbar, double-click to use or equip them automatically, or right-click and hold to open the radial menu to interact with items.*" Imperative mood prevails in such type of texts, as well as modal verbs and infinitive constructions. Sentences differ in size and complexity based on the type of action that needs to be described.

5. Conclusions

Video games with plot in them appeared approximately 30 years after the creation of the first video game, and their narrative has developed significantly over the decades. Narrative in video games has a number of peculiarities, of which the most prominent one is its interactivity, reflected in video games' verbal mode, the most relevant mode for linguistic studies. It can be divided into dialogue (ambient dialogue, interactive dialogue, dialogue in cutscenes) and in-game texts (quest descriptions, notes, journal entries, tutorials etc.).

Dialogues in video games stand out with their variability: there are usually multiple phrases that can be said in one situation or following one action. Dialogue options can also be

presented to the player that define the course of action (and plot) and may have different outcomes based on the choice made.

In-game texts are divided into those that exist inside the game world (notes, extracts from fictional works, character's diaries, etc.) and those that exist outside of it (quest descriptions, tutorials). Texts inside the game world serve the purpose of expanding and deepening the lore, making it more corporeal and believable. Different stylistic decisions can be made considering quest descriptions to make them more integral with the game world and look less like instructions, but those still exist mainly for the player to understand the course of action. Tutorials explain the mechanics of a game, and teach the player basic and advanced movements and actions, sometimes even unique to a certain game.

Further research is necessary on the topic of verbal mode as a part of video games structure, types of game texts and how they form the narrative and help move it forward. Stylistic, lexical, and grammatical variability of texts featured in video games constitutes one of the most prominent and curious peculiarities of their verbal mode. Generally considered a less valuable art form compared to literature and cinema, video games, however, offer a vast area of research of complex intermodal relations and interactions, making it intriguing for programmers and marketing specialists, as well as linguists and narratologists.

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A PRAGMATIC ANALYSIS OF REFUSAL SPEECH ACTS
IN "FAMILY·SPRING·AUTUMN"

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Summary
The study of refusal speech acts has received widespread attention. It is a speech act of uncooperative response to a specific request (such as a request, suggestion, invitation, offering of help, etc.). As a face-threatening act, it is necessary to use appropriate strategies to maintain harmonious interpersonal relationships when implementing it, especially in Chinese culture. Under the influence of Chinese traditional culture, there are certain particularities in implementing refusal speech acts. The paper uses the refusal speech acts collected in the novel trilogy "Family·Spring·Autumn" by the famous Chinese writer Ba Jin as the corpus. There are three types of refusal speech acts: direct, indirect, and strong, and a total of 21 refusal strategies. It was analyzed using document analysis and data analysis, combined with the characteristics of the social background of the feudal patriarchal system. Research on refusal speech acts is of great significance for better understanding the character of a nation and the particularities of an era.

Key words: face-threatening act, refusal strategy, Chinese culture, feudal patriarchal system, national character, era's particularity.

1. Introduction

"Refusal" is a speech act that is often encountered and used in daily life. When implementing the refusal speech acts, special attention needs to be paid to the strategies, because it is a face-threatening act, and it will hurt the other party's face. Language is the carrier of culture, especially in different cultural backgrounds, customs, national characteristics, and values, which will impact their speech acts. In different cultures, there are various refusal speech acts and different refusal strategies. Therefore, to maintain harmonious interpersonal relationships between the two parties and minimize the threat to the other party's face, the study of the refusal speech act has important practical significance. Through data and text analysis combined with the specific characteristics of the era of the corpus, the paper presents the particularities of the Chinese refusal speech act. On the other hand, it also enriches the study in the field of refusal speech acts.

2. Theoretical background

2.1 Refusal and refusal speech act
A.S. Hornby's Oxford Advanced Learner's English-Chinese Dictionary states "refusal": an act of saying or showing that you will not do, give or accept sth *(A.S. Hornby, 2012:1280)*.

In "Modern Chinese Dictionary" (5th Edition), "Refusal" means "Do not accept (request, opinion or gift, etc.)" *(2005:740)*.

Zhao Huaizhi: Refusal is a response behavior made by the speaker to deny the hearer's suggestion to participate in a particular behavior *(Zhao Huaizhi, 2009:193)*.

Wang Fenglan: To refuse means not to accept. In terms of language, refusal may mean not accepting other people's suggestions, opinions or criticisms, or not accepting favors or gifts from others *(Wang Fenglan, 2003:28)*.

Su Lijing: "Refusal" is a kind of "response negation". The so-called "response negation" is a verbal reaction activity, which refers to the expression of negation, opposition, and disapproval in a broad sense of the opinions and attitudes expressed by the communicative party's discourse content in communication. In a specific context, the communicator does not directly express this negative intention but in indirect ways *(Su Lijing, 2005:1;4)*.

Feng Guiqin: "Refusal" is a process in which the subject does not accept the "benefit" or "loss' of the object in interpersonal communication, a kind of behavior, and the transmission of relevant information. At the same time, it is also a way for the subject to change the attitude, belief or behavior of the object by providing the object with an information source that reflects the subject's "non-acceptance" idea, so that the information sender and the information receiver cooperate to establish a consensus *(Feng Guiqin, 2006:13)*.

Ran Yongping: The speech act of "refusal" is a kind of "non-cooperative" choice made by the speaker after the request, invitation, or suggestion of the other party *(Ran Yongping, 2006:93)*.

Luan Yimin: The refusal speech act is the speaker's rejection of the listener's command behavior *(Luan Yimin, 2011:36)*.

Chang Shan: Refusal speech act refers to that in the process of verbal communication, the passive party uses words to deny the request, demand, arrangement, invitation, suggestion, etc. put forward by the active party that can affect his behavior. The speech act process is called the refusal speech act *(Chang Shan, 2014:12)*.

In the thesis, the definition of the speech act of refusal is a speech act of uncooperative response to a specific request (such as request, suggestion, invitation, offering of help, etc.).

2.2 Face-threatening acts

According to Brown & Levinson, "Face" is the "listener's public image" or "self-perception". The universal feature of verbal communication is like this: the listener's self-image must be respected, their feelings should be considered, and the acts that threaten the listener's face (Face-threatening acts, FTAs) should be avoided. Therefore, when acts that threaten the listener's face occur, the speaker must adopt some strategies to redress the listener's face.

There are two types of face: positive face and negative face. A person's positive face reflects his desire to be approved, respected, and appreciated by others. A person's negative face reflects his desire not to be held back, not to have opinions imposed, or his desire to make free choices. Accordingly, the strategies can be divided into two categories: positive politeness strategies and negative politeness strategies. According to Yule, the positive politeness strategy emphasizes the close relationship between the speaker and the listener, so it is a solidarity strategy. The negative politeness strategy emphasizes the liberty of the listener, so it is a deference strategy *(Yule, 1996:5;60)*.

Brown & Levinson listed 15 positive politeness strategies, such as "Noticing and attending to the hearer", "Exaggerating", "Intensifying Interest to Hearer" and "Seeking Agreement" etc. *(Goody, 1978)*, which are mainly divided into three categories. The first category is to show that the speaker has common characteristics with the listener. The speaker indicates that he and the listener belong to the same category, having the same goals, values, or hobbies. The second

category shows that the speaker is willing to cooperate with the listener. The speaker indicates to the listener that he understands the mood, needs, and desires. Also he always declares his willingness to cooperate with the listener at the beginning. The third category is to meet the needs of the listener. The speaker can express liking, concern, understanding, and sympathy for the listener, or give the listener a chance to talk, which directly meets the listener's positive facial needs.

A negative politeness strategy is a deference strategy. When implementing a negative face strategy, the speaker considers the negative face needs of the listener, expresses that he is unwilling to force the other party, and respects the listener's autonomy. Brown & Levinson listed 10 negative face pragmatic strategies, such as "Be conventionally indirect", "Question-ing and hedging", "Give deference", "Apologize" and "State the FTA as a general rule" etc. *(Goody, 1978:103)*.

3. Previous researches

3.1 Studies on the types of refusal speech acts
For the research on the types of refusal speech acts, different scholars have come up with different classifications from different perspectives.

Yan Xiaochun: According to subjective classification, refusals can be divided into strong refusals and tactful refusals; According to objective classification, it can be divided into direct refusals and indirect refusals *(Yan Xiaochun, 2007)*.

Gao Xiao'an: Based on its division, classify refusal speech acts in modern Chinese: sincere refusal and false refusal. Sincere refusal follows Yan Xiaochun's classification, and false refusal is divided into three categories: procedural, purposeful, and joke *(Gao Xiao'an, 2010:17)*.

Chang Shan: Due to the different classification standards: according to the content that the subject wants to refuse, it is divided into the refusal of requests, requirements, arrange-ments, suggestions, invitations, etc.; According to the way of refusal, it can be divided into direct refusal, indirect refusal, etc.; According to the tone of refusal, it can be divided into strong refusal and euphemistic refusal; According to whether the rejecter really wants to refuse, it can be divided into sincere refusal and false refusal *(Chang Shan, 2014:12)*.

Wu Yan: Findings show that the refusal speech acts include direct refusal speech acts in incisive, self-abasement language and indirect refusal speech acts in self-deprecating, norma-tive language *(Wu Yan, 2015:319)*.

Ma Jing: From the analysis of the refusal content, it can be divided into direct refusal and indirect refusal objectively, and sincere refusal and false refusal; Analysis from the refusal form, it can be divided into assertion class, instruction class, promise class, statement class and declaration class *(Ma Jing, 2020:9)*.

3.2 Studies on the strategies of refusal speech acts
In recent years, many scholars have also done research and classifications on refusal strategies. Liao obtained 24 rejection strategies by calculating the average number of rejec-tion strategies used by each survey subject: silence; hesitation; lack of enthusiasm; offering an alternative; postponement; blaming a third party or something over which you have no control; avoidance; general acceptance without giving details; divert and distract the addressee; general acceptance with excuse; saying what is offered or requested is inappropriate; external yes, inter-nal no; statement of philosophy; direct no; excuse of explanation; complaining or appealing to feelings; rationale *(Liao, 1996:703)*.

Ma Yuelan used pragmatic theory to summarize 11 refusal strategies through the inductive analysis of 5 refusal contexts, namely, avoidance strategy; diverting the requester's attention, deferring strategy; criticizing education strategy; suggesting strategy; false consent strategies; suggestive strategy; ambiguous expressions strategy; joke strategy; objective strategy; subjective strategy *(Ma Yuelan, 2000:46)*.

4. Research methods and corpus introduction

4.1 Research methods
This article mainly adopts the method of literature analysis and data statistical analysis. Through specific literature analysis of the corpus "Family·Spring·Autumn", identifies, extracts, summarizes the refusal speech acts, and combines the cultural characteristics at that time to give analysis.

4.2 Corpus introduction
The novel trilogy "Family·Spring·Autumn" describes the life of the four generations of the Gao family, a feudal extended family, in a turbulent era from 1919 to 1924, a turning point in Chinese history. The author of the novel, Ba Jin, is known as one of the most influential writers in China since the "May 4th" New Culture Movement, an outstanding Chinese literary master in the 20th century, and a master of contemporary Chinese literature.

The novel describes the disintegration and decline of a feudal family, and the process of the young generation breaking through the shackles of the feudal patriarchal clan and leading to a new life. The social background of the novel is the era shrouded by the feudal patriarchal system. Throughout the novel, the fierce conflict between the collapsing feudal patriarchal system and the revolutionary trend among the younger generation runs through.

The feudal patriarchal system was established by Chinese feudal rulers to adjust the internal relationship of the family, ensure patriarchal rule and husband's authority, and maintain the feudal order. Under this system, there is a hierarchical system between family members. The upper has power and the lower obeys. Servants have the lowest status, especially servants with no rights and freedoms, and their masters control their fate.

To sum it up: First, the hierarchical structure within the feudal family is mainly based on seniority and ranking, with the elders respecting and the younger being inferior. Secondly, the status of men is higher than that of women. Wives should obey their husbands. Again, the husband has an official wife, and there are no restrictions on taking concubines. Concubine is not regarded as a member of the family. Correspondingly, the status of children born to concubines is much lower than that of formal wives. Finally, in feudal families, the more distant the relatives are, the lower the status; the closer the blood relationship, the greater the power.

5. The pragmatic analysis of refusal speech acts in "Family·Spring·Autumn"

5.1 Direct refusal speech acts
Direct refusal speech acts mean expressing the meaning of refusal unabashedly. The general form is negative form using negative words (no, not + verb, etc.).
[1] "你的事情我完全明白。事情已经到了这个地步，还有什么办法？....我劝你还是忘记的好。" "忘记？我永远不会忘记！"觉慧愤怒地答道，眼睛里闪着憎恨的光。
["I fully understand your matter. But it has reached this point, what else can you do?… I advise you to forget." "Forget? **I won't forget! never!**" Juehui replied angrily, with the light of hatred flashing in the eyes.]

Mingfeng's death made Juehui hate the family which was shrouded in the feudal system at that time even more. Juehui couldn't bear and accept the comforts and suggestions given by her elder brother Juemin. He could't forget Mingfeng's death, and couldn't forgive the feudal system at that time, so he used the sentence pattern of "I will not…" directly refused.

5.2 Indirect refusal speech acts

5.2.1 Explain the reason

[2] "三弟，走快点，"说话的是一个十八岁的青年，一手拿伞，....在后面走的弟弟是一个有同样身材、穿同样服装的青年。...."不要紧，就快到了。**....二哥，今天的练习的成绩算你最好，英文说得自然，流利。你扮李医生，很不错。"

["Brother, hurry up," said an eighteen-year-old youth, holding an umbrella in one hand… The younger brother walking behind was a young man of the same build and wearing the same clothes… "It doesn't matter, **we'll be home soon…**brother, today's exercise is your best result, and you can speak English naturally and fluently. It's suitable for you to play Dr. Li."]

The elder brother Juemin urged his younger brother Juehui to hurry home. But Juehui expressed his attitude with "It doesn't matter." Then he explained the reason that they would be home soon.".

5.2.2 Give alternative suggestions

[3] 淑英把两道细眉微微一皱，推辞说"怎么喊我去打？为什么不请三太太打？"

[Shuying slightly frowned her slender eyebrows, and declined, "Why asked me to do it? **Why not ask Mrs. Zhang to play the cards?**"]

Shuying hated playing cards, so she didn't want to participate. After hearing the invitation, she suggested inviting Mrs. Zhang to participate.

5.2.3 Use polite expressions

[4] 觉民仿佛觉得一些悲痛的情感在他的身体内奔腾。....他痛苦地、但是依旧坚定地答道："大哥，我懂你这番好意。我对你只有感激。但是我不能够答应你。我要走我自己的路。我当然比你更了解我自己。我们在思想上差得远，你不会了解我。"

[…Juemin replied painfully but still firmly: "Brother, **I understand your kindness. I can only be grateful to you.** But I can't promise you. I want to go my own way. I certainly know myself better than you do. We are so far apart in thought that you will not understand me."]

Juemin could not heed the dissuasion of his elder brother Juexin, and he would continue to run a newspaper even if it was dangerous. He would contribute to the spread of new ideas and enlighten the people's minds. While refusing, he is grateful to his elder brother for caring about him.

5.2.4 Make requests

[5] "太太，我宁愿受冻挨饿，我不情愿给人家做小....."鸣凤吐出了这句以后，觉得自己的全身的力量都用尽了，她站不住，跪下来，抓着周氏的膝头哀求道："太太，请你不要把我送走，我愿意在公馆里做一辈子的丫头。我愿意服侍你一辈子。....太太，可怜我，年纪轻轻！....你打我、骂我都可以，只是不要把我送到冯家去。....我怕，我怕过那种日子。....太太，请你发点慈悲，可怜可怜我罢。....太太，我不能去啊！"....

["Madam, I'd rather be cold and hungry than be someone else's concubine…" After Mingfeng uttered this sentence, she felt that all the strength in her body was exhausted, and she couldn't stand and knelt. She grabbed her master's knee and begged: "**Madam, please don't send me away.** I am willing to be a maid here for the rest of my life. I am willing to serve you for the rest of my life...**Madam, please pity me,** I'm too young!… You can beat me and scold me, but **please don't send me to Feng's house…** I'm so scared, I'm terrified of living

that kind of life… **Madam, please show some mercy and pity me.**.. **Madam, please don't let me go!"**…]

Maid Mingfeng will be given to Mr. Feng (a man who can be as old as Mingfeng's grandfather) as a concubine. Due to her status as a maid, though she is unwilling to accept such a fate, the only thing she can do is to beg her master to be merciful and not give her away.

5.2.5 Make excuses

[6] 淑华看觉民一眼。觉民丝毫不动声色安静地答道："翠环，你回去说我现在要预备功课，没有空，三老爷有话，请他告诉大少爷好了。"

[Shuhua glanced at Juemin. Juemin replied calmly, "Cuihuan, you go back and say that **I have to prepare my homework now, I don't have time.** If uncle has something to say, please tell my elder brother."]

Faced with his uncle's invitation, as a nephew, Juemin could not refuse directly, so he indirectly refused the meeting. He took the excuse that he needed to prepare homework and had no time.

5.2.6 Make postponements

[7] "这倒不要紧，我也晓得办这件事情要费很多时间。不过家舅还有点小事情要请表妹夫过去谈谈，" 觉新温和地说。"我想改天再到岳父那边去。今天来不及了。家严要我出来办一件要紧事，"国光连忙推辞道，他不愿意到周家去。

["It doesn't matter. I also know that it will take a lot of time to do it. But my uncle still has something that needs to talk with you," Juexin said gently. "**I would like to go to my father-in-law another day.** It's too late today. My father wants me to deal with something important now," Guoguang declined, for he didn't want to go to Zhou's house.]

Guoguang didn't want to meet his father-in-law to talk about dealing with his wife's funeral. He didn't value his wife very much and didn't want to bury her according to the standard etiquette. Therefore, he took the strategy of procrastinating time to save himself from the current situation.

5.2.7 Play jokes

[8] 众人笑了起来，琴红着脸笑骂道："死丫头，你也来打趣我。我回头告诉你们太太去。"

[Everyone laughed. Qin blushed and scolded with a smile: "**Bad girl**, you also with the others to make fun of me**! I will tell your master later (to punish you)**."]

Qin wasn't mad here but just joked about going to the maid's master to complain. She didn't mean to do it. She just used the strategy to refuse to talk about her future marriage in public.

5.2.8 Make hypotheses

[9] "我看你最好还是把二哥劝回来，不然这门亲事将来会落到你身上。"觉新看见觉慧不表示意见，便拿这样的话打动觉慧的心。"如果爷爷真有这个意思，就让他做罢，他总有一天会后悔的。我不怕，我有更好的办法！"觉慧骄傲地说。

["I think you'd better persuade your brother Juemin to come back. Otherwise, this marriage will fall on you in the future." Juexin saw that Juehui didn't express any opinion, so he used such words to disturb Juehui's mind. "**If Grandpa wants to, then let him do it. He will regret it one day.** I'm not afraid! I have a better way!" Juehui said proudly.]

Regarding the fact that marriage must be arranged by the uppers(elders) in that era, Juemin resisted this by running away from home. His younger brother Juehui supported him and refused to disclose his whereabouts. Juehui announced that even in the worst-case scenario, he would not betray his elder brother Juemin.

5.2.9 Affirm first, then refuse

[10]   "你回屋去罢，"周伯涛嫌厌地挥手说："你每次到我房间里来，不是做怪相，就是发怪声音。真是没有长进，教不改的。"....不平和怜悯激起了觉新的反感。他又鼓起勇气对周伯涛说："大舅的话自然有理。不过据我看，枚表弟的身体太坏，又有那些病象。最好还是请个医生来看看。...."

["Go back to the room." Zhou Botao waved his hands disgustedly and said, "Every time you come to my room, you either make weird faces or weird noises. You haven't changed at all."… The injustice and pity aroused Juexin's resentment. He plucked up his courage and said to his uncle Zhou Botao: "**Uncle's words are certainly reasonable. However, in my opinion,** my cousin's health is too bad, and he has those symptoms. It's better to ask a doctor to see him…"]

Juexin adopted the method of affirming his uncle's words first and then putting forward his opinion. In this way, carrying out an indirect refusal speech act can make it easier for the other party to accept it.

5.2.10 Change the subject

[11]国光的那颗犯了罪似的心经不起这些话的围攻，他快要屈服了。但是他仍然努力作最后的挣扎，他还想到一个注意，又逃遁地说："这是家严的意思，我做不了主，等我回去禀回家严，再来会话。"

[Guoguang's sinful heart could not stand the siege of these words, and he was about to succumb. But he still tried his best to make the last struggle. He still thought of an idea and said evasively: "**This is what my father wanted. I can't make the decision. I will talk to my father and then come back to continue the discussion.**"]

Guoguang wanted to refuse to commit to burying his wife but knew it was unreasonable, so he changed the subject to his absent father.

5.2.11 Express regrets

[12]"大表哥，你这样敷衍下去，自己太痛苦了。你应该想点别的办法，"琴怜悯地劝道。"别的办法？"觉新痛苦地念道。他好像不了解这句话的意义似的。接着他又说："琴妹，你应该了解我的处境，你看我能够做什么呢？"

["Brother, it's too painful for you to be perfunctory like this. You should think of something else," Qin advised sympathetically. "Any other way?" Juexin said in pain. He seemed not understand the meaning of the sentence. Then he said: "Sister, **you should understand my situation. What do you think I can do?**"]

Juexin refused Qin's advice by expressing the regrets that he is incapable of everything around him. He suffered a lot because of the death of his wife and children, so he instinctively refused other people's proposals, even well-intentioned ones.

5.2.12 Express dissatisfaction

[13]"这不好，蕙儿究竟是郑家的人，应该由郑家作主，我们不便多管，"周伯涛在旁边沉吟地说。"呸！亏得你说这种话！"陈氏听见她丈夫还在一边冷言冷语，她又气又急，也不顾旁边有客人便啐了一口，接着带着哭骂起来："蕙儿是我生的，我养大的，难道我管不得？我就该眼睁睁看着她死？我晓得你的脾气，你是多一事不如少一事，你害怕麻烦。我不会来找你的。我就没有见过像你这样不近人情的父亲。"

["This is not good. After all, Hui is a member of the Zheng family, and the Zheng family should make the decision. It is inconvenient for us to take care of it," Zhou Botao said thoughtfully beside her. "**Bah! How dare you say such things!**" When Chen heard that her husband was still talking indifferently, she was angry and anxious, ignoring the guests beside her. She spat and cursed with tears: "**Hui is my daughter. She was born and raised by me. Don't I have some right to deal with this? Should I watch her die? I know your temper**

that you are afraid of trouble. I won't count on you. I have never seen a father as cold-blooded as you.**"]

As a follower of feudal ethics, Zhou Botao held that "the married daughter no longer belongs to her own family but a member of her husband's family". Therefore, he thought that his sick daughter's fate should be decided by his son-in-law. Mrs. Chen refused her husband's suggestion by expressing dissatisfaction.

5.2.13 State negative consequences

[15]　　　翠环听见淑英说要到花园里去玩，心里很高兴，马上悄悄地带笑说："那么，我去打个灯笼来。""你不要回去，怕惊动了老爷、太太反而不好，"淑英连忙阻止道。"我们就这样走。横竖有月亮，我们也看得见路，"她说着就挽起琴的膀子向前走了。翠环高兴地跟在后面。

[Cuihuan was very happy when she heard Shuying say that she wanted to play in the garden, and immediately said with a smile, "I'll go back and get a lantern." "**Don't go back. I'm afraid it will cause trouble if you disturb my uncle and aunt**," Shuying hurriedly stopped. "Let's just walk. There's a moon tonight anyway. We can see the road," she said, taking Qin's arm and walking forward. Cuihuan happily followed behind.]

Shuying refused Cuihuan's proposal to go back to get the lantern, she stated that taking the lantern would have the negative consequences of disturbing the elders late at night.

5.2.14 Express one's own opinion

[16]"你不要就得意。你爱管他的事情，你将来总会吃亏的。我劝你还是少管闲事的好，"觉新担心地说。"我碰到这种事情，我不管就不痛快。我不像你，我不能够把任何一件事情闷在心里头，"淑华毫不在意地答道。

["Don't be complacent. If you like to meddle in his affairs, you will suffer in the future. I advise you to keep your meddling in mind," Juexin said worriedly. "**When I encounter this kind of thing, I have to deal with it, otherwise I will feel uncomfortable. Unlike you, I can't keep anything in my heart in silence**," Shuhua replied indifferently.]

Shuying is brave and upright. She always dares to stand up and express her views without being bound by the old feudal etiquette.

5.2.15 Tell principles

[17]"妈，如今时代不同了，跟那时候已经隔了二十几年！世界是一天一天地变新的。男女都是一样的人，为什么我不可以和男同学一个学堂读书？...."

["**Mom, the times are different now, and it has been more than twenty years since then! The world is changing day by day. Men and women are the same people, they are equal.** Why can't I study in the same school as my male classmates?…"]

In the old feudal system, girls were not allowed to leave the yard until they got married and did not need to learn knowledge, they were only responsible for housework. Here Qin was talking to her mother about the principle of "gender equality" to refuse her mother's suggestion of stay at home.

5.2.16 Quote idioms

[18]"我偏要管！你不要凶，豆芽哪怕长得比天高，总是一颗小菜!" 王氏顿着脚回骂道。

["I do want to take care of it! Don't be fierce, **even if the bean sprouts grow taller than the sky, they are still a side dish!**" Wang scolded back, stamping her feet.]

Mrs. Wang refused the other party's request that she should step back and not interfere in this matter. She quoted an idiom to despise the other party, using bean sprouts as a metaphor for the other party, which means nobody.

5.3 Strong refusal speech acts
5.3.1 Use rhetorical question

[20]"四弟，你放了它吧。人家好好的飞着，你为什么一定要把它捉来关起？" 淑英不愉快地对觉英说。"那不行。这样好的鸽子，哪个舍得放走！"觉英固执地答道。

["Brother, let it go. He is flying well, why do you have to catch it and lock it up?" Shuying said to Jueying unhappily. "That's not right. Such a good pigeon, **who is willing to let go!**" Jueying replied stubbornly.]

In Chinese, rhetorical questions do not require the addressee to answer. it has a negative meaning. Jueying refused to accept her sister's suggestion to let the pigeon go. The rhetorical question does not mean to get an answer from the sister but expresses the refusal.

5.3.2 To satirize

[21]   周伯涛忽然抚摸着自己的八字须轻蔑地哂笑了两三声。他固执地说："明轩，你也太热心了。难道我还不清楚枚娃子的事情？古人说：'知子莫如父。'这句名言你未必就忘记了？我是枚娃子的父亲，我岂有不关心他的身体、让他有病不医的道理？....

[Zhou Botao suddenly stroked his mustache and smiled contemptuously. He said stubbornly: "**Mingxuan, you are so warm-hearted.** Don't I know about Meiwazi? There is an old saying: 'No one knows a child better than a father.' You may have forgotten this famous saying. I am Meiwazi's father. Is there any reason why I don't care about his body and let him refuse to heal his illness? …]

Zhou Botao said that Juexin is a warm-hearted person, but he satirized Juexin for meddling in his own business and refused Juexin's suggestion to let Meiwazi see a doctor for a physical examination.

5.3.3 To blame

[22]"你说的太过火了。这跟同情心有什么关系？五舅他们得到了满足，玩龙灯的人得到了赏钱。各人得到了自己所需要的东西。这还不好吗？"琴发表她的见解道。

["**You speak too seriously. What does this have to do with sympathy?** Uncle and the others are satisfied, and those who play dragon lanterns are rewarded. Everyone gets what they need. Isn't that good enough?" Qin posted her opinion.]

Qin refused Juehui's suggestion that he disapproved of the entertainment of Dragon Lantern. Qin blamed Jue Hui for being too serious and harsh on this entertainment.

5.3.4 To scold

[23]   周老太太气冲冲地望着周伯涛骂道："我还没有死！这些事没有你管的！你给我马上滚开！"她停了一下，看见周伯涛还没有走，又骂道："我不要你在我屋里。我给你说，从今天起，蕙儿的事情，不准你开一句腔！你再出什么主张，不管你的儿子有那么大了，我也要打烂你的嘴巴！这好多年我也受够你的气了。你不要以为我还会让你再这样胡闹下去。不是你，蕙儿哪儿会死得那样惨！"

[The old lady Zhou looked at her son Zhou Botao angrily and scolded: "**I'm not dead yet! These things have nothing to do with you! Get out of here immediately!**" She stopped for a while, and seeing that Zhou Botao hadn't left, she scolded again: "**I don't want you in my room. Let me tell you that from today on, you are not allowed to say anything about Hui! If you dare make any other suggestions, I will smash your mouth no matter how old you are! I've had enough of being mad at you for years. Don't think that I will let you go on fooling around like this. If it wasn't for you, Hui would not have died so miserably!**]

The old lady Zhou refused the suggestion from her son Zhou Botao by scolding him for being a cold-blooded father who was responsible for Hui's death.

5.3.5 To order

[25]"我看妈生气也没有用。妈最好再耐心等一等。其实蕙儿死后还不到一年，时间并不久，"周伯涛固执地说。"你给我出去！我不要听你这些话！"周老太太对周伯涛挥手说。但他并不马上走出房去。

["I think it doesn't help to be angry. Mom, you'd better wait patiently. It's not been long since Hui died," Zhou Botao said stubbornly. "**Get out!** I don't want to hear your voice!" The old lady Zhou waved to her son Zhou Botao. But he didn't leave the room right away.]

The old lady Zhou refused to take the terrible suggestion to be patient and wait to bury Hui shortly, she ordered her son to get out of the room angrily.

6. The data analysis of refusal speech acts strategies in corpus of "Family·Spring·Autumn"

6.1 The analysis of refusal speech acts' frequency usage by refusal content

In the thesis, refusal speech acts are divided into four categories according to the content of refusal: refusal to suggest, refusal to request, refusal to invitation, and refusal to offer. According to statistics, there were 418 cases of refusal speech acts in the research corpus "Family·Spring·Autumn", including 266 cases of refusal to suggest, 121 cases of refusal to request, 16 cases of refusal to offer, 15 cases of refusal to the invitation, accounting for 63.64%, 28.95%, 3.83%, and 3.59% of the total respectively.

It shows that the refusal of the suggestion occupies the highest frequency, followed by the refusal of the request, then the refusal of the offer, and the least is the refusal of the invitation. The number of refused speech acts to suggestion exceeds half of the total, accounting for 63.64%. So it can be said that refusal to suggest is the most important refusal speech act here.

6.2 The analysis of the refusal strategy's frequency usage

6.2.1 Refusal strategy's frequency usage in general

According to comprehensive statistics, the total number of refusal strategies used in the research corpus "Family·Spring·Autumn" is 1081 of 21 trategies. And the statistics of each strategy are as follows (Table 1).

Table 1

The frequency of refusal speech act strategies

Types of refusal speech acts	Frequency (times)	The proportion of the total frequency（%）	Refusal speech acts strategies	Frequency (times)	The proportion of the total frequency（%）
1	2	3	4	5	6
Direct refusal speech acts	171	15.82			
Strong refusal speech acts	225	20.81	Use rhetorical question	98	9.07
			To satirize	17	1.57
			To blame	39	3.61
			To order	40	3.7
			To scold	31	2.87

Table 1 (Continued)

1	2	3	4	5	6
Indirect refusal speech acts	685	63.37	Explain reasons	162	14.99
			Give alternative suggestions	59	5.46
			Use polite expressions	21	1.94
			Make requests	25	2.31
			Make excuses	9	0.83
			Make postponement	11	1.02
			Play jokes	12	1.11
			Make hypotheses	46	4.26
			Affirm first, then refuse	22	2.04
			Change the subject	72	6.66
			Express regrets	24	2.22
			Express dissatisfaction	62	5.74
			State negative consequences	72	6.66
			Express one's own opinion	65	6.01
			Tell principles	21	1.94
			Quote idioms	2	0.19
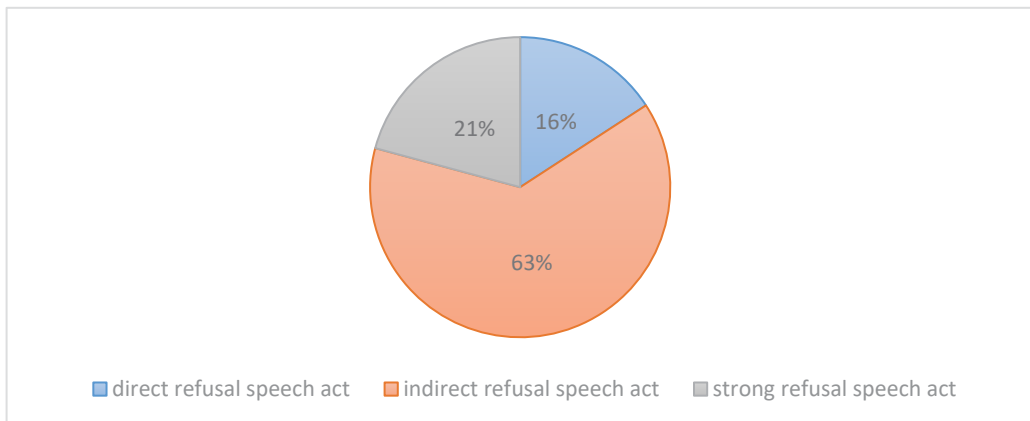
Fig. 1. The chart of refusal speech acts

According to statistics, the frequency of indirect refusal strategies is much higher than that of direct refusal, which is consistent with the general research results that the Chinese are more inclined to use indirect refusal speech acts. Many comparative research results between

China and other countries show that people in Western countries often use direct refusal speech acts, which has a great relationship with their own national culture and values. China is a typical collectively oriented Eastern country, while Western countries are individually oriented type.

In addition, China is deeply influenced by Confucianism, a social culture that advocates humility and courtesy, and a reserved and introverted national character determines the strategies of direct refusal with great threats to face. Therefore, more attention should be paid to indirect expressions and pragmatic strategies when implementing the refusal speech acts to reduce the degree of threats to the other party's face and maintain harmonious interpersonal relationships.

It should be noted that the proportion of the strong refusal speech acts in the collected corpus is also higher than the direct refusal speech acts. However, theoretically, its usage frequency should not be higher, because it is more threatening to face. After analysis, it is believed that in the social background of the feudal patriarchal system, people with high status are more inclined to use strong refusal speech acts. In addition, no matter how impolite the way is, the people with low status will not feel face-threatened but will take it as a normal phenomenon.

6.2.2 Refusal strategy's frequency usage in specific
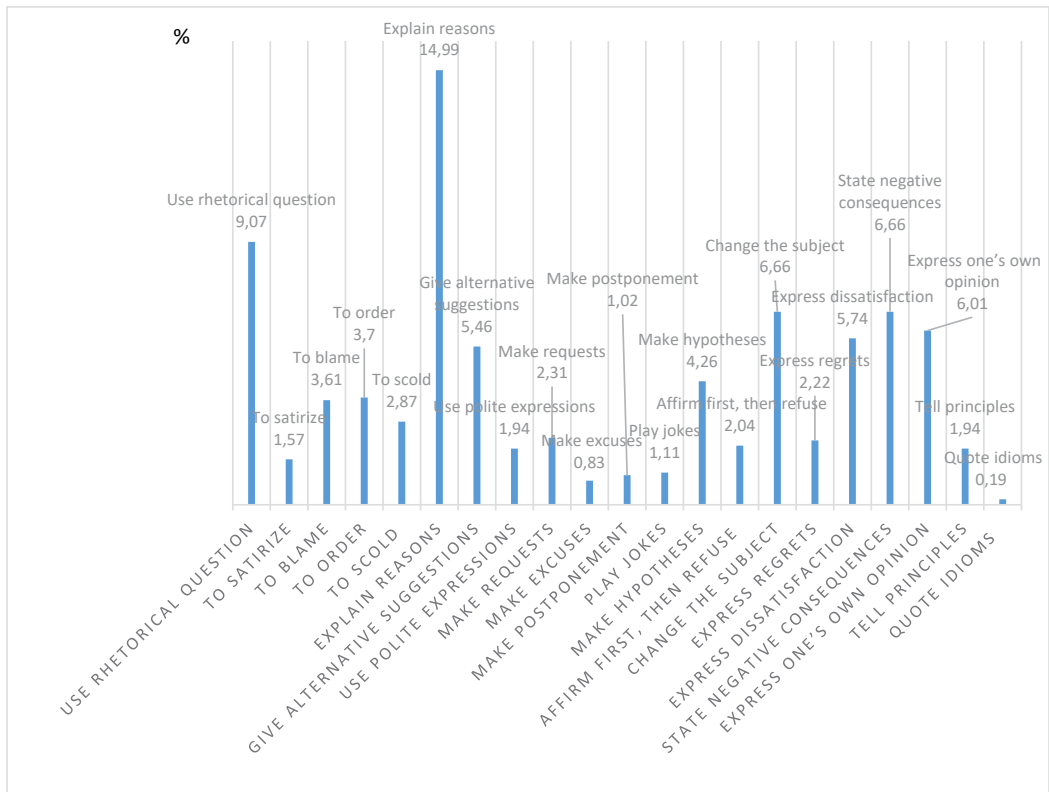
Fig. 2. The chart of refusal speech act strategies

After processing the statistics on the specific strategies of indirect and strong refusal speech acts, their percentages are in the chart above. Overall, the usage frequency from high to low is: Explain reasons (14.99%), Use rhetorical question (9.07%), Change the subject (6.66%),

State negative consequences (6.66%), Express one's own opinion (6.01%), Express dissatisfaction (5.74%), Give alternative suggestions (5.46%), Make hypotheses (4.26%), To order (3.7%), To blame (3.61%), To scold (2.87%), Make requests (2.31%), Express regrets (2.22%), Affirm first then refuse (2.04%), Use polite expressions (1.94%), Tell principles (1.94%), To satirize (1.57%), Play jokes (1.11%), Make postponement (1.02%), Make excuses (0.83%), Quote idioms (0.19%).

In the aspect of indirect refusal speech acts, the frequency of each strategy is sorted from high to low as follows: Explain reasons (14.99%), Change the subject (6.66%), State negative consequences (6.66%), Express one's own opinion (6.01%), Express dissatisfaction (5.74%), Give alternative suggestions (5.46%), Make hypotheses (4.26%), Make requests (2.31%), Express regrets (2.22%), Affirm first then refuse (2.04%), Use polite expressions (1.94%), Tell principles (1.94%), Play jokes (1.11%), Make postponement (1.02%), Make excuses (0.83%), and Quote idioms (0.19%).

In the aspect of strong refusal speech acts, the frequency of each strategy is sorted from high to low as follows: Use rhetorical question (9.07%), To order (3.7%), To blame (3.61%), To scold (2.87%), To satirize (1.57%).

6.2.3 Refusal strategy's frequency usage combines hierarchical relationship

Considering the conflict and compromise between the old and new systems under that era's background, the hierarchical "upper to lower" relationship is categorized mainly according to the relationship between the elder and younger generations, between master and servant, and between some social relations(for example, warlord and students). The hierarchical relationship between peer relatives and classmates is taken as "equal".

The thesis combines the hierarchical relationship to analyze the top three frequently used strategies in different refusal types, and the statistical results are in the table 2.

Table 2

The frequency of refusal speech act strategies according to hierarchy

Refusal speech act types（strategies）/ Hierarchy		Lower to upper	Equal	Upper to lower
Direct refusal speech acts		34	111	26
Indirect refusal speech acts	Explain reasons	27	109	26
	Change the subject	15	47	10
	State negative consequences	20	41	11
	Express one's own opinion	8	50	8
Strong refusal speech acts	Use rhetorical question	13	72	13
	To order	16	19	5
	To blame	6	33	0

The strategy usage frequency of the three types of refusal speech acts in the "equal" relationship is much higher than that of the other two hierarchical relationships. It is considered that, firstly, because in an equal relationship, the speech acts of Suggestion, Request, Invitation,

and Offer will occur more, so there will be more opportunities for implementing refusal speech acts. Secondly, it is relatively easy to implement the speech act of refusal among equal relationships. When choosing a refusal strategy, it will be freer and more diverse than in the other two hierarchical relationships, so the total frequency usage of the strategies will be higher than that in the other two hierarchical relationships.

In particular, the relationship of "lower to upper" had the fewest occasions to make suggestions, invite, and provide help, etc., so the frequency of refusal was the least among the three relationships. The lower belongs to the passive acceptance position, even if facing unreasonable matters, they tend to adopt a submissive attitude. It is also worth noting that in the corpus, strong refusal speech acts among peers occur frequently. This is due to the fierce conflict between the different views among peers with the resistance of the new trend of thought in pursuit of equality and freedom.

Except for the usage frequency of "Expressing one's won opinion" and "Use rhetorical question", the other four strategies are more adopted in the hierarchical relationship of "upper to lower" than that of "lower to upper" ("Change the subject", "State negative consequences", "To order", and "To blame").

As for the strategy of "Changing the subject", there is a higher frequency in the hierarchical relationship "upper to lower". This is because the upper have the right to speak and are free to change the topic, while the lower is more passive in controlling it. Also, it is impolite to interrupt and change the topic of the upper during the communication, so it is mostly only found in very close relationships, such as "mother and daughter" or just used to comfort the upper to divert their attention from some negative emotions.

As for the strategies of "State negative consequences", "To order" and "To blame" of the higher frequency in the relationship "upper to lower" are two to three times that of ones in "lower to upper" relationship.

"State negative consequences" is a common remark used by the upper with their sense of superiority. Discourage these behaviors of the lower by foreseeing the negative consequences that will be produced, to some extent, to show their own senior life experience and foresight wisdom.

"To order" is a common speech act of the "upper to lower" relationship. Under the cover of the feudal patriarchal system, the sense of hierarchy in society or family has deepened. The upper do not need to consider maintaining a harmonious relationship with the lower, and the lower also regards it as a normal social rule. Therefore, the strategy of "To order" is often adopted by the upper. There is a noticeable point, which is a few cases were found in the "lower to upper" relationship. Through analysis, they occur between students and warlords at the social level, rather than in family relationships. Commanding discourse emerges as students demonstrate and demand the release of arrested patriotic students.

The usage frequency of the strategy "To blame" of the "lower to upper" relationship is zero. In the cultural background at that time, it was difficult for the lower to blame the upper, and it was even more impossible for a servant to blame their master. For example, maid Mingfeng, a very young girl, faced the fact that she was given to an 80-year-old man as a concubine. Faced with such a cruel situation, she just begged instead of blaming or implementing other strong refusal speech acts.

The usage frequency of "Expressing one's own opinion" and "Using rhetorical questions" in the two types of hierarchical relationships is the same and less than the other strategies of indirect refusal speech acts. After analysis, the reason why there is less "Expression of opinions" of "upper to lower" relationship is that because the upper(mostly refers to the older

generation in the corpus) accepts the old concepts of ethics, they don't have many new insights of their own. When they encounter problems, they follow the scriptures. Everything is done according to the items listed in the ancient books, and they have no thoughts of their own. In the "lower to upper" relationship, because the lower (mostly refers to young generation in the corpus) have begun to receive modern education and are enlightened by new trends of thought, they are good at thinking about things and try to dare to express their views that are contrary to the old ethics. Therefore, there appear few strategies for the "Expression of opinions".

In Chinese, there are two types of interrogative sentences, "A question that asks questions when there is doubt is called an interrogative sentence, and a question that asks questions without doubt is called a rhetorical question" *(Huang Borong, Liao Xudong, 2002:112).* The strategy of "Use rhetorical questions" is very common in strong refusal in Chinese, which does not require an answer from the addressee and indicates the negation. Therefore, its usage frequency is relatively high in all three hierarchical relationships.

7. Conclusions

Through statistics and pragmatic analysis of the corpus, the thesis found that:

Firstly, it is consistent with the general research findings that indirect refusal speech acts are often adopted in Chinese to maintain harmonious interpersonal relationships;

Secondly, in the social background of the feudal, patriarchal system, the upper are more inclined to use strong rejection, and they do not need to use strategies to maintain a harmonious relationship with the lower, and the lower also habitually passively accepts this a social rule. No matter how impolite the way is, the lower will not feel the threat of face;

Thirdly, compared with refusal speech acts of the other two hierarchical relationships, the refusal speech acts of an "equal" relationship are more likely to occur, and the choice of strategies is more diverse;

Finally, As for the strategies of strong refusal speech acts, "Use rhetorical questions" and "To blame" appear at the family level of three hierarchical relationships. Because "Use rhetorical questions" is a common strategy in Chinese, it generally occupies a high frequency. The strategy of "To order" of the "upper to lower" hierarchical relationship occurs at the family level but only occurs at the social level of the "lower to upper" hierarchical relationship. In addition, the usage frequency of "To blame" is zero of the "lower to upper" hierarchical relationship, which typically reflects the cultural characteristics of the feudal patriarchal system at the time.

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THE PROBLEM OF OVERCOMING LANGUAGE BARRIERS BY STUDENTS OF NON-LINGUISTIC SPECIALTIES

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Summary

The article presents studies of barriers to learning a foreign language and possible ways to overcome them. The relevance of the problem is proven by the analysis of modern processes of globalization and their influence on the demands placed on future specialists. An analysis of psychological-pedagogical and scientific-methodical literary sources of domestic and foreign authors, who studied various aspects of the emergence and overcoming of foreign-language barriers in the educational process of modern higher education institutions, was carried out. The purpose of the article is to analyze the barriers that arise when learning a foreign language and to determine ways to overcome them in the conditions of modern institutions of higher education. The content of the concept of psychological barrier in the context of learning a foreign language is specified. Having considered the available definitions of barriers in learning a foreign language, the authors state that the barrier in foreign language communication is an internal obstacle of a psychological nature that prevents the successful implementation of a certain activity. The article is devoted to the problem of overcoming language barriers by students of non-linguistic specialties when learning foreign languages. It is emphasized that the elimination of language barriers is the main a condition for optimizing the teaching of foreign languages in a technical university. The main causes of communication failures. Recommendations are given for organizing the educational process in foreign languages taking into account the language barrier factor.

Key words: language barrier; linguistic barrier; psychological barrier; intercultural communication; communication strategy; taking into account individual characteristics; motivation.

1. Introduction

Improving foreign language training at a technical university is one of the priority areas for the modernization of higher education. Globalization processes in the professional sphere and education, the rapid development of innovative technologies in the international scientific and technological space, the transition to an "information" (communicative) civilization, which requires any specialist to be ready to go beyond the limits of a limited, familiar space, are the

main factors, contributing to the activation of the study of a foreign language by students of non-linguistic specialties. Despite the obvious importance of studying a foreign language at a technical university, most students demonstrate insufficiently high results in this area. As practice shows, future engineers experience difficulties in the production of spontaneous foreign speech. These difficulties are due various reasons: fear of public speaking, internal expectation of criticism, difficulties in a conversation situation with a "stronger" student, lack of vocabulary, etc.

All these facts confirm the existence of the so-called language barrier, which prevents effective foreign language communication between representatives of multilingual specialists.

Consequently, the relevance of research in this area is due to the need to resolve the contradiction between the requirements of modern society for the training of future specialists capable of carry out communicative actions in situations of professional foreign language communication, and the existing system of foreign language training in universities, which would take into account the factor of the language barrier when teaching a foreign language.

2. Analysis of research and publications

The study of foreign languages is the subject of research by both domestic and foreign scientists. The issues of introducing a communicative approach to the study of foreign languages in domestic pedagogical science are studied in detail by A. Karpyuk, L. Morskaya, S. Nikolaeva, N. Sklirenko, A. Tarnopolsky and others. In foreign scientific and methodological literature, the works of K. Black, E. Joiner, J. Richards, D. Himes are devoted to the study of the features of using the communicative method in teaching a foreign language.

In domestic psychological and pedagogical science, the psychological component is most often indicated as the dominant reason for the presence of a language barrier (O. Barvenko, T. Verbitskaya, O. Vysotskaya, I. Grodsky, N. Gubareva, V. Mishak, N. Rudyk, N. Soroka, I. Shcherban). Foreign scientists use slightly different terms to characterize this phenomenon. Thus, they use the word "barrier" for such concepts as poverty, inaccessibility of education, personal and social attitudes towards the need to learn a foreign language, age, motivation, linguistic distance between native and foreign languages. The concepts closest to the "language barrier" in foreign scientific literature are "mental block" and "foreign language anxiety". The language barrier is considered by scientists (N. Bekleyen, M. Casado, J. Cope, M. Dereshiwsky, E. Horwitz, H. Luo, M. Tallon, L. Woodrow) as situation-specific obstacles associated with the topic. that learning a foreign language, especially reproducing speech, is a constant stressful situation, because the likelihood of making mistakes is much higher due to the need to create speech that is not sufficiently mastered.

It should be noted that in the psychological and pedagogical literature there is neither a single interpretation of the term "language barrier" nor a clear classification of language barriers. Domestic scientists are studying the problem language barriers in the context of intercultural interaction (S. G. Ter-Minasova), within the framework of the activity approach (L. S. Vygotsky, S. L. Rubinstein, A. N. Leontyev, etc.), competence approach (I. A. Zimnyaya), contextual approach (A. A. Verbitsky). In foreign studies, this problem is considered within the framework of psychoanalytic theories of personality development (3. Freud, K. Jung, A. Adler, E. Bern, K. Lewin), cognitive psychology (J. Kelly), humanistic psychology (K. Rogers).

Language barriers are generally understood as objective and subjective obstacles that prevent assimilation of information, as well as speech production and, as a consequence, leading to disruption of communication in a foreign language.

A comparative analysis of the literature on the issues under study made it possible to identify the following types of barriers in the field of learning foreign languages: linguistic, psychophysiological, sociocultural, communicative, emotional, personal, volitional, value-semantic, motivational, related to self-regulation, cognitive, intellectual, subject-practical, informational, microsocial, macrosocial, technological, etc.

Summarizing the available research on this topic, we can roughly identify the following types of barriers:

– linguistic difficulties;

– psychological difficulties. *(Krashen, 1981).*

Of course, the linguistic barrier is easier to overcome, because. it is associated with objective difficulties (lack of vocabulary, lack of knowledge of grammar, difficulties in understanding foreign language speech by ear due to weak listening skills, etc.)

The reasons for the psychological barrier are much deeper. First of all, it is based on various fears associated with temperamental characteristics, low levels of emotional stability and low self-esteem. Observing students of different groups, courses and ages, we came to the conclusion that that the language barrier mainly occurs among more modest and shy students, as well as among those who is prone to the "excellent student syndrome".

The relationship between the teacher and students can have a great influence on the appearance of barriers. For example, if the combination of teacher and student temperaments is unsuccessful, temperament barrier. Often, the teacher and students fail to establish the necessary contact for communication at the first meeting. In such cases, such a psychophysiological barrier may appear as a first impression barrier.

3. Presentation of the main material

Other reasons for the appearance of a psychological barrier include negative previous experience of learning foreign languages, lack of motivation to learn the language; unpreparedness for independent overcoming language difficulties, expressed in the inability to self-control; lack of imagination; poor organization of the educational process, etc.

Even the external environment can cause unsuccessful communication between teacher and student. For example, distractions, weather conditions, acoustic interference; equipment malfunctions have a strong impact on the quality of information perception by the recipient.

We have noticed that the language barrier in a technical university is the main obstacle to effective communications. It causes emotional breakdowns in students and lack of self-confidence, negatively affects on student performance, reduces motivation to learn the language, promotes misinterpretation behavior of the interlocutor, etc. Moreover, many students come to the conclusion that they are "naturally" are not endowed with any abilities, without which overcoming the language barrier is impossible.

Experts agree that three conditions are necessary to overcome the language barrier:

1) recognition of the presence of a barrier and awareness of the reasons for its occurrence;

2) the presence of powerful motivation to overcome it;

3) conditions and resources to eliminate this obstacle, including professional assistance *(Tarnopolskij, 2006).*

In the process of many years of work at a technical university, we have identified a set of psychological and pedagogical conditions that ensure the removal of both linguistic and psychological barriers when learning a foreign language.

As you know, the main difficulty in mastering a foreign language is grammar. Undoubtedly the grammatical aspect is one of the most important aspects of teaching foreign languages, because full communication cannot take place in the absence of a grammatical basis.

However, modern communication-oriented foreign language programs at a technical university do not provide for thorough grammar teaching. In addition, as practice shows, students often know grammatical rules, do not make mistakes in exercises, but do not know how to apply this knowledge in real communication situations.

In our opinion, when selecting grammatical material in a technical university, emphasis should be placed on to an active productive grammatical minimum, covering such phenomena as the scheme of English sentences, strict word order in a sentence, prepositions, special questions, irregular verbs, passive voice, etc.

Regarding vocabulary, we focus students on learning new words and expressions in the context. The task of a technical university teacher is to teach students the most effective techniques memorizing vocabulary (for example, the method of mnemonic associations, selection of antonyms and synonyms, etc.).

In the course of working with students of non-linguistic specialties, we came to the conclusion that in order to master vocabulary, especially in technical terms, the maximum involvement of all types of memory is very important: visual, auditory, motor, logical.

To develop fluent speech skills from the very first lessons, we provide students with clichéd expressions that help relieve tension in speech and make it more lively. For example, such words as substitutes for pauses in English such as well (well), you know (you know), it is a sort of (it's like), I mean (I mean), I see (it's clear), you see (you see), so (so), actually / in fact (in fact), etc. help to remain confident in a conversation and provide the speaker with time to search for a suitable verbal form of thought.

And finally, the most difficult aspect of learning to communicate in a foreign language is listening comprehension. Listening to songs and authentic audio materials makes it possible to master the sound side of the language being studied, its rhythm, intonation, stress and melody. Of course, in the process of listening, there is mastering the lexical composition of the language and its grammatical structure.

Summarizing the above, we emphasize that in modern conditions, preference is given to a pragmatic approach to teaching a foreign language, including grammar and vocabulary, which involves the use of tasks based on the principles of problematic, unpredictability and aimed at generating ideas.

The main strategies for overcoming linguistic barriers are a competent selection of the lexical and grammatical minimum, gradualism, studying vocabulary and grammar in context, regular monitoring assimilation of new material, its constant use in speech. From our point of view, the main directions for relieving psychological difficulties are as follows:

− formation of a positive attitude towards learning a foreign language;

− creation of situations of success, revision of the attitude to the correction of errors;

− personal interest of students in the results of work;

− active and interactive forms of foreign language learning with a complete refusal of insurance in the form of native language;

− relatively narrow professional orientation of acquired knowledge;

− differentiated approach to trainees, etc.

4. Conclusions

The results of this study allow us to draw the following conclusions:

1. For effective teaching of oral foreign language speech, it is necessary to recognize the existence of a language barrier and establish its causes.

2. The process of overcoming language barriers in a technical university is based on the formation of pragmatic motivation for learning a foreign language.

3. Success in learning a foreign language depends on many factors, most of them are outside linguodidactics.

4. In modern conditions, the most effective way to remove the language barrier is communication an approach to teaching a foreign language that allows you to take into account the personal characteristics of students, to ensure maximum practice of all language skills and speech skills, setting situations close to reality, influencing the emotional world of students, encouraging them to communicate in a foreign language.

So, in modern conditions, the removal of language barriers is the main problem of effective foreign language training and a condition for the formation of the language competence of a future specialist.

Thus, the effective formation of listening skills is possible only in the case of systematic, purposeful work on them, taking into account the psychophysiological mechanisms of listening to foreign speech, taking into account the activity of students, their general level of language proficiency, needs and interests, within the framework of a communicative approach to teaching a language and along with simultaneous development of all language and speech skills and abilities.

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IDENTIFYING MISLEADING INFORMATION AND TYPES OF FAKES

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Summary

The aim of this paper is to prove that people in an age of new media formats and media technologies should be media literate persons. The authors give the definitions of "media and information literacy" (knowledge, skills and abilities to effectively interact with the media and other information services and develop critical thinking) and "digital literacy" (the ability to use digital technologies to discover, evaluate, use, and create information). Different types of misleading information, such as: misinformation, disinformation and malinformation are analyzed in this paper. We want our students to be aware of such misleading information, to have the ability to use information from a variety of sources and effectively solve problems in an electronic environment. It is rather important to understand the varied kinds of the misleading information: satire or parody, false connection, misleading content, false context, imposter content, manipulated content and fabricated content which can be less or more harmful. The authors give examples of five fact-checking rules which are not no universal but can be basic principles.

Key words: media and information literacy, digital literacy, misinformation, disinformation, malinformation, content.

1. Introduction

We live in an age of rapid development of new media formats and media technologies. Today, it is important for each of us to be able to consciously consume information, as well as to have the skills to create media content – to be a media literate person.

Oxford Reference defines media literacy as "knowledge, understanding, and experience of various media forms, in some definitions the concept includes literacy and numeracy; Competence in using various media and the ability to think critically about them; Levels of skill and competence in using media devices" *(Oxford Reference, 2023)*. The term "media and information literacy" refers to the main characteristics (knowledge, skills and abilities) that allow citizens to effectively interact with the media and other information services and develop critical thinking and lifelong learning skills – for communication and the implementation of active citizenship. Media and information literacy involves the ability to work with any sources of information (oral and written; analog and electronic/digital).

UNESCO, in addition to the definition of "media and information literacy", proposes to use the term "digital literacy". Digital literacy is the ability to use digital technologies to discover, evaluate, use, and create information; the ability to use information from a variety of sources and effectively solve problems in an electronic environment. Digital literacy includes

the ability to read and interpret digital media, reproduce data and images using electronic devices, and evaluate and apply new knowledge gained from the electronic environment. In the member countries of UNESCO, projects aimed at improving the level of all types of media literacy are actively developing *(Law N., Woo D., J. de la Torre, Wong G., 2018)*.

One of the main competencies of a media literate person is the ability to think critically. According to UNESCO's definition, critical thinking is the ability not just to take all suggestions on faith, but to study and analyze information and ideas for the purpose of understanding and evaluation. Critical thinking is considered one of the "flexible" skills (soft skills), which must be developed regardless of the field of professional activity.

2. The way publications build trust and loyalty

In addition to legislation, for the most part the media adhere to ethical principles: reliability, objectivity, independence, impartiality. This is how publications build trust and loyalty and how they implement news "an operational information message that contains socially important and relevant information related to a certain sphere of life of society as a whole or its individual groups." *(Wikipedia: The Free Encyclopedia, 2022)*. It is unlikely that a newspaper or magazine will be trusted, bought and read if the publication publishes fakes "a fake or imitation of news (manipulative distortion of facts; disinformation), which was created with disregard for editorial norms, rules, processes adopted in the media to ensure compliance and verification, and which does not withstand any, even superficial, checks for compliance and reality, but, despite this, has a powerful impact on the consciousness of a large number of people" *(Wikipedia: The Free Encyclopedia, 2022)*.

Major publications such as the BBC, The Guardian, The New York Times, The Times, The Washington Post adhere not only to ethical principles, but also take seriously what and how they publish, and most importantly, whether the information they were told is reliable. Therefore, there are fact-checking units in the editorial office, where specialists thoroughly check every fact and all the data that support this fact.

The employees of these departments bear enormous responsibility. Therefore, the facts are checked several times and through different sources. In this profession, the conditions are very strict. Not every publication can afford such a fact-checking unit, so journalists often manage on their own. Although in any case, at the first stage – the acceptance of information – journalists are simply obliged to check both the source and the message itself.

In addition to the publications themselves, there are more than a hundred fact-checking organizations in the world that check and double-check published news from various media. Here are some Ukrainian examples: Stop-Fake, Checkregion-ua, VoxCheck. Each organization, after checking the news, makes a verdict – whether the news is true or not. And each organization has its own rating scale, the most common: truth, manipulation, fake (untrue).

3. Types of misleading information

At our course "Media Literacy and Critical Thinking" students should know the differences of fake information. There are three types of misleading information: misinformation, disinformation and malinformation, which become a serious concern for consumers and organizations.

The Canadian Centre for Cyber Security gives such identifications of these types:

Misinformation refers to false information that is not intended to cause harm.

Disinformation refers to false information that is intended to manipulate, cause damage, or guide people, organizations, and countries in the wrong direction.

Malinformation refers to information that stems from the truth but is often exaggerated in a way that misleads and causes potential harm*" (Canadian Centre for Cyber Security, 2022)*.

Media Defence defines false information in that way:

"Misinformation is information that is false, but the person who is disseminating it believes that it is true.

Disinformation is information that is false, and the person who is disseminating it knows it is false. "It is a deliberate, intentional lie, and points to people being actively disinformed by malicious actors".

Malinformation is information that is based on reality but is used to inflict harm on a person, organisation or country" *(UNESCO, 2018: 44)*.

So, we can give our students the generalized definitions that:

Misinformation is a false information, unintentional mistakes such as inaccurate dates, statistics, translations or even satire, which is not intended to cause harm.

Disinformation is fabricated or deliberately manipulated content to cause damage, or guide people, organizations, and countries in the wrong direction. It is often motivated by the desire to make money, have greater political influence, or sow chaos for chaos's sake.

Malinformation is a deliberate publication of true information, the sharing of it is meant to cause harm on a person, organisation or country.

4. Varied kinds of misleading information

Disinformation can become misinformation if something is proven wrong, but people keep posting. Malinformation can become disinformation with enough social media virality, shifting the initial narrative. It is rather important to understand the varied kinds of the misleading information: satire or parody, false connection, misleading content, false context, imposter content, manipulated content and fabricated content.

1. Satire and Parody. Satire and parody are funny and they frames the truth with comedic elements, allowing us to laugh at some unpleasant aspects of life. Satire and Parody use humour to criticize a subject but there is no intention to cause harm, but has the potential to fool.

2. False Connections. Many people are guilty of judging the article after just checking the headline without reading the entire content. False connections are most visible in clickbait headlines that elicit emotion from people. Clickbait titles are not in and of themselves dangerous but contribute to information overload that can overshadow consequential news stories. That is the case when headlines, visuals, or captions do not match the content but it is not rather harmful.

3. Misleading Content. Content is often misleading when the framing of a situation is misrepresented. Rather than sharing information to help people make up their own minds, misleading content often pretends to be objective while arguing a particular point of view, it aims to mislead the result of content, it is not rather harmful.

4. False Context. False context information might reflect a real situation but is purposely skew some context around the information. This is most often evident in image captions, based on the caption the post was meant to give good current press. Images are easy to manipulate and people judge articles depending on a particular interpretation of a photo. But the true content in this case is shared with false contextual information and it is harmful.

5. Imposter Content. Imposter content is meant to look like a real news source but the URL of credible news sites are altered to imitate them. This includes sites like abcnews.com.co, which is meant to look like the ABC News site but contains false or manipulated stories, the genuine sources are impersonated and it is rather harmful.

6. Manipulated Content. Manipulated content includes an multiplicity of fakes, ranging from photoshopped images to deep fake information. While the capture may be real, the image presented was never actually taken but created, the genuine information or imagery is manipulated to mislead that it really happened and it is rather harmful.

7. Fabricated Content: These stories are false.

Some Internet users are confiding to believe fake information because of their prejudices. This type of people would instantly believe information they see no matter how hilarious it is because their perception of truth is clouded. New content that is 100% false, designed to deceive and do harm, and such people even help to spread it *(Iona University, 2023)*.

Tactics for disseminating misinformation, disinformation, and malinformation information shift rapidly and occasionally outpace current evaluative tools. Develop a critical eye when reading internet stories and you will be less likely to share and believe mis-, dis-, and malinformation.

5. Five rules of checking news

The main weapon of the fact-checker is doubt. Professional distrust, reality testing for strength – that's what will help always and everywhere.

1. Origin.

Always look for the original source of the news (fact) or message: how the data appeared, who specifically commented, where the information came from.

And also look for confirmation of the fact or facts from the news in different media that you trust. If the news appeared in several publications at once, there is a chance that it was checked by each editorial office and the news is true. Before using a source for an assignment, or even sharing a link, we need to engage in a moment or two of investigation.

Trust in this or that media, in this situation, falls on your shoulders. Perhaps now is the best time to reconsider the level of trust in the media you trusted before.

2. Opposite side

The principle of journalism is objectivity. That is why it is important that the news consists of the opinions of different experts and parties. Especially if there is an accusation or doubt about any fact in the news.

This is the essence of journalism: it does not give a verdict, it only gives food for thought. Readers should draw their own conclusions.

3. Date and name validation

Perhaps this is the simplest, although in fact it turns out to be the most difficult, rule. Here you need to keep in mind the story about factual errors. They are not intentional, but still, once in the media field, they can give rise to real fakes.

When you read or hear about a research study or quote, follow up by checking into the actual study or quote source. Try to verify the information in multiple sources (you can even try traditional media and library databases)

4. Fact is more important than sensation

Everything that appears on social networks needs to be double-checked, especially photos or pictures. Do not forget: by right-clicking you can always send a picture (photo) to Google search. The Google images service often helps to find the original photo.

Exaggerated and provocative headlines or emotional language are serious emphasis. Headlines or video titles that don't accurately match the content also indicate front-pager. Hoaxers are often motivated by revenue and just want those clicks.

5. Caution – social media

World practice dictates new trends in inspections. Sometimes the media cannot verify the news, so they publish it on social networks with a postscript: "the information is checked, if you know something about it, write to us".

This approach helps in the search for eyewitnesses or data, and also gives rise to public discussions. This is a positive method. The main thing is not to miss an important postscript that the news is being checked and not to post it as a real fact. Therefore, always try to separate emotions and facts.

There are no universal fact-checking rules, there are basic principles. It is important to remember them and try to apply them. Here is useful material that describes in more detail the methods of fact-checking and checking sources for reliability.

6. Conclusions

We can confirm that fact-checking is a central strategy to combat misinformation and it has increased in recent years due to the spread of false news and misinformation, and the need to debunk viral hoaxes. Media and Information Literacy strategies and campaigns, fact-checking and social media verification is becoming increasingly important in the fight against false news and misinformation. Media and Information Literacy strategies include: **human rights literacy** which relates to the fundamental rights to all persons, the right to freedom of expression and protection of rights; **news literacy** which refers to literacy about the news media, including journalistic standards and ethics; **advertising literacy** which relates to understanding how online advertising works and how income is implemented in the online economy; **computer literacy** which refers to basic IT usage and understanding the easy manner in which clickbaits, pictures, and, increasingly, videos can be manipulated to promote a particular narrative; **understanding the "attention economy"** which relates to one of the causes of misinformation and the need for journalists and editors to focus on click-bait headlines and misleading captures to grab the attention of users and get online advertising income; **privacy and intercultural literacy** which develops standards on the right to privacy and a broader understanding of how communications interact with individual identity and social developments *(UNESCO, 2018)*.

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FACTORS OF INCREASING OF SPECIAL EDUCATION
OF SELF-EFFICACY BY FUTURE TEACHERS IN THE USA

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Summary

The article examines the importance of the pedagogical self-efficacy formation of future teachers for working with students with special educational needs, analyzes the influence of a teacher's professional self-efficacy on their self-regulation, and indicates possible options for working with students in the direction of the formation of future teachers of special education pedagogical self-efficacy. It was determined that the concept of «pedagogical self-efficacy» is an integrative education expressed in the teacher's confidence in his own professional competence, the ability to productively carry out pedagogical activities, choosing such means of pedagogical influence that ensure the successful achievement of the goals of the educational process. It was made the conclusion that pedagogical self-efficacy is one of the most important aspects of teacher's professional training. In this key Social-cognitive theory by Albert Bandura was analysed.

Key words: pedagogical self-efficacy, future special education teacher, special educational needs, teacher self-efficacy, self-regulation, special education.

1. Introduction

The problem of self-efficacy appeared in the theory of professional development of the individual, the founder of which was A. Bandura. N. Branden, M. Zimmerman, J. Rotter, D. Myers, J. Martinez-Pons, R. White and others contributed to the study of this problem. Scientists believe that self-efficacy is a fundamentally important quality that affects a person's behavior and performance. Recently, the phenomenon of self-efficacy has attracted more and more attention of Ukrainian scientists, including T. Volfovska, T. Hordeeva, T. Kremeshna, S. Loginov, L. Malts, etc.). They consider it in various fields of knowledge: psychology, pedagogy, medicine, management, administration, etc.

The purpose of the article is to study factors and mechanisms that influence the formation of pedagogical self-efficacy of future teachers of special education in the USA.

2. The concept of pedagogical self-efficacy

Pedagogical self-efficacy is an integrative education expressed in the teacher's confidence in his own professional competence, the ability to productively carry out pedagogical activities, choosing such means of pedagogical influence that ensure the successful achievement of the goals of the educational process. It is one of the most important aspects of teacher's professional training, which allows to productively carry out professional

activities, to interact effectively with students and colleagues, to get satisfaction from work *(Kremeshna, 2008: 1)*.

One of the most prominent psychologists of our time is the American scientist Albert Bandura. Unlike the radical behaviorists, he believed that personality is shaped by the following factors: human behavior, individual characteristics (thinking plays a particularly important role here), and environmental influences. It was Bandura who developed the socio-cognitive theoretical framework, which proposed a multifaceted structure that links correlations between the development and performance of competencies through a highly cognitive process *(Bandura, 1993)*.

Social-cognitive theory, originally called social learning theory, recognizes several factors that lead to the formation of cognitive, social and behavioral skills, including the realization of anticipation with an emphasis on learning through observation. Through his experiments, Bandura found that people can learn through observation, imitation, and modeling behavior. In addition to learning through reward or punishment, Bandura suggested that people can also learn by watching others receive rewards or punishments for their behavior. This is confirmed by the experiment with the Bobo doll *(Bandura, 1961)*. In this experiment, children watched videos of other people performing aggressive actions for which they were rewarded or punished, depending on the group to which the child was assigned. Then, the children were observed playing and their imitative behavior was recorded. The results of this study led to the key foundations of social cognitive theory.

The first principle of Bandura's social-cognitive theory focuses on learning as a cognitive process. His theory views learning as a social construct. This means that learning can occur by observing behavior and observing the consequences of behavior. This statement is the second postulate of the theory and refers to learning through observation. The third postulate of social cognitive theory relates learning by observation to a person's ability to make decisions about the effectiveness of the behavior they observe. This cognitive process adds value to the learning experience and creates something more than just a behavior/reward scenario, which leads to the fourth tenet, reinforcement, which plays a role in learning but is not the only predictor. Finally, the fifth principle assumes that the learner is not a passive recipient of information, but instead is constantly interacting with various influences of cognition, environment, and behavior simultaneously. This mutual determinism led to Bandura's theory of self-efficacy *(Bandura, 1977: 191-215)*.

The theory of self-efficacy can be seen as a motivational construct based on self-perception rather than actual results. Bandura defined self-efficacy as "the belief in one's ability to organize and perform actions necessary to achieve certain results" *(Bandura, 1977: 191-215)*. He suggested that self-efficacy beliefs can influence how much effort is exerted, how persistent people are in overcoming problems, their resilience when faced with problems, and the level of stress they experience during difficult situations.

According to his theory, self-efficacy consists of four factors, including ***mastery, modeling experiences, verbal persuasion, and physiological states***, and it can be influenced by the context in which they develop.

Mastery is the experience of doing something with a high degree of success. Success gives a sense of achievement and belief in one's abilities, while failure and defeat have the opposite effect. It is mastery that gives teachers a sense of self-confidence that helps them overcome obstacles. Young teachers in the first few years of teaching do not yet have experience of mastery. Their self-efficacy is still developing. The positive sense of accomplishment

experienced by young teachers can go a long way toward boosting their self-esteem. At the same time, feelings of anxiety, unpreparedness, constant mistakes and loss of control can negatively affect their self-efficacy *(Tschannen-Moran, M., & Hoy, A. W., 2007: 944-956)*. However, successful performance of a skill does not always equate to high self-efficacy, as other factors can also influence performance. Self-efficacy can vary based on perceived difficulty, biases in one's capabilities, the amount of effort put in, and assistance from external factors.

Learning through modeling occurs by comparing one's own behavior with that of others in similar situations, such as colleagues, classmates, or competitors. Because of this relationship, self-esteem will change depending on the outcome. When the modeling subject is perceived to be similar to the observer (e.g., similar age, gender, socioeconomic status, etc.), successful performance tends to increase the belief in performance. However, it does not mean that differences will interfere with learning. Often, teachers in training are paired with elder, more experienced colleagues, and personality characteristics are not usually taken into account when matching participants. Nevertheless, modeling competence becomes very important in such situations, when the student has much to learn and the experienced teacher has much to share. Self-confidence and low self-efficacy can manifest if they have negative experiences at the beginning of teaching. Similarly, when an experienced teacher is performing well, the student belief in self-efficacy may increase depending on how closely the student identifies with the experienced teacher *(Tschannen-Moran, M., & Hoy, A. W., 2007: 944-956)*.

Verbal persuasion can also lead to increased levels of self-efficacy. When a young teacher receives encouraging words that convey belief in possibility, he will use this information to support their efforts and persevere in difficult tasks because it is easier to believe in themselves when others demonstrate that they can do it. Bandura found that verbal persuasion has the greatest impact on people who have reason to believe that they can make a difference through their actions. This construct can be applied to future special educators who want to make a difference in the lives of children with disabilities. As novice teachers, they may benefit from verbal praise and encouragement, as these self-affirming beliefs can help them develop skills that will help them achieve their goals.

Physiological and emotional states often indicate a person's comfort in a situation through the accompanying somatic indicators. When situations become stressful, people often notice physiological changes (e.g., heart palpitations, shortness of breath, hand tremors, stomach pain, and loss of control). When it happens, people do not feel confident because these somatic indicators can negatively affect performance. A teacher who is feeling joyful may be more motivated and have a higher sense of self-efficacy than a colleague who is experiencing anxiety or high levels of stress in the classroom *(Tschannen-Moran, M., & Hoy, A. W., 2007: 944-956)*. However, people differ in their ability to cope with these somatic states, as some look at them from the inside and others from the outside.

Much of the research on self-efficacy in education has been conducted after graduation, taking into account factors related to current teacher position, school support, and student achievement. However, pre-service teachers spend time in classrooms learning under the guidance of master teachers and university professors. As suggested by Lortie, teachers actually begin observation while being a students *(Lortie, 1975)*. This experience is enriched when future teachers begin to interact with master teachers during the practice *(King-Sears, M. E., Carran, D. T., Dammann, S. N., & Arter, P. S., 2012; Woolfolk Hoy, A., & Burke-Spero, R., 2005: 343-356)*. Studies show that once a teacher's self-efficacy beliefs are firmly established, they hardly change.

3. Practices of self-efficacy skills acquiring by American special education teachers

Over the past 150 years, special education teacher preparation has progressed and evolved from a categorical approach focused on a specific disability category to an integrated approach. The focus has also shifted from segregated instruction to ensuring that students with disabilities have access to general education programs to the fullest possible extent *(Brownell, M. T., Sindelar, P. T., Kiely, M. T., & Danielson, L. C., 2010: 357-377)*. O'Shea, Hammitte, Mainzer, and Crutchfield *(O'Shea, Hammitte, Mainzer, & Crutchfield, 2000: 71-77)* write: "There is a growing consensus in special education that the most important factor is a well-prepared, caring, and qualified adult," but there is still debate in this field about the content of teacher preparation programs. In the controversial publication on the quality of special educator preparation, the U.S. Department of Education concluded that special educator preparation has no value in improving the performance of students with disabilities and reported that "the best available research shows that strong verbal abilities and content knowledge are the things that matter the most" *(U.S. Department of Education, 2002)*. Members of the U.S. Department of Education also noted that graduators of educational institutions are not prepared for the realities of working in a classroom with the students with special needs. After a survey conducted by Bouck *(Bouck, 2005: 309-319)*, more than half of participants indicated that they had no experience working with students with learning disabilities and/or mild mental retardation, and 19.5% felt unprepared to teach students with special educational needs. In another study *(Loiacono, V., & Allen, B., 2008: 120-127)* 80% of special education teachers felt that they were lack of knowledge and ability to use evidence-based methods of teaching students with autism. There are different opinions about the reasons for this lack of preparedness. UDOE members attribute this to the lack of qualified special education teachers in university training programs. Some find the need to increase the number of courses in subject areas, especially for teachers of special education *(Branstad, T., Acosta, A., Barlett, S., Berdine, W., Butterfield, P., Chambers, J., 2002)*. USDOE members consider an accelerated pathway to certification with fewer coursework in teaching methods, but with a greater emphasis on functional academic skills *(Ayres, K. M., Lowrey, K. A., Douglas, K. H., & Sievers, C., 2011: 11-21)*, as students with disabilities who had positive outcomes after graduation usually underwent a highly adapted and individualized program. Such scholars as Widen, Mayer-Smith, and Moon highlight the features that they believe should be the foundation of a special educator preparation program: established values and beliefs of future teachers, coherence and close cooperation between teachers and students, thoughtful field practice with ongoing communication and collaboration, and coherence between teachers, school staff, and teacher candidates during the practice *(Wideen, M., Mayer-Smith, J., & Moon, B., 1998: 130-178)*.

Leaders of the Association of American Colleges of Teacher Education (AACTE) and the International Reading Association (IRA) believe that special education programs will be more effective in a case of full alignment of program vision; carefully designed field experiences; continuous monitoring of teaching quality standards; use of state-of-the-art teaching methods; focus on meeting the needs of diverse populations; and a combination of disciplinary theory and subject matter practice *(Brownell, M. T, Ross, D. D., Colon, E. P., & McCallum, C. L., 2005: 242-252)*.

4. Pedagogical practice as a mean of self-efficacy

University practice can be considered as one of the most important factor in teacher education programs (*Ergenekon, Y, Ozen, A., & Batu, E. S. 2008: 881-891*) but only if it is sufficiently extensive, well planned and carefully supervised. There is a lack of researches on the number and types of field practices in the USA *(Prater, M. A., & Sileo, T. W., 2004: 251-263)*. It is because of the teacher educational programs which have no specify requirements for field-work methods, being opened to the interpretation. Ergenekon and others believe that pedagogical practices should be included in the first three years of theoretical training to demonstrate to students the connection between theory and practice *(Ergenekon, Y, Ozen, A., & Batu, E. S. 2008: 881-891).* Investigation has shown that the collaboration of a teacher and a student while their work in the classroom has a greater impact on the effectiveness of a future teacher than a university coursework (with the exception of behavioral management, the only area in which student teachers relied on coursework to make decisions). This influence has a decisive impact on the students and this is especially true for their future teaching style, methods of teaching and methods of pedagogical problems solving *(Cook, L., 2007: 118-130)*. This fact confirms once again that the cooperation between special education teacher candidates and teachers who have already use effective research-based teaching methods is highly important and necessary. Positive university practice can improve teacher candidates' perceptions of their readiness to teach *(Hersh, R., Hull, R., & Leighton, M., 1982: 1812-1822)*.

5. Conclusions

Summarizing the following it can be argued that educational programs for future special education teachers are advantageous if they are based on a high level of communication and cooperation between university professors, students, and practitioners. The coursework should include a combination of theoretical knowledge, disciplinary knowledge, specific pedagogical knowledge, and their application. To meet the self-efficacy requirements pedagogical practices should be thoughtful and well organized and supervised. These recommendations seem to be easy to implement, but on practice they require substantial refinement of both licensure in different US states and training methods.

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ELEMENTS OF GAME TECHNOLOGIES AS A MOTIVATION FACTOR OF AN INCLUSIVE EDUCATIONAL ENVIRONMENT

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Summary

The article describes the effectiveness of the mechanisms of practical use of game technologies in the environment of inclusive education. The search for optimal ways and the effectiveness of the educational process will be as successful as possible if learning is exciting, interesting, informative, motivating and creative. In connection with today's challenges, the issue of optimization, innovation and availability of knowledge has become relevant. The game as a means of sensory influence for the field of inclusion is extremely important, because it allows people with special needs to adapt to life's difficulties in the future. The paradigm of gaming practices grew as a result of the fact that digital education was institutionalized rather quickly and impulsively. An important transition took place in the system of educational values: the acquisition of experience in the form of informative blocks, the possession of a number of facts, statistics were replaced by the ability to effectively apply the necessary knowledge in the field of practical activity, that is, in life; to be able to choose the main thing, to find the necessary information and to be capable of its practical application. The issue of selecting original methodical practices that would be effective for comprehensive training of students with disabilities remains relevant. Participants of the educational process, who are included in the inclusive platform, are forced to undergo another, universal adaptation in the difficult realities of today. The method of pedagogical observation in combination with a Google Form survey made it possible to analyze the functional significance of game elements in classes in the disciplines of the philological cycle and to prove the effectiveness of the game as a sensory tool among people with special educational needs.

Key words: inclusive environment, game technologies, linguistic competence, innovativeness, creativity, sensory and stress-relieving influence, professional skills.

1. Introduction

Inclusive education as a rather "fresh" practice, not processed by significant experience, is now actively discussed at various conferences, congresses, schools, seminars, which testifies to the relevance and necessity of this topic, in particular, in the dual unity of "war" – "inclusion". It is appropriate to mention the discussion of the sectoral working group "Education and Science" at the MES with the involvement of 145 representatives of international organizations (April 14, 2022) *(Meeting of the sectoral working group "Education and Science" at the MES, April 14, 2022)*. Network society accompanies almost all spheres of human life, while not bypassing the pedagogical sphere, in particular the range of teaching methods in an inclusive key. Today's requirements are no longer reduced to the traditional presentation-explanation of program material, but direct the teacher to a constant search for innovative forms of organization of the educational process.

The variability of the world, its globalization, digitization and amorphousness set the tone for the educational environment as well, which can be seen in a number of transformations, innovations and radical modernization of the pedagogical dimension, in particular in the field of inclusive education. In the conditions of martial law, the basic sense of stability in the organization of living space and a safe stay within the walls of educational institutions have been radically shaken, therefore the inclusive policy is presented with a number of measures aimed at improving the quality of education and forming a motivational component.

The paradigm of game mechanisms grew due to the fact that digital education was institutionalized rather quickly and impulsively *(Kultaieva, 2020: 25)*. Actualization of person-oriented practices in the field of inclusion directs the teacher to use simulation-game technologies in the educational environment. The growing need to implement effective methods in inclusive education has forced teachers to look for such approaches that would take into account sensory-relieving meaning, without overloading a student with special educational needs with an excessive amount of material. Training should be carried out in such a way that it would make it possible to teach the student to perform work independently as much as possible; to quickly, qualitatively and effectively learn the practices needed in the future.

The introduction of game elements as a sensory mechanism is designed to consolidate and motivate the very process of acquiring knowledge. Success in an inclusive environment is possible under the condition of joint creative work of a teacher-mentor and a student who will be interested in realizing himself as a component of this society.

The purpose of the article is to trace the effectiveness of using game elements in an inclusive environment as a sensory factor through the formation of students' basic professional and communicative competencies.

The modern educational space offers a fairly wide range of various game technologies, thanks to which it is possible to realize programmatic educational goals even in the conditions of inclusive education. Constant updating of the content of educational material, improvement of its delivery mechanisms, adaptation to the maximum possibility of implementing a competent approach – all these things cannot be implemented without the use of innovative game practices.

2. Theoretical and methodological role of game elements in inclusive educational practice

According to H. Dubrovynskyi, the realities of war prompt the teacher "to carry out a certain correlation of the expectation of negative forecasts with the implementation of preventive measures with this category in order to have a psychologically healthy society in the

future" *(Dubrovynskyi, 2016: 20)*. The principles of innovation and creativity, the implementation of which is possible with the use of game technologies, become the subject of the laws of Ukraine "On Higher Education", and the content of the doctrine "Strategy for the Development of Higher Education in Ukraine for 2021–2031" clearly prescribes the key rules according to which the development innovative steps becomes a mandatory condition for modernization and optimization of the educational process.

N. Onyshchenko believes that "game technologies are a component of modern pedagogical technologies that allow to intensify the professional training of students in higher education institutions" *(Onyshchenko, 2021: 261)*. The use of gaming technologies in the educational space has been the subject of research by both foreign and domestic scientists. Incidentally, this aspect can also be traced in the works of traditional educators: Ya. Komenskyi, K. Ushinskyi, A. Makarenko, G. Speser, J. Locke, G. Skovoroda.

O. Derkachuk, E. Borshch, O. Chuyko, G. Dubrovynskyi, and O. Kosenchuk randomly indicated the problem of organizing education for people with disabilities. The modern pedagogical space is also full of a number of scientific attempts to study game mechanisms in higher education – N. Kravets, O. Hrechanovska, O. Hrom, N. Machynska, N. Holovko, O. Yakovchuk, etc.

Diluting learning with elements of the game makes it possible to include in the work process of students who have cognitive difficulties, an involuntary act of interruption, which allows the soul to live in a different state, and for the process of mastering the world – orderliness of actions and moderate sequence. The game equivalent is multifunctional: it is a factor of harmony, a means for cohesion, a component of the formation of sustainable interest, an intellectual message, a therapeutic tool, a communicative key, a means of self-expression *(Arestenko, 2017: 20–24)*.

The main function of the game in inclusive pedagogy consists, first of all, in the formation of educational and cognitive interest as a basic component of successful mastery of knowledge. There is a clear line between the concepts of play as a process and play as a type of activity. The game as an activity involves the presence of certain structural elements, such as: goal formation, planning, concrete implementation-implementation, analysis of results. The game as a process has a slightly different "texture". It is about the presence of roles, which the participants distribute among themselves; the presence of action as a mechanism for implementing the game process; playful use of the necessary means-objects, plot and corresponding content *(Selevko, 2017: 52)*. This form allows you to work out the element of socialization of individuals in a normative environment.

The importance of the game and its functional nature was traced by O. Savchenko *(Savchenko, 1999: 7),* highlighting certain constituent elements in the structure of game activity, which, in our opinion, are integral in the conditions of inclusion: motivational (a component that includes needs, motives, interests, aspirations); indicative (this component involves the selection of means and, at the same time, ways of implementing gaming activities into the educational process); executive (it is about a direct set of specific actions and operations, the implementation of which allows the realization of an educational goal); control and assessment (implementation of corrective measures with the aim of additional stimulation to game activity as a means of mental relief in the educational process) *(Savchenko, 1999: 191)*.

3. The functional and methodical role of game elements
in teaching educational and inclusive activities

Game technologies are an integral component in the educational field, in particular, in the process of forming linguistic skills in those students whose communicative component is impaired due to psychophysiological features. Nowadays, an inclusive environment sees

the importance of activating not only social skills, but also strengthening interaction with the world through the word and its correct use. The methodology of teaching the disciplines of the philological cycle should take into account the demands of time and at the same time take care of the availability and clarity of the educational material, because "the intensification of the educational process sets before the teacher the task of finding means to support students' interest in the material being studied and to activate their activities" *(Dekhtyarova, Skvarcha, 2018: 86)*.

The formation of basic competences, among which the communicative one occupies a key place, is the leading goal of the educational program, according to which the training of a linguist specialist is carried out even in the conditions of inclusion. The rational selection of appropriate methods in working with such students requires the teacher's creativity, measured steps, working out the goals and vision of the final result. It is equally important to take into account the reserve capabilities *(Dekhtyarova, Skvarcha, 2018: 86)* of education seekers, in particular, taking into account individual characteristics, cognitive aspects, general development and compensatory components. Students who are endowed with a limited ability to quickly react to any changes process signals from the outside world extremely individually and in a completely different way than do individuals with a normotypical developmental mechanism. Taking into account the importance of introducing game elements into educational inclusive activities, it is worth highlighting a list of functions that can be successfully implemented in work with students who have developmental peculiarities (see Table 1).

Table 1

№	Function	Description
1.	*socially-motivating*	helps students with special needs to develop a sense of their own social significance; aspirations to learn and discover new things, to overcome educational difficulties and cognitive obstacles;
2.	*planned-optimizing*	this function allows you to build the learning process according to the principle from simple to complex – from the understanding of the individual to the awareness of the whole;
3.	*socio-cultural*	by including the game in class, students with disabilities learn to successfully interact with their classmates and the teacher, improve the level of their own culture and social significance, be a strategist and know how to plan;
4.	*creative and constructive*	game moments under "serious" type of work give a great opportunity to show your own original abilities, your idea, feel yourself the author of an idea or product; persons with developmental disabilities are often endowed with certain skills, the manifestation of which in class will ensure confidence in their own abilities;
5.	*sensory-relaxing/motor*	game allows you to switch, relax, feel yourself, your body and possibilities. Such components are extremely important for an inclusive environment. Learning a language is not just monotonous sitting at a desk. You can memorize new vocabulary from English or German through singing or dancing, and you can learn atypical accentuations of words in the Ukrainian language by rapping with these words.

4. Research methods and techniques

The effectiveness of the game in the field of inclusion was tested in the process of using game technologies during the study of theoretical program material and practical forms of work. Students who had cognitive difficulties during tasks were given the opportunity to facilitate the process with the format of the game or the inclusion of its individual elements. During the observation, the paradigm of the effectiveness of the implementation of game methods was checked and studied. For students with disabilities, learning was more effective when the teacher used elements of the game. In addition, a survey was conducted among the teaching staff, which showed how often the teacher uses game techniques in working with students with reduced cognitive abilities and how effective such use is.

Let's analyze the experimental part of our research in more detail. The target audience consisted of students of a higher education institution of I and IV levels of accreditation with normative development and those with special educational needs. All students were within the same educational environment, having the opportunity to communicate, interact socially and perform certain types of work as a team. Three groups of students took part in the experiment, including students with disabilities and cognitive impairments. During 2022 and 2023 gaming technologies were actively used in these groups. The pedagogical experiment showed that the level of motivation and social interaction improved significantly, and the performance of the module and final tests gave positive results – the quality indicator increased by 15%.

In the course of pedagogical observation, it was noted that the students had considerable success when using the technique of improvised role-playing (a student with disabilities prepared a separate question in advance and demonstrated it to his classmates). Those types of work that assumed the presence of so-called role expectations *(Onyshchenko, 2021: 202)* appeared to be quite productive. The game evaluation system, the introduction of rules, the building of fruitful interaction – all these factors also proved a positive dynamic not only during the lesson as an educational mechanism, but also contributed to the improvement of the level of memorization in both normal students and students with disabilities. In those groups where game technologies were actively used, it was noticed that students are attracted to tasks that are designed creatively, have a game connotation and involve a problem-motivational component.

Distance learning and the intensive implementation of digitization technologies in the educational process in general contributed to the rather active use of gadget mechanisms during work in classes. Our proposed use of QR codes with a link to an online game has worked well in the process of acquiring practical skills while learning foreign languages. Thus, 82% of students with normative development and 100% of students with limited opportunities noted such a move as quite modern and creative. 15% encountered technical difficulties.

In the process of teaching linguistic disciplines for students studying under modified and adapted programs, it is important to build a step-by-step mechanism. The teacher must establish the time parameters for the duration of the game, structurally present the rules of social interaction, and at the same time be aware of the dosage and appropriateness of game techniques. A laboratory or practical lesson allows you to simulate the appropriate conditions for the playing field, outline scenarios and roles, define a problem situation, involve all students in solving the problem as a team. P. Shcherban notes that the effectiveness of the game increases if the so-called competitive effect is included *(Scherban, 2014: 288)*. Such a technique contributes to the formation of a motivational component in inclusive students and forms an interest in learning.

The range of game techniques and elements can be quite diverse. In the course of the conducted experiment, the positive effectiveness of the following game practices was noted:

1. "Business performance" – this element of game activity was used during the teaching of the disciplines: "Ukrainian language and academic writing", "Business Ukrainian language", "Foreign language for professional direction". Its effectiveness (55%) was tested during students' modeling of business communication situations (telephone conversation, interview with an employer, business meeting, etc.). Students with disabilities had the opportunity to see a typical communicative situation and record its manifestations through practical implementation. The main task of this method was to form the correct strategy of communicative behavior and establish a business contact, which is extremely difficult for an inclusive environment.

2. Business simulation game – this method allows to realize the motivational factor not only for students with special educational needs, but also encourages other students to be active. The main goal of the simulation game was the formation of problem-communicative situations, where it was necessary to choose ways to solve them and work out with students various communicative and behavioral tactics, functions, social roles and responsibilities. The business simulation game was tested in the following disciplines: "Ukrainian language and academic writing", "Business Ukrainian language", "Professional foreign language", "Culture of business communication", "Media linguistics" (the efficiency was 65%).

3. Game blitz content (the effectiveness was 75%) provides an opportunity to conduct a systematic, competitive survey based on the principle of "brainstorming" *(Halitsyna, 2015: 128)* and at the same time promotes "accumulation" and activation of "forms of active learning" in an inclusive environment. This format provides a motivational factor in the educational activity of all students. The advantages of this game practice are the maximum involvement of the participants and the speed of implementation, obtaining quick results, and most importantly, the involvement of everyone in the work without exception. Multiple repetition, systematicity and planning are important components in the education of children with cognitive impairments *(Lazareva, 2021: 421)*.

4. "Show me – I'll guess" (the efficiency was 85%) – in practical classes in general linguistics during the study of the topic "Language as a sign system" there was exactly this practice. Students with disabilities who had communication disorders were very actively involved in this technique, as they communicated non-verbally. This practice develops empathy, creative thinking, and the use of non-verbal means improves communication.

5. Constructive modeling (efficiency was 65%) – this game practice works great when learning foreign languages. Students are offered a task on knowledge of grammatical laws, which is extremely problematic for inclusivist students. On the other hand, they could quickly compose phrases or sentences from a well-chosen set of elements. The task has time limits and a competitive basis, which makes it interesting, improvisational and effective.

6. "Mirror" (effectiveness was 76%) – students with special needs have problems establishing contacts with other people, so this game in pairs is effective in foreign language classes. One of the pair looks into the "mirror", the other is the "mirror". The phrase is first spoken in the native language, the other participant must quickly translate it into a foreign language, keeping the facial expressions and gestures of their "mirror".

The above techniques proved to be extremely effective in organizing an inclusive educational environment. It was noted that in groups where work was diluted with game elements, the learning process was interesting and constructive, social indicators improved, students with disabilities grew motivated, and most importantly, communication became more expressive. The use of game techniques and methods in the student inclusive audience opens up new and universal possibilities for the implementation of the educational process.

5. Conclusions

The use of interactive learning technologies in the inclusive educational space is gaining momentum. The acquisition of new communicative experience by students with special educational needs is possible under the condition of interesting, modern education, therefore the practice of game technologies actively changes and varies, depending on the course of study, specialty and communicative readiness of the students of education. The use of interactive technologies for teaching the disciplines of the philological cycle is a necessary methodical strategy, since students with limited cognitive abilities have higher indicators of the formation of communicative skills.

Comparing the success of students at the beginning of the observation and after the activation of game mechanisms, it was clearly noted the growth of the qualitative indicator, the strengthening of the motivational component, the formation of cognitive interest. Regardless of the format of the work (lecture, laboratory or practical session; remote or face-to-face), any monotonous theoretical work will be more effective if elements of the game are introduced into it. In the future, it would be interesting to study the experience of foreign linguists and their use of game content in inclusive educational practice. Today's realities once again dictate that a modern teacher must be flexible in choosing methods and forms of work, creatively and student-oriented approach to conducting classes, so that learning becomes an exciting and at the same time interesting continuous process.

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MENTAL SIMULATION SELF-REFLECTION TASKS
FOR INCREASED LEARNING OF ENGLISH

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Summary

The notions of mental simulation and self-reflection have become established in neuroscience. Numerous line of research suggest that mental simulation and self reflection promote enhanced learning in general, specifically foreign languages. Our study explores and discusses these notions for their deeper understanding. The research encompasses smooth simulation with negative outcome and challenging simulation with positive outcome. The paper demonstrates mental simulation self-reflection tasks in correlation with cognitive skill planning. They are embedded within such specific conditions for inducing exploratory behavior as error-approach instruction, tasks with complex and dynamic decision-making characteristics, specific stimulus information (what, when, where) in life situations and peer feedback. The following methods have been used: theoretical methods (analysis, interpretation and generalization), empirical methods (observation). The author provides an example of mental simulation self-reflection tasks with and without problem-solving case study within conditions for exploratory behavior for the topic "Planning a trip to Canada".

Key words: self-reflection, mental simulation, cognitive skill, exploratory behavior, executive function.

1. Introduction

Considering the orientation of the Ukrainian education system towards entering the world educational space, there is a tendency to upgrade the English language education. Convergence of multiple educational tools is essential for accomplishment of this goal. Within the framework of the self-regulation paradigm, the task is to form a personality with the ability to accomplish effective self-reflection for increased learning of foreign languages. Thus, the relevance of the study arises from the need to induce learning by means of self-reflection. The scope of self reflection or self regulation comprises its different aspects (obstacles in learning *(Natress, 2007)*, trial and error approach in self-reflection *(Shinn, 2023)* and others. Our research paper is limited to mental simulation self-reflection within conditions for exploratory behavior.

Particularly, the research object is the mental simulation self-reflection task in correlation with the cognitive skill planning. The purpose of the study is to demonstrate mental simulation self-reflection tasks. The novelty of this methodology implies the demonstration of mental simulation self-reflection task with targeted cognitive skill planning and within certain conditions for exploratory behavior.

We address the following research question:

1. Which mental simulation self-reflection tasks can induce increased learning of foreign languages?

The rest of the paper is organized as follows: The Introduction presents and discusses the research object, purpose and novelty of the study. The Literature reviews highlights scholars'

views on self-reflection, mental simulation and conditions for exploratory behaviour. Benefits and drawbacks reveal positive and negative features of mental simulation self-reflection tasks. The part Methods includes information about methods used for research. The section Mental simulation self-reflection tasks demonstrates sets of tasks within condition of exploratory behavior. Conclusions present summaries of the research paper.

2. Literature review

There exists a considerable body of literature on the concept and types of mental simulation *(Cole, 2021; Hamrick, 2019)*. Despite various definitions, the conceptual idea that mental simulation – the capacity to imagine what will or what could be is the same one. Interactive ways of undertaking a simulation-based activity via specific devices have been proposed *(Hall, 2017; Landriscina, 2013; Landriscina, 2009)* as a suitable medium for increased learning. We support such types of mental simulation as smooth process with a negative outcome and the challenging process with a positive outcome for enhancement of increased learning of foreign languages in addressing future events which are approximate real situations *(Zhong, 2021)*.

Simulation-based learning allows students to prod at simulation issues from different directions and to be ready for scenarios and environments designed to accurately possible real situations. Thus, reseachers *(Kozyar, 2022)* experimentally confirmed the instructional effectiveness of simulation based on studies about autonomous learning and simulation training for the development of foreign language competencies of students majoring in Translation.

Students may be able to probe simulation difficulties from several angles, not just with specific simulation instruments. Unfortunately, there are no studies on the effectiveness of mental simulation self-reflection tasks without simulation training devices. Moreover, despite a rather active upgrade of insights about self reflection and mental simulation studies, their combination has not revealed specifically. Furthermore research papers contribute to the understanding of self-reflection and mental simulation in general *(Suryarini, 2021)*, but do not explore cognitive skill planning together with mental simulation and self-reflection.

In the realm of cognitive functioning, executive function plays a pivotal role in our ability to plan, organize, and execute tasks effectively. Within this framework, cognitive skill planning emerges as a crucial aspect, encompassing the ability to set goals, anticipate obstacles, and strategize for successful learning and cope with life communicative situations. Understanding the intricacies of cognitive skill planning can shed light on how we navigate the complexities of learning and achieve our desired outcomes. Cognitive skill planning is essential in various communicative situations in the learning process of foreign languages.

A number of scholars consider cognitive planning as problem-solving ability for efficient performance *(Cognitive planning, 2022)* These views are very relevant for us, because we address mental simulation self-reflection tasks in correlation with real to life planning problem-solving case studies. In particular, it seems important to expand the students' self-reflection in relation with planning as regards their cognitive enhancement in the learning process of overcoming obstacles and making errors.

Furthermore, self-reflection mental simulation tasks have emerged as a potential strategy to enhance self-regulation abilities in planning in prefrontal cortex *(Mitchell, 2011)* and reinforce neural circuits involved in learning. One of the tough challenges for us in this self-reflection domain is to adapt mental simulation self-reflection tasks in planning to conditions of exploratory behavior.

However, to the authors´ best knowledge, there are some publications about exploratory behavior but there are no research findings available in the literature that address the issue of

optimal ways to induce increased learning in the context of real to life situations in learning of foreign languages within mental simulation and exploratory behavior.

Recent literature analyses and compares various aspects of conflicting conclusions regarding effects of exploration on performance in active learning and condititions for exploratory behavior *(Hardy, 2014)*, yielded results about brain mechanisms for exploration *(Charron, 2012)*.

Taking into account the fact that it is exponentially challenging to learn for students, we have endeavoured to distinguish the following conditions for exploratory behavior

1. Tasks with complex and dynamic decision-making characteristics *(Jay H., 2014)*.

2. Error-framing instructions on exploration *(Jay H., 2014)*.

3. Specific stimulus information (what), spatial location (where), contextual information (which), observational recency and time of day (when) (*Johnson, 2012; Zhou 2009; Eacott, 2004; Dix, 1999*).

4. Peer feedback *(Karol, 2015)*.

All these conditions have been chosen by us because there is evidence-based research that has shown promotion of students' exploratory behavior in learning. By incorporating tasks with complex and dynamic decision-making characteristics, students are encouraged to think critically and explore different solutions. Error-framing instructions help students view mistakes as opportunities for learning and experimentation. Providing specific stimulus information gives students a starting point for exploration, while peer feedback allows them to receive input from their peers and further refine their exploratory skills.

3. Benefits and drawbacks of mental simulation self-reflection tasks

Mental simulation tasks allow learners to engage in realistic scenarios and practice decision-making, which can lead to improved cognitive abilities and practical application of knowledge. Thus, students get enriched in the following ways: • they become aware of their strengths and weaknesses; • they expand their cognitive skills; • they robust their metacognitive skills, particularly critically thinking skills; • it might encourage self-motivation or self-directed learning; • it may make students more responsible for their learning; • students' visualization is enhanced.

On the other hand, a drawback of mental simulation tasks is that they may require a significant amount of time and effort to create and implement effectively. Additionally, some students may struggle with the instruction of these tasks, making it challenging for them to fully engage and benefit from the learning experience and might be reluctant to accomplish these tasks because they demand much more cognitive load than just finding and recognition of mistakes.

4. Methods

To achieve the required solutions the following research methods were used: theoretical methods (analysis, interpretation and generalization), empirical methods (observation, conversation).

5. Mental simulation self-reflection tasks

The activity-based stage implies the preparation of a series of tasks in correlation with conditions of exploratory behavior which maintains curiosity and desire to learn. These tasks are aimed at integrating mental simulation through reflection and exploratory behavior in correlation with planning. We demonstrate mental simulation self-reflection tasks for the situation "Planning a trip to Canada" without and within problem-solving case study. This variation

involves presenting two types of instructions and also mixing new vocabulary and grammar with those previously mastered. Presenting unknown words in bold interspersed with known material is a much more efficient and effective form of instruction. Mental simulation is shown with the first conditional what if… The conditions for inducing exploratory behavior are followed in the next way.

1. Error-approach instruction.

1.1. There are intentionally made grammar mistakes.

Grammar mistakes. *How will I behave if I will plan everything in the **upright** way but my plans fail?* (if I will plan grammar mistake in the 1 st conditional) *What if the most challenging part of planning for travelling is **determine** what to see and where to go will be difficult for me but with positive outcome?* (determine instead of determining).*There are a bunch of information* (there are instead of there is). *When you have arrived, there was a bad weather all the time contrary to the forecast.*(There was instead of there has been).

1.2. There are the following questions which contain the word mistake and make students critically think about them in the context of the particular situation.

Which mistakes can be made by me? Which mistakes can be avoided? Which mistakes won't you make?

2. Tasks with complex and dynamic decision-making characteristics are demonstrated within problem-solving case study which facilitates students to find solutions for real to life problems.

3. Specific stimulus information (what-travelling -when next month-where Canada)

4. Peer feedback is determined by the following instruction. Share your responses with a partner. Give your comments for partner's answers.

Answer the following questions. Share your responses with a partner.
Give your comments for partner's answers.
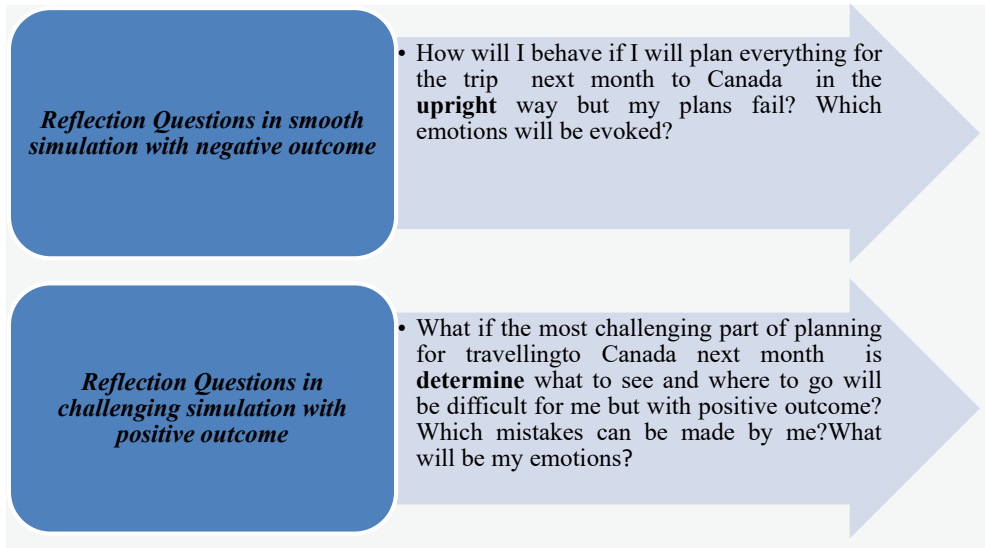
Fig. 1. Mental simulation self-reflection tasks for the situation
"Planning a trip to Canada"

Problem-solving case studies

- **1.** You have read long **travelogues** to avoid stress while planning for the trip to Canada next month may not really help and search for travel groups on social media sites for the places you want to visit.But too much information has caused confusion therefore when there are **a bunch of information** available on the internet and guide books, it always becomes a problem for one to choose the best holiday destination. What steps will be taken by you to avoid this confusion? Which mistakes can be avoided? Which emotions will be evoked by them?
- **2.** You have planned for the trip to Canada next month everything in the best way. When you have arrived, there was a bad weather all the time contrary to the forecast.Your emotional stability is connected with weather. You have packed unrelated clothes and you have experienced **meltdown** from the scorching heat. What if you plan to adapt to it with minimum spending money on new clothes? How will you **mind your ps and qs**? Which mistakes won't you make? What will be your emotions?

Challenging mental simulation with positive outcome

**Fig. 2. Mental simulation self-reflection tasks for the situation
"Planning a trip to Canada" within problem-solving case study**
(challenging simulation with positive outcome)

6. Conclusions

In conclusion, this research paper delves into the concepts of mental simulation and self-reflection to enhance the learning of foreign languages, particularly English. The study emphasizes the importance of self-reflection as a tool for effective foreign language learning and presents a novel approach that combines mental simulation with self-reflection within the framework of exploratory behavior and cognitive skill planning.

The core of the paper lies in the presentation of mental simulation self-reflection tasks, exemplified in the context of planning a trip to Canada. These tasks are designed to encourage exploratory behavior and cognitive skill planning in students learning a foreign language. They include error-approach instructions, complex decision-making scenarios, specific stimulus information, and peer feedback.

The paper's main findings suggest that incorporating these mental simulation self-reflection tasks into the English language education can offer several advantages, including improved cognitive and metacognitive skills, enhanced self-motivation, and a deeper understanding of own strengths and weaknesses. However, it also acknowledges potential challenges, such as the time and cognitive load required for task implementation.

These findings not only have clear implications for theoretical understanding of mental simulation effects but may aid professionals seeking ways to induce increased learning of foreign languages. Furthermore, new research programs will benefit delineating both theoretical framework for mental simulation self-reflection tasks and their practical implications.

Given that one of the most important reasons for using mental simulation self-reflection tasks is to emphasize students' responsibility and ability to visualize and plan. When the

individuals find themselves responsible for their own learning, it increases their accuracy and attention and reduces their distraction; so lecturers, can encourage students to engage in doing mental simulation self-reflection tasks.

Another fruitful avenue for future work would be exploring another types of mental simulation in correlation with different cognitive skills that make up executive functions and consequently elaboration of new mental simulation self-reflection tasks.

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TURKISHNESS AND TURANISM
IN THE CREATIVITY OF MUHAMMAD HADI

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Summary

The article examines the problem of Turkism and Turanism in the poetry of one of the Azerbaijani romantics, Muhammad Hadi. It is shown that his work in the magazine "Füyuzat" and being a representative of the "Füyuzat" literary school increased the opinion of Turks from the beginning of his work. The idea of homeland, nation, and people described in his articles, his attitude to the issue of literary language, and his poems were also related to Turkism. Like A. Huseynzadeh, I. Gaspıralı, H.S. Ayvazov, M. Hadi not only defended the all-Turkish literary language, but even considered it necessary to adopt the Ottoman dialect of this language. The processes that took place around Turkey during the First World War, his presence in the war, strengthened the position of Turkism and Turanism in his work, and the ideology of Turkism, which appeared in the language of his poems and articles at the beginning of his work, deepened and gained new content. In his poems written during the republic, he calls for Turkish unity. In many of his poems written during this period, the poet calls to protect the independence won by the Turkish nation and to protect the motherland from the enemy. Although the idea of Turan and Turanism are not clearly emphasized in M. Hadi's poems, the spiritual map and ideology of the image of Turan are drawn in the poetic understanding of the ideology of Turkism.

Key words: Hadi, creativity, "Füyuzat", language, Turkism, Turanism, ADR.

1. Introduction

Although Muhammad Hadi came to the idea of Turkism and Turanism in his poetry during the Republic period and glorified this idea in his poems, he had gone a certain way before that. This path he took was almost focused on the thought of Turkism and Turanism. Only the fact that he started working in the "Füyuzat" magazine and was a representative of the "Füyuzat" literary school increases the opinion that he was a Turkic person from the very beginning of his work. This is shown by his articles, his attitude to the issue of literary language, and the glorification of the idea of homeland, nation, and people described in his poems. It is no coincidence that this quality in the poet's work was a reason for Soviet ideology to put him on the list of reactionary romantics for a long time, and only after the 50s it was possible to analyze and write about him in the context of progressive romantics.

2. Main text

It is known that at the beginning of the 20th century, A. Huseynzade's polemical writings, first in "Hayat" newspaper, and then in "Füyuzat" magazine, both about the literary language he used and the formation of the all-Turkish literary language, highlighted this problem.

Its goal was to achieve the creation of a common Turkish literary language that would unite the Turkic peoples. In fact, the All-Turkish literary language was considered one of the first stages to realize the idea of cultural unity of the Turkish peoples, which was included in the program of the "Unity and Progress" society of Turkey. A. Huseynzade also implements this idea as much as possible in the language of himself and his friends gathered in newspapers and magazines, and in his articles he often not only started a debate about this problem, but also supported it. One of the first defenders of his idea of a universal Turkish literary language, Muhammad Hadi, defended the position of a universal Turkish literary language not only in the language of poetry, but also in his articles. A. Huseynzade states that this movement started by "Hayat" has spread and affected press organizations such as "Irshad", "Ulfat", "Burhani Taraqi", "Dabistan" and called them "children of "Hayat". About the supporters of the All-Turkish literary language, he mentioned M. Hadi's name and wrote: "…Most of those who publish these newspapers or help those who publish them are former editors of Hayat. The sentences of Ahmad Beys, Abdurrashids, Hasan Sabris, Abdussalimazadeh Shirvanis are those who play with the pen in the columns of "Life" *(Huseynzadeh, 1997:205)*. "Abdüsselimzade Shirvani" mentioned here by A. Huseynzade, that is, the language of Muhammad Hadi's poems was written in the all-Turkish context, and he was also one of the main defenders of this idea in the discussions in the press. Like A. Huseynzadeh, I. Gaspıralı, H.S. Ayvazov, M. Hadi not only defended the all-Turkish literary language, but even considered it necessary to adopt the Ottoman dialect of this language. M. Hadi wrote openly in his article "Bayani-tasawvur fi khusul lisan": "I don't know others, I think those who are looking for a foreign language will eventually get tired and regret it. Let's accept the Ottoman language without controversy or conflict, this is not a place to hesitate" *(Hadi, 1906:2)*.

The direction of Turkism is increasing in the artistic works of Mohammad Hadi; influenced by the creativity of Turkish poets such as Tofik Fikret, Namiq Kamal, Abdulhag Hamid, he changed his subject and problems. If at the beginning of his work he mostly wrote about school and educational problems, he turned to human problems under the influence of Turkish poets. During the First World War, he went to Turkey and worked in newspapers and then participated in the war, which made the poet turn his face to the Turkish world. With the establishment of the Azerbaijan People's Republic, the idea of Turkism and Turanism began to be glorified in his work. This period can also be evaluated as the period of the Republic. Literary critic Y. Garayev characterizes this period as the third renaissance, the third period of national-liberation romance in Hadi's poem after "…world sorrow". *(Qarayev, 2005:6)*. Until then, romantic descriptions of the idea of homeland and nation were quite common in the poet's works. In dozens of poems "Amal", "Bir amalim", "poor nation" and others, the poet wrote about the nation's present and thought about its future. In the poem "Bir amalim", the poet's lyrical hero thinks about his homeland, the nation, and wants its destiny to be good. One of the most sacred deeds and actions of a lyrical hero is to see his people and nation happy:

> Ey vətən! Ey pəriyi-vicdanım!
> Kəsmə bizdən nigahi-şəfqətini,
> Eylə ilqa dilə məhəbbətini,
> Səni sevmək deyilmi imanım?
>
> Dili məhzun edən bir halətdir,
> Qıldım izhar iştə həsrətimi,
> İstərəm bəxtiyar millətimi
> Qəlbdə bəslənən bu biyyətdir *(Hadi, 1906:55)*.

As the lyrical hero of M. Hadi thinks about great ideals, he also fights for these ideals. He is looking for ways to eliminate oppression and liberate the people. The fate of the nation is always higher than the fate of individuals, and the greatest desire of the lyrical hero is to uphold the fate of the homeland and the nation. The romanticist scientist Vali Osmanli, referring to this ideal of the poet's lyrical heroes, writes: "Hadi's special romantic hero types are certain in the themes of homeland and nation. Each of them carries some high ideal in his romantic nature." *(Osmanlı, 2014:94).*

With the establishment of ADR, a new stage in the creativity of M. Hadi begins. At this stage, the poet glorifies the implementation of the idea of the homeland, the nation, which he has glorified in his poetic and publicistic works until now, and the direction of Turkishness with open text. "Turk's song", "Victory-toward the end", "Mamayi-kainate", "Life-inspirations of our present", "Foreign country in foreign countries", "The voice of time and the word of life", "Martyrdom-dedication to the spirit of our freedom", " In his poems "Mafkureyi-aliyamiz" (Azerbaijani state-novzadina), "To our soldiers-volunteers" etc., he described the newly won national independence. But most importantly, he expressed great confidence in the future of the Turkish people and nation. At this stage, he called the people by his name and took their struggle for freedom and national independence as a part of the Turkish race. He confidently stated that Turan consists of the spiritual unity of Turkish peoples and that the blood shed by Turkism for this unity and path will not go in vain. In his poem "Turkun nagmasi", which he wrote on September 15, 1918, in the early days of independence, he praised the blood shed by Azerbaijani Turks for independence:

Türkün tökülən qanları bihudə gedərmi?

Diqqətlə düşün, yoxsa bu qan həpsi hədərmi?

Dörd ildə verilmiş bu qədər can hədər olmaz,

Məfkurə yolunda tökülən qan hədər olmaz,

Qiymətli olan xuni-şəhidan hədər olmaz,

Dul qalmış olan noheye-nisvan hədər olmaz,

Bax sən sonuna, himməti-türkan hədər olmaz,

Bədbəxt olan əfgani-yetiman hədər olmaz *(Hadi, 1918:2).*

M. Hadi believed that today and tomorrow of the Turkish race are in safe hands and that this future is through freedom and independence. One of his main duties is to fight and win victories and protect the independence of the Turkish race so that it does not return from this path it has taken. Literary critic Alkhan Bayramoglu comes to the following conclusion about the formation of this clear goal of the Turkish nation, the ideology of independence: "Hadi declares with the pride and courage that comes from within that even though the world is turned upside down and comes out of its destruction, the Turk himself is "direct-action", his own action. He will not turn back from moving forward. What makes the poet's chest swell with pride is that, historically, the knee of the Turks did not tremble in any battle, including the war of independence" *(Bayramoglu, 2003:34).* In his poem "Turkun Nagmasi", the poet did not mean only the war of independence of Azerbaijan, but the whole Turkish area. Thus, the withdrawal of Turks from a large area during the First World War, as well as the national independence struggle of individual Turkic peoples, made the poet think about the entire Turkish race. All the Turkic peoples are connected to each other today, as they were historically. This connection determines the formation of Turan, the spiritual unity of these peoples in terms of language, culture and ethnicity. The poet poetically evaluated this spiritual unity as follows:

Qan ilə qazandıq zəfəri, verməyiz əldən,
Xof eyləmədik atəşi-dəhhaşe-düvəldən.
Bir zərrə belə qorxmayırız dəsti-əcəldən,
İstərsə cahan çevrili, varsın da təməldən,
Türkün üzü çevrilməyəcək səmti-əməldən.
Türklər geriyə dönməyəcək müslih əməldən.
Yüksək yaşamaq istər ikən cümlə miləldən *(Hadi, 1918:2).*

M. Hadi glorifies the Turk's victory in his poem "Zəfəri-nəhaiyəyə doğru…". By saying "Mərd olan əsgərliyi təqdir edər əzyan ilə,//Əsgər olmaq bir şərəfdir hər möminə Quran ilə"(A brave person appreciates military service with courage,//Being a soldier is an honor for every believer with the Quran), he makes the people worship the Quran he believes in, and in this way he says that it is honorable to die for the country, the nation, and the people. Because the Turkish nation has always protected its "honor" through its struggle. Since this is historically the case, they are not afraid because they have a glorious history. Millions of Turks are ready to "sacrifice with their lives" to protect their history, honor and dignity:

İştə bax! Türkün hilali nuri-bəxş şərqdir,
Şerqi-tənvir eyleriz əlbət məhtaban ilə.
Millətim uğrunda çıxsa belə qəbrim qarşıma,
Qəbrimə qarşı qaçardım: çöhreyi-xəndan ilə *(Hadi, 1918:2).*

The Turkish crescent and stars became one of the main descriptive objects of many of the poet's poems, and he constantly glorified it. In the poem "Mehtab-shetta", he once again thinks about Turkishness and the Turkish nation, and expresses his hope that "this nation, which needs a free life", will get rid of humiliation. While looking at the moon in the sky, the following words inevitably come to the poet's lips: "Türk aləmi yıxılmaz, bənzər dedim bu dağə" ("The Turkish world will not fall, I said it is like this mountain.") The poet wants to say that the Turkish nation will always exist as this mountain existed millions of years ago.

In M. Hadi's poem "Mafkureyi-aliyamiz" dedicated to the state of Azerbaijan, he again faces the glorious history of the Turkish world and expresses his belief that hope will shine on the face of the Turkish nation saying ""Qaldır səmayi-şövkətə nəcmü-hilalınızı,/Göstər bu ərzin əhlinə caylü-cəlalınızı"(raise your flag to the sky, show your power to the world). Although he calls the Azerbaijan state a "Turkish state", he does not separate it from the Turkish world and world, he calls this world to renaissance, development and independence:

Aç kainatı-rüfətə şöhbəli-irtiqa,
Saç kainatı-millətə ənvari-etila.
Türk aləmində parlasın ənvari-intibah,
Gülsün həyatımızda da izhari-intibah.
Olsun bu yurdumuz çəmənarayi-mərifət,
Əhli-vətən də bulmalı iqbalü-məsədət *(Hadi, 1919:2).*

In April 1919, M. Hadi wrote two poems with the same name, that is, "To our soldiers-volunteers". The first poem was published in "Azerbaijan" newspaper on April 22, and the second poem was published on April 23. However, the poem published in the April 23 issue is not a continuation of the previous poem. Although M. Hadi published this poem with the same name, he brought the lines of the Turkish poet Namig Kemal "Arş iləri, bizimdir faləh,//Arş yigitlər, vətən imdadinə!" as an epigraph to the second poem. The meaning of the poet dedicating two consecutive poems to the soldiers was great. The homeland was in trouble; The homeland had just become independent. But there were great threats to the independence of the Motherland; to eliminate these threats, everyone

had to come to his aid and protect him. A lot of march poems were written during this period. In these poems of M. Hadi, the style of the march showed itself. The poet called on all representatives of the people and the nation to protect against invasion. Of course, soldiers were the first to protect the country's independence. The poet turned his face to them and wanted them not to be frightened by the fact that the Motherland is in trouble, and that danger is imminent:

Millətin namusu sizdən çox şücahət gözləyir,
Dövləti-növzadi-Milli qalibiyyət gözlıyir,
Bəkləyir sizdən zəfər: atimiz, istiqlalımız,
Şanlı qeyrət, şanlı himmət, şanlı cürət gözləyir.
Bir baxın nisvani-iffətpərvəri millimizə,
Dideyi ümmid ilə sizdən həmiyyət gözləyir.
Payimali-düşmən olsunmu çəmənzari vətən!
Yurdumuz sizdən bu gün çox ali hikmət gözləyir *(Hadi, 1919:2)*.

The poet believes that his zealous, patriotic compatriots will protect the independent homeland with determination and will not allow the enemy to touch it. The poet's poem of the same name, written a day later, is larger in volume. It seems that the poet found it necessary to turn to the soldiers and volunteers on this difficult day of the motherland and called them to defend the motherland. "Qorxutmamalı bizləri yollardakı əngəl, //Məfkurəyə doğru: yürü, qoş, durma çapıq gəl!"(We should not be afraid of the obstacles on the roads, //Toward the ideology: go ahead!"), – the poet says that the people will not forget his struggle for the nation. The poet assures him that their protection of the motherland from the enemy will not allow "the hand of a stranger to touch the motherland". The poet makes his request in the plural form, adding himself to that line: "Amalımıza doğru şitaban olalım, gəl!// Millətlə vətən rahinə qurban olalım, gəl!"(Let's step towards our goal, come!// Let's be a sacrifice for the nation and the motherland, come!) *(Hadi, 1919:2)*. To die on the path of the homeland also meant to die on the path of ideology. If you want to see your country free and independent, you must protect it from enemies and foreigners. This poem of the poet fully contains the ideology of Turkism and wants unity, equality and everyone to stand up for the salvation of the threatened Turkish homeland. His lyrical hero sometimes calls for protection, sometimes he sees himself as a volunteer soldier, and sometimes calls them to protect freedom saying "Bil ki, vətənin sevgili candır,//Vermə bunu ağyar əlinə, rəhm et, amandır"(Know that your country is a dear soul,//Don't give it to the enemy, have mercy). Because:

Millət yaşamaz yurdunu zəbt eyləsə düşmən,
Gəldikcə xəzan fəsli sönər rövnəqi-gülşən,
İstərsən əgər yurdumuz olsun da: işıq, şən,
Göstərməliyiz düşmənə bir cürəti-rövşən,
Qurban vətən olmalı: bir can ilə bir tən,
Ən ülvi səadət: vətən olsun tənə mədfən *(Hadi, 1919:2)*.

The melody of these poems of M. Hadi is based on the rhythm of war, battle, and march. The poems of this period specifically describe the Azerbaijan Republic and its independence, as well as the ideal and ideology of Turkism. In many of his poems, the poet refers to the Turkish world, remembers its glorious past and boasts about it. However, this stage does not last long, both in terms of time and in terms of the number of poems, this stage is very short. Because the unfortunate life of the poet ends tragically, and for a long time it is not even known where his grave is.

3. Conclusion

Thus, at the beginning of M. Hadi's work, the ideology of Turkism, appearing in the language of his poems and articles, deepens and acquires new content. The tragedies that befell the Turkish world during the First World War drew the poet's attention to it, and his poems describe the glorious past of the Turkish nation. In his poems written during the ADR period, he again calls for Turkish unity. In many of his poems written during this period, the poet calls to protect the independence won by the Turkish nation and to protect the motherland from the enemy. In these poems, the most important issue of the poet is the formation of the ideology of Turkism. He tried to give a poetic understanding of this in his poems. It is true that although the idea of Turan and Turanism are not clearly emphasized in M. Hadi's poems, the spiritual map and ideology of the image of Turan are drawn in the poetic understanding of the ideology of Turkism.

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INNOVATION, WORK, SOCIETY

INTERNET AS AN IDEOLOGICAL STATE APPARATUS

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Summary

This article analyzes the role of the Internet in modern society as an ideological apparatus of the state. The emergence of modern means of communication and mass communication (the Internet, mobile phones, etc.) created the possibility of receiving, storing and transmitting information without the direct participation of various subjects (public associations, authorities, politicians, parties) that impose their perception of the world. The authors consider how the transformation of ideology takes place, how it adapts to the information society. The article proves that ideology, despite certain negative connotations and, as it seemed ten years ago, a partial loss of influence, is still not an anachronism and remains a powerful tool for influencing mass consciousness. The authors analyze the key aspects of the impact of internetization on the formation of social consciousness and values. The article contains the results of a study of the use of the Internet by political forces and powerful groups that use the Internet to spread ideological views and influence citizens. The authors address the issue of privacy policies as dictating the agenda for the perception of various kinds of minorities and inequalities, and at the same time creating conditions for limiting freedom of thought. The main theses of the article are illustrated by individual examples of Internet platforms, such as the social networks "Facebook", "Instagram", as well as the streaming platform "Twitch".

Key words: internetization, mass consciousness, ideology, ideological state apparatus, freedom of thought, political correctness, manipulation.

1. Introduction

Today, the Internet has become not just a technological achievement, but also a powerful tool that affects all spheres of social life. In recent decades, internetization has changed the way we perceive information, communicate, consume, and even the way we imagine the world around us.

The relevance of the article is determined by the active integration of the Internet into almost all aspects of social life. Humanity is steadily entering the digital era, which is revolutionizing methods of communication in general and ideological influence in particular. This digital transformation overturns the usual ideas about the spread of ideologies, creates new opportunities and challenges for their development and influence on society. Internetization today is a step in the formation of an information society, in which the exchange of ideas and the formation of ideologies take place in fundamentally new conditions and according to new mechanisms in the unique environment of virtual reality. In this article, we will determine the impact of Internetization and social networks on the development and transformation of ideology, analyze the key challenges and opportunities that it opens up for further scientific understanding of the phenomenon of ideology.

The purpose of this article is to characterize the Internet as an ideological apparatus of modern states. Let's try to find out how the Internet affects the formation of views, values and beliefs of society, as well as the way it is used by states to preserve relative social stability and legitimize the existing system.

The goal involves solving the following tasks:

1) analysis of the Internetization process, its consequences, as well as the impact of the Internet on mass consciousness;

2) formulation of the definition of ideological state apparatus;

3) analysis of individual cases of ideological influence that can be carried out through Internet platforms;

4) study of the potentially negative consequences of using the Internet as an ideological apparatus.

2. Internetization and popularization of the Internet

In order to better understand the modern direction of the development of ideologies, we need to describe and better understand the space of the Internet, as one of the main modern means of broadcasting norms and values, worldview models, etc. Let's consider how Internetization began and gained momentum – the spread of mass use of the Internet, equipping the masses with means of accessing the Internet. Internetization can be forced or voluntary. An example of violent Internetization can be considered the digitalization of bureaucratic structures, during interaction with which a person needs to use the Internet, and, accordingly, in this way, the number of users of the World Wide Web increases.

Another process that increases the spread of the Internet is the *popularization of the Internet* – the promotion of the Internet by people (both consciously and unconsciously) with the aim of making it not just known, but desirable. This process is aimed both at an individual person and an entire social group. His goal can be achieved in many ways, including manipulation.

It is important to note that Internetization and popularization of the Internet are not synonymous, as it may seem: while Internetization leads to the development of the possibility of mass use of the Internet (as a worldwide system of interconnected computer networks), popularization of the Internet leads to the fact that people learned about the Internet, and moreover, wanted it (that is, the popularization of the Internet only creates a demand for its availability).

The spread and influence of the Internet creates a false impression of the possibility of achieving maximum freedom of expression. Based on this, the Internet can be considered as a platform that is free from ideology, and each of its users is able to choose the content that he consumes. The most obvious answer is the fact that states can use and control the Internet and its individual platforms. States prohibit and block individual Internet platforms, dictate to

providers the conditions for providing Internet services to the population. However, this does not mean that there are no prerequisites for the realization of such an opportunity. There is every reason to believe that, under specific circumstances, the restriction of the Internet will take place in a fairly short period of time, as happened with the blocking of Russian sites in Ukraine and Ukrainian sites in Russia after February 24, 2022. However, we suggest focusing on less obvious examples, but on how the Internet can support ideologies or individual ideologues in the context of liberalism and a free Internet. Before proceeding to a detailed consideration, let's understand what is meant by ideological activity and ideological apparatus.

3. The Internet as an ideological apparatus of the state

Ideologies perform integrative, mobilizing and explanatory functions in a peculiar way. They unite people into a social whole and form an attitude towards certain events and phenomena. Louis Althusser noted, first of all, the materiality and objectivity of ideology, studied in detail its functional value in the context of reproduction of production relations and construction of the subject using the mechanism of interpellations *(Althusser, 2001)*.

According to Louis Althusser, the ideological state apparatus is *a certain number of realities which present themselves to the immediate observer in the form of distinct and specialized institutions" (Althusser, 2001: 96)*. The main goal of the ideological apparatus is the promotion and dissemination of panic ideology, although this may be at the same time as class struggle. Besides that, "*all Ideological State Apparatuses, whatever they are, contribute to the same result: the reproduction of the relations of production, i.e. of capitalist relations of exploitation" (Althusser, 2001: 104)*. In this context, we can say that the Internet is one of the warehouses of the ideological apparatus of the state.

As has already been said, the Internet calls for a strong association with freedom of speech. The same idea is adopted by Manuel Castells, meaning that Internet culture defines the culture of freedom, and the freedom to express one's opinion and communicate it to many others has become one of the fundamental values of the Internet *(Castells, 2003)*. On general, 59% of people in the world consider freedom of speech on the Internet in their country to be very important *(Pew Research Center, 2020)*. Such an opinion could arise from the fact that the Internet, in their understanding, is its native autonomous island, a place with complete freedom of speech and should remain so. Such an opinion is dangerous because its "masks" from reflection such characteristics of the Internet as tendency and dependence on external factors. In addition, it is freedom of speech on the Internet that shows certain symbolic boundaries of space, which already show us the dependence and ideological orientation of the Internet.

The correlation of possible mechanisms of restriction of actions on the Internet with freedom of speech is increased by the fact that the concept of freedom of speech depends on social contexts. Absolute freedom of speech cannot exist in any civilized society due to socialization and structural-institutional restrictions.

What is the essence of "freeing" the word? In detaching it from all limiting things, which are morality, and legislation, and thought, and other norms, or even reality in general; it is invalid. It is impossible to have absolute (or "complete") freedom of speech, especially on the Internet, where anyone can both "cancel" and "ban", limiting not only opportunities for expression, but also general presence on certain internet platforms. One can come to the conclusion that absolute and complete freedom of speech cannot exist as E. Durkheim aptly knows, *« Liberty is the daughter of authority. For to be free is not to do as one pleases but rather to be master of oneself, to know how to act reasonably and to do one's duty" (Durkheim, 2018: 151)*.

The myth of freedom of speech, which is widespread in the modern world and supported by various discourses, serves, on the contrary, to further limit or "fix" a person. That is why the "unrestricted" Internet, on the one hand, opens wide opportunities for the realization of freedom of speech, but, on the other hand, limits them with the help of self-censorship, which is implemented, for example, with the help of the so-called "cancellation culture".

According to the results of a sociological survey conducted by the "Democratic Initiatives" foundation in 2018, for 86% of Ukrainians, freedom is the basis of human rights *(Ilko Kucheriv "Democratic Initiatives" foundation, 2018)*. Accordingly, in the understanding of the absolute majority of Ukrainians, freedom is a connotation of the exercise of human rights. That is why the use of discourses about freedom is an effective cover and is implemented to "capture the audience", as a result of adjusting to its values for further management.

In our context, the consideration of self-censorship is an interesting but not significant aspect; more important is the consideration of censorship, which is determined officially and comes from the state.

The author's positions are close to the constructivist point of view, we assume that to ensure social stability, it is necessary to create certain restraining mechanisms that enable "soft identification", a certain leveling of worldviews. These mechanisms make it possible to avoid the appearance of opposition – from here, the most obvious feature appears, which determines our approach to this topic: the Internet allows you to reach almost all social groups, thereby allowing you to ensure social (and ideological) consensus, even in those cases where it seemed unattainable. Thus, the Internet certainly has the potential to construct models of social interaction at the macro level and plays a significant role in macro-ideological production. For example, consider individual services, platforms and social networks.

4. Mechanisms of functioning of individual Internet platforms as carriers of ideology

According to the results of a survey of OSCE participating states (conducted by the OSCE itself in 2011), among 66 participating states, 44 have specific legal norms and regulations prohibiting Internet piracy; in 36 there are specific legal norms and provisions prohibiting slander and insult (defamation) on the Internet; 20 have specific legal norms and provisions prohibiting the expression of views likely to incite extremism; 19 there are specific legal rules and regulations that prohibit the distribution of "harmful" content (that is considered "harmful" under the law) *(Organization for Security and Co-operation in Europe, 2011)*.

Restrictions can also come from specific Internet platforms, which can be guided by both commercial success and act under the influence of the official policy of individual states. We can mention some cases that confirm this. The company Meta Platforms Inc.[1] (social networks "Facebook" and "Instagram") is considered one of the most influential in the market of providing services on the Internet. In particular, Facebook is the most popular social network in the world today, and accordingly has a large number of users who can be influenced and shaped by their values, daily practices, etc. As of September 2023, Facebook is the 3rd most visited website in the world *(Top Websites Ranking, 2023)* and has 3.88 billion active users as of June 30, 2023 *(Meta Reports Second Quarter 2023 Results, 2023)*.

Facebook's Community Guidelines specify the possibility of removing content that may contribute to the threat of violating people's physical safety. In addition, it is stated there that in certain cases Facebook allows the publication of content that in other situations would be

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[1] Until October 28, 2021 – Facebook Inc.

considered as violating the norms of the community. For example, this happens when moderators consider the content worthy of publication or of public interest (immediately note the "blurring" of these comments and the possibility of creating double standards) *(Facebook Community Standards, n.d.)*. The user agreement states that Facebook may remove content or restrict access to content that violates these terms and/or mute or disable a user's account for actions that violate these terms. The restrictions themselves are quite "blurry" there, and you can use them in different ways, for example: "*You may not use our Products to do or share anything: <…> that is unlawful, misleading, discriminatory or fraudulent (or assists someone else in using our Products in such a way)" (Terms of Service, 2022)*.

Facebook usually blocks any messages that call for aggression, discrimination or contain offensive language and may be marked as politically incorrect. But in the pursuit of compliance with ethical principles, works of art and works of art can be "banned". The algorithm perceived images of Renaissance sculptures as pornography *(Hughes, 2017)*, did the moderators delete publications with quotes from Taras Shevchenko, because they clearly contain hate speech *(Abramovych, 2022)*.

Instagram is also one of the most popular social networks in the world. As of September 2023, Instagram is the 4th most visited website in the world. Instagram's terms of use are similar to Facebook's user agreement, not only in its imprecise wording, but also in providing broad possibilities for Instagram itself: *"We can remove any content or information that you share on the Service if we believe that it violates these Terms of Use, our policies <…>, or we are permitted or required to do so by law. We can refuse to provide or stop providing all or part of the Service to you <…> immediately to protect our community or services, or if you create risk or legal exposure for us, violate these Terms of Use or our policies <…>, if you repeatedly infringe other people's intellectual property rights, or where we are permitted or required to do so by law" (Terms of Use, 2022)*.

As an example of the fact that these rules work and are implemented, we can mention the case of blocking Donald Trump's Facebook and Instagram accounts. This incident occurred on January 7, 2021, after the US presidential election, which Donald Trump lost, and shortly after spoke at a rally of thousands in downtown Washington, again refusing to admit defeat and calling the election a fraud *(BBC, 2021)*, at the same time, urging those present to go to the Capitol, where the results of the 2020 presidential election were approved. After that, the company "Meta" (then still Facebook) blocked Trump's accounts on its social networks (it is important to note that Trump was also blocked by Twitter, YouTube and many others). The blocking was explained by the fact that Trump encouraged, rather than condemned, the actions of his supporters near the Capitol building and used Meta platforms to "*incite violent insurrection against a democratically elected government" (Zuckerberg, 2021)*.

It is difficult to say whether this case influenced the course of history or not, but it is important to take it not in the context of speculation, but as a fact. First, Internet platforms demonstrate that they can dictate who and how they will express themselves through their policies. Secondly, in this way there is a demonstration that various social networks and Internet platforms can influence the course of events in society. It is difficult to assess this influence on historical processes in full, but the fact that with the help of Internet resources the attitude of society to a specific fact is formed is undeniable. Of course, it was not only the actions of Internet corporations that influenced the acceptance of Joe Biden as president, but nevertheless, Internet corporations loudly and effectively expressed their own position on what was happening in the political and social space of the United States.

Another example is the online platform Twitch, owned by the company Twitch Interactive, which, in turn, is a subsidiary of Amazon. Twitch specializes in live broadcasts and gives its users not only the ability to watch live broadcasts, but also to host them. As of September 2023, Twitch is the 34th most visited website in the world and is the most popular online streaming platform *(Top Websites Ranking, 2023)*. According to Twitch's own research, its global reach in 2023 is: average daily attendance – 35 million visitors; unique streamers who go on the air every month – 7 million. Also interesting is that nearly 70% of Twitch viewers are between the ages of 18 and 34 *(Over 2,500,000 are watching Twitch right now)*.

An important component of streaming on Twitch is the communication between the streamer (the one who conducts the stream) and the viewers. Each streamer can be seen to have a position of power: they have the right to speak, while viewers can only write in chat or using another tool (and that the streamer can block them or limit them by putting limits on the use of certain words). During the streaming process, only the streamer has the right to speak, while his viewers become the audience. Statements of streamers can form views, values, and with systematic viewing of the same streamers – even worldview models in the audience. As mentioned, the users of this platform are mainly teenagers and young people, so the impact on the audience is more significant than, for example, on people of a more mature age. In turn, the activities and statements of the streamer are controlled by the Twitch Internet platform. So, for example, according to Twitch's Community Rules, it is forbidden to "spread harmful false information on or outside of Twitch.» It is important to note that even actions outside of the Twitch online platform can result in a ban on the Twitch online platform: *"In order to reduce harm to our community and the public without undermining our streamers' open dialogue with their communities, we prohibit harmful misinformation superspreaders who persistently share misinformation on or off of Twitch" (Community Guidelines)*. That is, the platform also dictates what a person's behavior should be outside the Internet space.

A special role in the Twitch rules is played by the ban on inciting hatred and oppression, which directly affect the words of streamers. All this has led to the fact that streamers can lose their channels on the platform for one careless or thoughtless action or word. Yes, there were cases when a streamer was blocked for: putting black makeup on the face of a white character in the game *(Bankhurst, 2019*; uttering a "forbidden word" if the streamer has not condemned it; the statement that there are only two genders, etc *(Last Sports, 2022)*. These rules, which exist on the Internet platform and limit streamers, affect their viewers, are institutionalized and routinized. The word "condemn" that should follow banned words is a prime example of this – in this way, Twitch proclaims political correctness as one of the platform's guiding principles. Twitch explains this policy as an active counteraction to aggression and incitement to hatred, and declares its goal to protect users from the most vulnerable social groups. The streaming service included women, people of color, representatives of LGBTQIA+ and indigenous peoples of different countries among them. The new rules are divided into three categories: harassment, hateful conduct and sexual harassment. In each section, Twitch has explained what is meant by certain bans. It is telling that there are currently discussions about increasing the number of "those who can be potentially oppressed" and the categories of discrimination. Thus, we see how political correctness actually acts as a tool capable of multiplying inequalities: each individual group can claim the need for special treatment, including at the level of expression, and the streaming platform must respond to such a request in order to stay on track *(Nekhaienko, 2018)*.

Yes, we see how, with the help of normalization of the Internet environment, the opportunity to justify (legitimize) this or that social or political practice is realized. Political correctness here goes beyond the scope of politics, as it is primarily aimed at justifying (or condemning)

this or that social action, it works, if not as an ideology, then as a separate ideological construct that is broadcast using the Internet.

The normative function of ideology is implemented on the basis of Twitch, which sets a system of norms of social behavior for a social subject. In this way, the value parameters and evaluation criteria of certain social phenomena, events, processes are outlined, contributing to the suppression of dissent and ensuring ideological and value consensus, which is necessary for the harmonious functioning of the social system.

Within the framework of the given illustrations, we can see how social networks and other internet platforms can limit freedom of speech and dictate the agenda in society; it was important to demonstrate their potential. Often, those restrictions for users that come from the side of the Internet platforms themselves are aimed at facilitating the increase of capital (ultimately – making a profit) of the founders, shareholders or owners of the Internet platforms. Some restrictions help to attract advertisers (for advertisers, the content produced on the Internet platform is important, since it is this content that is the basis of their advertising). Other restrictions promote the spread of certain values or practices, which can also contribute to profit (as, for example, in the Meta scandal).

That is, social networks choose such restrictive strategies in order to attract the largest number of supporters and to be able to monetize the content produced on their platform.

5. Conclusions

Connecting to the Internet automatically immerses a person in a space that is moderated and functions according to certain rules and norms that limit human freedom. "Rules of using the Internet" can be different – depending on the Internet platform and its socio-political direction. But in all cases, there is a common feature – the rules are dictated by representatives of the ruling class, who in their actions are guided by commercial motives. The Internet acts as a platform where soft coercion takes place, and not by repressive methods, but mostly by ideological ones, while various means can be used, for example, linguistic (in the form of political correctness and so-called "hate speech"), visual (Internet memes, video – photo – content) etc.

Thus, it is they who have the opportunity to control and model people's practices, as well as influence their thoughts and ideas ("*The ruling ideas of each age have ever been the ideas of its ruling class" (Marx, Engels, 1955: 30)*), supporting their power or certain trends, using in their various manipulations, the possibilities of which are represented by the Internet.

If we talk about the functioning of the Internet "in an ideological way", then we can see a variety of discourses and ideologies, among which one dominant one always stands out. Online platforms provide opportunities for expression, but at the same time they control the selection of "those who express themselves", for example, ignoring users with fewer followers and more tightly controlling users with a large number of followers. In addition, opinions may be stigmatized, labeled (primarily in discourses and rules) as "conspiracy theories,» "harmful,» or "disinformation.«

Internet platforms not only give users the opportunity to use them, but also teach them how to do it correctly. Starting from banal orientation in space (that is, forming the skills of use), which produces certain habits or stigmas in a person, and ending with the rules that the user must follow (that is, the system of values and worldview that the creators of these rules relied on, and which should be in a person in order for him to use this space). Moreover, Internet platforms do this in ways that ensure subordination to the dominant ideology.

Thus, we have reason to believe that the Internet is an ideological apparatus of the state, since, as Louis Althusser wrote, the ideological apparatus of the state can be not only the goal, but also the place of class struggle, and often even violent struggle. The ruling political class (or class union) does not so easily establish its laws in the ideological state apparatuses as it does in the (repressive) state apparatus *(Althusser, 2001)*.

Social networks have become an integral part of modern society, and the Internet has become accessible to people (that's right, not the other way around) 24/7. Their influence on the formation of the mass consciousness of society is difficult to overestimate. The Internet has created an unprecedented opportunity for instant information dissemination. With platforms like Facebook, Twitter, Instagram, YouTube, etc., everyone can easily share news, facts, opinions, and more. This allows information to spread quickly and easily become available to millions of users. However, this becomes a prerequisite for the problem of filtering and verifying the authenticity of information that comes to us through social networks. The Internet can filter information according to individual user preferences. This can create echo chambers where people perceive and exchange information only within a certain worldview paradigm. Many social networks use algorithms to personalize content. This means that people receive information directly; and this, in turn, leads to the formation of "filter bubbles" in which people separate themselves from their own points of view and thoughts. Such features of the Internet make it possible to assert that society is becoming less protected from suggestion, and this is actively used, including for the formation and support of everyday ideologies.

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COMPARATIVE STUDY OF INTERPERSONAL INTERACTION OF MALE AND FEMALE TECHNICAL PROFILE STUDENTS

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Summary

The article is devoted to the problem of interpersonal interaction creation by male and female technical profile students. Results of the empirical research showed that male students of a technical profile have a dominant tendency in interaction, while female students have a tendency to be sensitive and friendly. A high level of sociability is common to both male and female students, which contributes to the emergence of attraction. Technical profile students have a high level of desire for people and a relatively significant fear of being rejected. Female students are more eager to establish friendships with others than male students, but they are also more afraid of being rejected in communication and interaction than male students. Male students have an active desire to win leadership positions, social recognition, and a high status in the system of interpersonal relations. They are able to take responsibility and to be persistent in their beliefs, to insist on their own. Instead, female students have an internal desire to accept group standards, values, traditions, the ability to make contact. Such traits as modesty, timidity, shyness, and the ability to forgive are inherent to them. They strive to take care of close people, show tolerance towards others. Thus, male and female technical profile students have different specifics of interpersonal interaction creation, in particular, they are affected by different factors of interpersonal interaction and strategies for creation of interpersonal relationships.

Key words: interaction, communicative and characterological tendencies, affiliation tendency, interpersonal interaction, desire for people, sensitivity to rejection, technical profile students.

1. Introduction

The complicated structure of relations between people includes a significant number of elements, and interpersonal interaction is a leading one among them. It is the result of the development of social history, an indicator and basis of culture and at the same time a means of social development. The quality of a person's social life depends on the nature of their communication and the nature of interaction with other people, due to the fact that social and interpersonal relations are revealed and realized mainly in communication.

In the process of interpersonal interaction, the unity of the individual's actions and their consolidation are ensured, and purposeful activity is organized. It contributes to the development of intelligence, the expansion of the worldview, the acquisition of new knowledge, skills, and abilities necessary for successful activity. These aspects are especially relevant for students, since the role of interpersonal interaction as a factor of sustainable development and humanization of relations with the environment increases in student's age.

The problem of interpersonal relationships includes the study of many aspects of this phenomenon, in particular, the content of interpersonal relationships (V. Bayon, L. Buieva,

F. Hyder, K. Levin, J. Moreno, G. Mead, J. Thibaut, etc.); mechanisms of interpersonal relationships (E. Kuzmin, V. Olshanskyi, V. Semeniv, etc.); emotional aspects (O. Petrovskyi, E. Andriienko, etc.), etc. The problem of interpersonal relationships formation in a group was considered by such scientists as F. Allport, N. Chepeleva, G. Hyman, K. Levin, M. Kornev, D. Myers, S. Maksymenko, L. Orban-Lembryk, T. Parsons, K. Sedykh, M. Sherif, T. Tytarenko, M. Yaroshenko, M. Weber, and others.

Scientists O. Bulhakova, T. Dnieprova, D. Dolhanov, O. Karhopolova, A. Kidinov, V. Koval, T. Pernarivska and others studied the specifics of the interpersonal interaction construction and development by students. However, despite the significant number of scientific papers, we can state the absence of complex studies devoted to the issue of interpersonal interaction of technical profile students, specifically, the specifics of interaction formation between boys and girls of student's age.

According to this, **the purpose of the article** is to conduct a comparative analysis of the features of interpersonal interaction creation by male and female students of a technical profile.

2. The concept of interaction

A person and society are connected by an extensive system of connections, the main elements of which are the subjects of communication. The subject of communication here is what a connection is made for, and the mechanism of conscious regulation of relations between subjects. Specific communication is conducted in the form of contact and actual interaction, but contact is only the first step of real interaction. At the same time, it can be a separate phenomenon that does not go into interaction. Such contact is fleeting, superficial, devoid of a system of related actions of subjects with each other *(Sedykh, 2008)*.

Interaction itself is a process of direct or indirect interaction of subjects (objects) with each other, which creates their mutual state and relations *(Moskalenko, 2007)*.

In the process of interaction, actions are exchanged, kinship, coordination of actions of both subjects arise, as well as stability of their interests, division of functions, joint activity design, etc. They are the actions that help to realize the mutual regulation, mutual control, mutual assistance and mutual influence. This involves the contribution of all participants of the interaction to the joint task solution with further adjustment of their actions, taking into account the available experience, updating their own capabilities and the abilities of the partner. Entering into communication, exchanging information, a person creates forms and norms of joint actions, organizes and agrees on them. This contributes to overcoming the gap between communication and interaction *(Orban-Lembryk, 2004)*.

Types of interpersonal interaction are usually divided into the following groups *(Moskalenko, 2007)*:

1. Cooperation. This type of interaction includes actions that help to organize joint activities, ensuring its effectiveness, success and coordination. Cooperation is also called "adaptation", "collaboration", "consent", "association" and so on.

2. Competition. This type of interaction includes actions that negatively affect joint activities and create barriers to understanding. Competition is also called "conflict", "rivalry", "dissociation", "opposition" and so on.

Among the purely psychological components of interpersonal interaction, the common goal is the most important one. Mandatory psychological components of joint activities include joint motivation, i.e. what motivates people to a common goal, as well as joint actions that contribute to the implementation of current and immediate tasks of joint activities. A general

result is the final component of the psychological structure of activity. Here, crucial importance is given not only to the general objective end product, but also to the subjective reflection of the result by individual and collective subjects *(Orban-Lembryk, 2004)*.

3. Methods of empirical research

Studying the specifics of interpersonal interaction creation is of particular interest in practical terms. In this regard, we conducted a pilot study, which covered 60 students of one of the institutions of higher technical education in the Poltava region, Ukraine. The program of empirical research included "Methodics for the interpersonal interaction diagnosis" by T. Leary (modified by Y. Reshetniak and H. Vasylchenko), which is aimed at studying the subject's ideas about himself or herself and the ideal "Self", as well as for studying relationships in small groups *(Lozhkin, Povyakel, 2006)*, and "Affiliation Questionnaire" by A. Mehrabian, which assesses two motivational tendencies functionally interconnected and correlated with the need for affiliation: desire for people and sensitivity to rejection *(Mehrabian, 1970)*.

4. Communicative and characteristic tendencies of students

At the first stage of the study, the peculiarities of personality tendencies, which are revealed in interpersonal interaction among technical profile students, were analyzed according to the methodics of the interpersonal interaction diagnosis by T. Leary (Fig. 1).
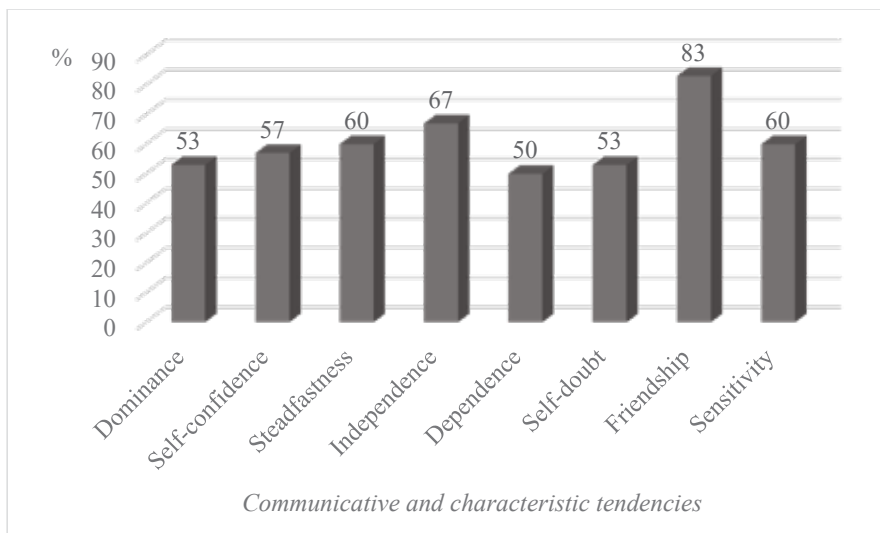
**Fig. 1. Manifestation of communicative and characteristic tendencies
of technical profile students (n=60, %)**

The tendency towards sociability is shown in the group of the researched students most of all (83 %). This characterizes the respondents' manifestation of such qualities as the ability to help each other, sociability, kindness, attentiveness. Also the tendency of independence is manifested in the interpersonal sphere of the students to a large extent (67 %).

It characterizes the suspiciousness, distrust, vulnerability as the leading distinctive traits of these boys and girls.

Tendencies such as steadfastness and sensitivity are equally expressed (60 % each). This may be the evidence of the expression of such features as criticality, irritability, intolerance for partner's mistakes of some of the studied students. At the same time, the same part of the researched students show delicacy, tenderness, the desire to take care of loved ones, as well as tolerance for shortcomings and the ability to forgive.

The group of students showed a tendency to self-confidence to a somewhat lesser extent (57 %). This reflects the confident behavior, independence, efficiency, and in extreme cases, selfishness and callousness of the students. Tendencies of dominance and self-doubt of the studied students are expressed to the same extent (53 % each). Dominance reflects leadership inclinations, the desire for dominance, independence, the ability to take responsibility. Another tendency is an indicator of respect for others, trustworthiness.

The tendency to dependence is the least pronounced among the researched technical profile students (50 %), which allows us to mention the presence of such qualities as self-criticism, modesty, timidity, shyness.

At the next stage of the study the communicative and characteristic tendencies of male and female students of technical profile were analysed (Fig. 2).
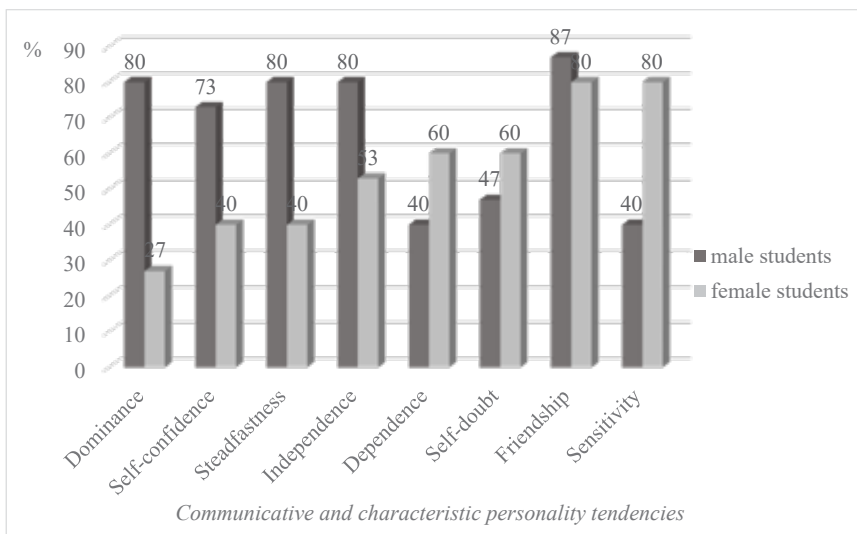
Fig. 2. Manifestation of communicative and characteristic tendencies of male and female students (n=60, %)

The analysis of the research data of male and female technical profile students separately showed that the following communicative and characteristic tendencies are significantly predominant for male students: independence (80 %), steadfastness (80 %), dominance (80 %) and sociability (87 %), that is, their behavior may be described as actions aimed at gaining a leadership position in the team. These male students are quite assertive and straightforward, but high sociability describes them as non-conflictual ones.

Such features as sensitivity and sociability prevail for female technical profile students (80 % each), that is, we can say that their behavior is kind and sincere. Female students usually

respect their partners in a mutual relationship and recognize their rights, mostly they coexist peacefully with others. Their behavior is characterized with delicacy, tenderness, tolerance for the shortcomings of others, altruism and a desire to help people.

So, among male students of a technical profile, the general tendency is dominance, while female students demonstrate sensitivity and friendliness. A high level of sociability is common to both boys and girls, which contributes to the emergence of attraction. High indicators of such trends as sociability, sensitivity, dominance of boys and girls indicate a high level of interpersonal interaction, adjustment of personal communication, and the emergence of friendly relations.

5. Affiliation tendencies of technical profile students

The results of the study of the communication needs of technical profile students according to A. Mehrabian's methodic are presented on the picture 3.
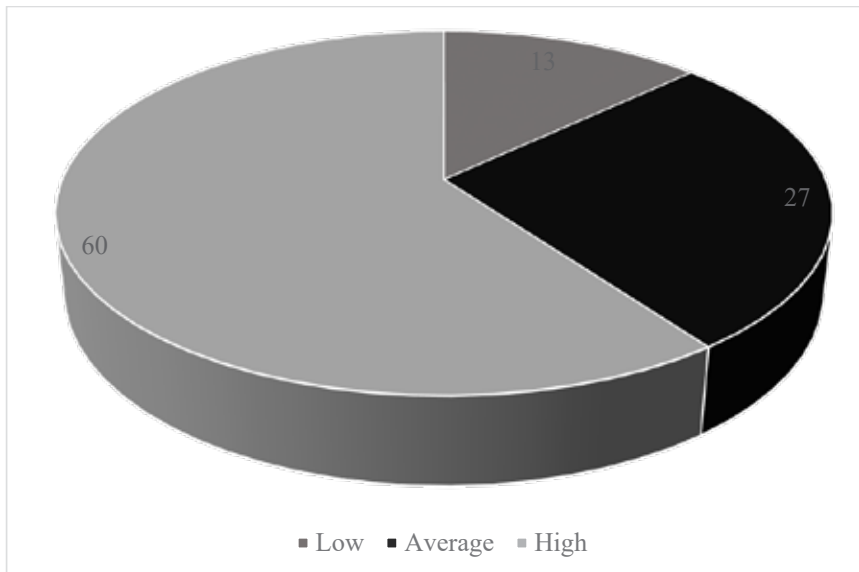
Fig. 3. Manifestation of the "Desire for people" tendency (n=60, %)

A high level of desire for people is the most represented among the researched students (60 %). We can assume that these students have a desire to make friends, to be happy with other people, to communicate and cooperate with them in the group relationships. They may establish mutual trusting relationships, where each of the partners accepts them, treats them favorably, supports them in a friendly manner, sympathizes. Such an attitude can be directed at both familiar and unfamiliar people and may be manifested in friendly facial expressions, positive speech expressions, posture, gesticulation, etc.

The average level of desire for people is inherent for 27 % of the respondents. They expect a positive results when they try to establish contacts with new people and feel afraid that their expectations may not be fulfilled at the same time. This is how internal tension and conflict arise. If the fear is stronger than the expectation of a positive result, it may block the tendency to desire for people of these technical profile students.

The smallest part of the respondents (13 %) have a low level of desire for people. It is expressed in the desire not to contact with people, not to establish personal relationships with them, to be at a significant social and psychological distance from them.

At the next stage of the study the manifestation of the "Desire for people" tendency of male and female students of technical profile was analyzed (Fig. 4).
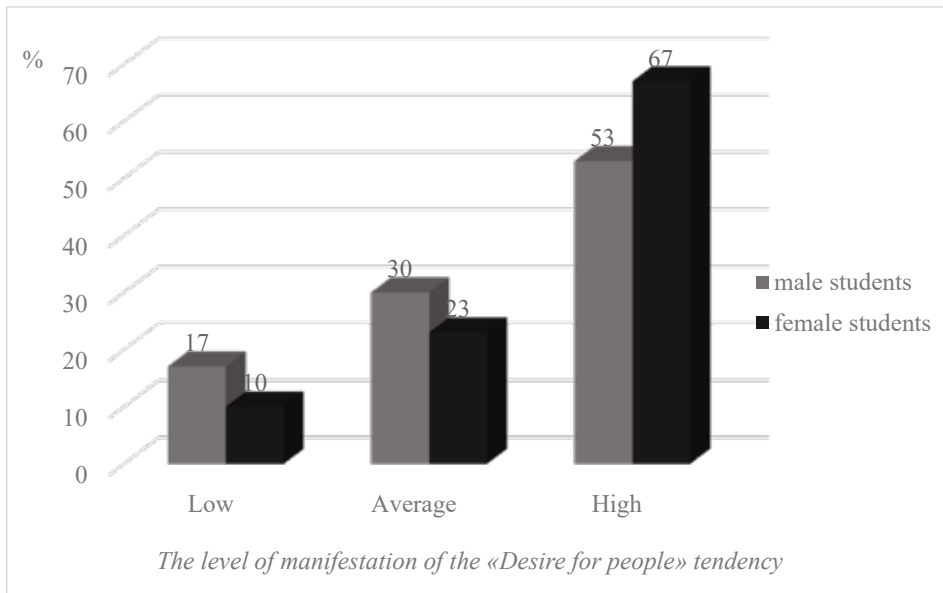
**Fig. 4. Manifestation of the "Desire for people" tendency
of male and female students (n=60, %)**

The analysis of the data of male and female students separately showed that the tendency of desire for people of the studied boys and girls is manifested almost to the same extent, however, a low level of this desire is more represented among boys than among girls (17 % vs. 10 % respectively), as well as the average one (30 % vs. 23 % respectively). A high level of desire for people is more inherent for girls than boys (67 % vs. 53 % respectively), so it can be argued that girls are more eager to establish friendly relations with others than boys.

The analysis of the features of the manifestation of another aspect of affiliation, the sensitivity to rejection, is given in the picture 5.

Among the respondents the average level of sensitivity to rejection is the most evident (60 %). Such students may have a certain fear of communication with others, in particular with persons of the same age, and periodic avoidance of contact. The opinion of others about them is very important for these students, they seek to be accepted in a specific communication circle and may be sensitive to various manifestations of attention towards them.

The high level of sensitivity to rejection is much less pronounced (28 %), which can lead the students to a persistent desire to avoid situations in which they may find themselves disadvantaged, as well as to a number of strict internal prohibitions that can serve as protection against the danger of putting themselves at risk of rejection.
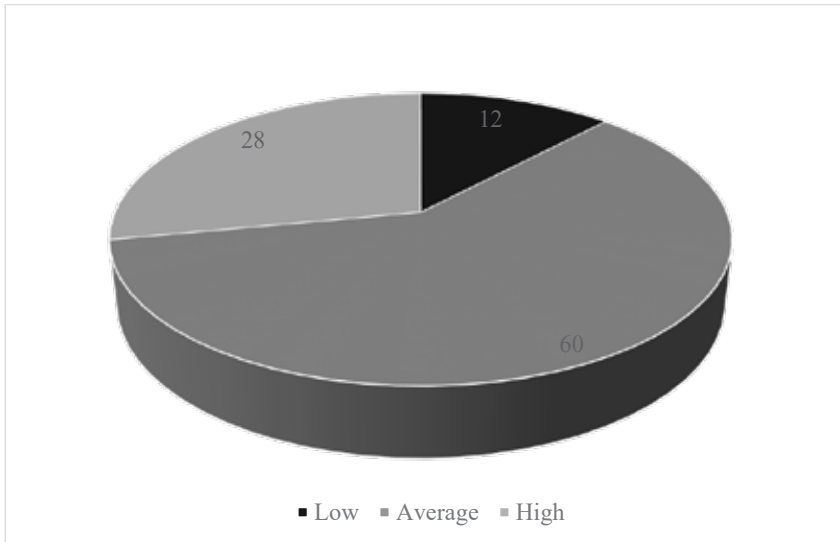
Fig. 5. Manifestation of the "Sensitivity to rejection" tendency (n=60, %)

The low level of sensitivity to rejection is less expressed among the respondents (12 %). Such students usually are not afraid to interact with the environment, to give and receive help. They are able to establish and maintain positive emotional contacts with members of their group.

At the next stage of the study the manifestation of the tendency "Sensitivity to rejection" of male and female students of technical profile was analyzed (Fig. 6).
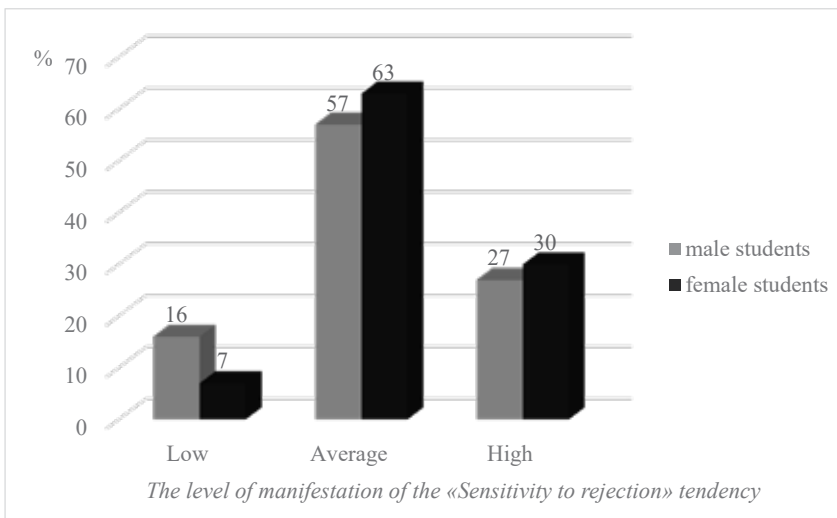
Fig. 6. Manifestation of the "Sensitivity to rejection" tendency of male and female students (n=60, %)

The analysis of the received data separately for male and female technical profile students showed that the tendency of sensitivity to rejection is manifested to almost the same extent for boys and girls, however, a low level of manifestation of this tendency is more common among boys than among girls (16 % vs. 7 %). The average level of manifestation of this tendency is more typical for girls (63 % vs. 57 %), as well as high level (30 % vs. 27 %). Therefore, we can say that female students are more afraid of being rejected in communication and interaction than male students.

So, basing on the results of the research, it can be concluded that technical profile students have a high level of desire for people and a relatively significant level of sensitivity to rejection. Also, male and female students have significant differences in the manifestation of affiliative tendencies.

6. Gender and interpersonal interaction correlation

In order to determine the peculiarities of the interpersonal interaction construction, which are inherent for male and female students of a technical profile, a comparative analysis of the results of the study was conducted using the point biserial correlation coefficient r_{pb} *(Morgun, Titov, 2012).* The obtained results are presented in the table 1.

Table 1

Correlation between gender and the peculiarities of interpersonal interaction of technical profile students according to the point biserial correlation coefficient r_{pb}

Peculiarities of interpersonal interaction	Female students	Male students
Communicative and characteristic personality tendencies		
Dominance	-0,086	0,512*
Self-confidence	0,189	0,144
Steadfastness	0,225	0,456*
Independence	0,009	0,343*
Dependence	0,359*	0,094
Self-doubt	-0,104	-0,155
Friendship	0,267	0,283
Sensitivity	0,517*	0,121
Affiliative tendencies		
Desire for people	0,199	0,156
Sensitivity to rejection	0,217	0,104

Basing on the obtained data, we can conclude that male technical profile students show the statistically significant moderate correlations ($p \leq 0.05$) with the communicative and characteristic tendency to independence (0.343) and a strong correlation ($p \leq 0.01$) with communicative and characteristic tendencies of dominance (0.512) and steadfastness (0.456). Therefore, these students have an active desire to gain leadership positions, social recognition, and a high status in the system of interpersonal relationships. They are able to take responsibility and be stable in their beliefs, to insist on their own.

Female students of a technical profile showed the statistically significant moderate correlations ($p \leq 0.05$) with communicative and characteristic tendencies of dependence (0.359) and sensitivity (0.517). So, these female students have an internal desire to accept group standards,

values, traditions, a desire to form emotional connections with the environment, that is, the ability to make contact. They express such traits as modesty, timidity, shyness, and the ability to forgive. Female students strive to take care of loved ones, show tolerance towards others.

7. Conclusions

Thus, interpersonal interaction is an important aspect of social relations. It consists in the interdependent exchange of actions, in the construction of mutual actions by people, which are aimed at joint activities conducting. According to the results of empirical research, it is found that male and female students of a technical profile have different specifics of interpersonal interaction creation, in particular, they have different factors of interpersonal interaction and strategies for interpersonal relationships creation.

In this regard, the perspectives of further studies in this context is a thorough study of the problem of the formation of interpersonal interaction skills of technical profile students in the process of their professional training.

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MANAGEMENT ACCOUNTING TOOLS TRANSFORMATION
FOR THE NEEDS OF ENTERPRISE MANAGERS
UNDER MARTIAL LAW IN UKRAINE

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Summary
The main purpose of this article is to analyze and research the main tools of management accounting functioning, identify trends of their future development and optimize processes improving its information content for managers based on the changes that are taking place in the current conditions of martial law in Ukraine.

The analysis of the features of economic processes was carried out using the principles of dialectics, which allowed to classify the effects of the crisis processes of the Ukrainian economy. The classification of the effects of the crisis processes of the Ukrainian economy associated with the introduction of martial law is carried out and their impact on the development of management accounting tools was shown. The main functions of management accounting, which characterize the depressive phenomena of the economy and have a direct impact on its functioning, are highlighted. Based on the highlighted functions, we have adjusted the objects and tasks facing management accounting during martial law. The conceptual anti-crisis model

of management accounting was formed, its functional variability determines the set of objects of management accounting, which is mainly associated with the need to manage the parameters of strategic anti-crisis development of the economic entity, as well as monitoring and control of its detailed microenvironment under martial law.

The results of the study have important practical value for managers of enterprises that are affected by crisis phenomena caused by rapid negative changes in the external environment.

Key words: management accounting, management decisions, crisis processes, objects of management accounting, martial law, information support of enterprise management, anti-crisis model of management accounting.

1. Introduction

Effective management of enterprises in conditions of business risk is based on the use of relevant information, the main supplier of which is management accounting. The procedure for the formation and systematization of information in management accounting, especially today during the period of martial law in Ukraine, is primarily associated with a large number of new challenges for enterprises, which correlate not only with the methodology of management accounting, but also with the definition of its substantive content. This state of affairs causes the revision of the system of organization and methodology of formation, transfer and use of accounting information of management accounting for users.

In the researching process of the theoretical and organizational-methodological foundations of management accounting, the works were analyzed of such foreign scientists as: Barton L. (1993), Drury, C. (2018), Edward W. (2020), Johnson, H. (2012) and others. Korinko M. *(Korinko, M.D. & Gutkevich S.O., 2022)*, Matyukha M. (2022), Onyshchenko V. (2020), Pugachenko O. *(Puhachenko, O. & Zarudna, N., 2021)* and others worked on solving the problems of improving the informativeness of the theory and methodology of management accounting and its main tools. However, despite a significant number of developments in management accounting, there is no information on the conduct of its instruments during martial law.

The main goal is to analyze and research the main tools of management accounting functioning, identify trends in their future development and optimize processes to improve its information content for managers based on changes that occur in the current economic conditions of Ukraine.

2. Methods

The method of theoretical generalization was used to identify the properties that affect the organization of the management accounting system. The State Statistics Service of Ukraine data, analytical publications and expert assessments of specialists in this field became the information base of the study.

The analysis of the features of economic processes is carried out using the principles of dialectics, which will allow to classify the effects of the crisis processes of the Ukrainian economy. In addition, while researching the systems of methods were used such as: monographic – in the formulation of the purpose of the study, the results of which are reflected in the article. The method of theoretical generalization of foreign and local works of scientists, used

in the selection of properties that directly affect the organization of the management accounting system at the enterprise. General scientific methods of cognition, such as analysis and synthesis, induction and deduction, systematic integrated approach were used for summarizing the conclusions.

3. Results

3.1 Prerequisites for adjustment of management tools

Russia's aggression against Ukrainian territories led to the adjustment of the processes of our country's economy, economic, social and humanitarian crisis in Ukraine, new challenges, risks and problems: at least 12 million people have left their homes, 8 million internally displaced persons, 3.5 million refugees and the introduction of martial law.

Increased intensity of hostilities, disruption of production and logistics routes, destruction of assets and infrastructure, high energy prices and reduced demand delay the recovery of economic activity in all sectors of our economy. In the survey of Ukrainian enterprises (Figure 1) among which 45.5 % are industrial companies, 28.1 % are service sector companies, 21.4 % are trade companies, 5.0 % are construction companies, 32.4 % of respondents are large enterprises, 31.7 % are medium-sized companies, 36.0 % are small-sized companies, 34.8 % of surveyed enterprises carry out export and import operations, 9.8 % only export operations, 14.5 % only import operations, 41.0 % do not carry out foreign economic operations, the index of business activity expectations in 2022 is projected to reach 43.8 based on the analysis of expert estimates and will further depend on the duration of martial law (2).
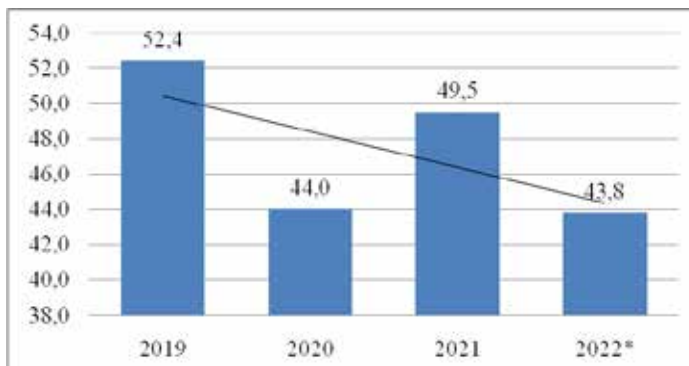
Fig. 1. Index of business activity of Ukrainian enterprises in 2019–2022
Source: the official data of the National Bank of Ukraine

Analysis of similar processes that occurred in Ukraine in 2014 *(Kucherova, H., 2019)* and in other countries of the world in different periods of time has shown that such a situation encourages many enterprises to make changes in their usual economic processes, and in most cases it is characterized by inevitable crisis phenomena both in the economy of country and in enterprises in particular.

3.2 Analysis of the differentiation of the newly created environment

We consider it appropriate to analyze the legislative provisions and scientific views on these phenomena of prominent scientists for a more detailed understanding of the essence of the concept of "economic crisis" and "martial law" (Table 1).

Table 1

**Interpretation of the concepts of "economic crisis" and "martial law"
by different scientific sources**

№	Source	Essence
1	L. Barton (1993)	An economic crisis is a large-scale unpredictable event that leads to potentially negative results and can cause serious damage to the entire enterprise.
2	John M. Keynes (Edward, W., 2020)	An economic crisis is as a rule a sudden and drastic change in a growing downward trend, while in the reverse process such a sharp turn often does not happen.
3	Economic Dictionary (6)	Economic crisis is an imbalance between supply and demand for goods and services, which causes a depressive process in the economic situation. It is manifested by a decline in production, rising unemployment, increasing number of bankruptcies, as well as a tendency to deepen the crisis.
4	K. Hermann (Forgue, B., 1996)	A crisis is an unpredictable, unexpected situation that threatens the priority goals of the organization with limited time for making management decisions.
5	Law of Ukraine (2015)	Martial law is a special legal regime imposed on this.Ukraine or in separate houses in the event of armed aggression or threat of attack, the danger of state independence of Ukraine, its territorial integrity and the granting of appropriate State authorities, military commanders and bodies the local self-government of the authority needed to be frank The threat and security of national security, as well as temporary, concerning the threat, limitations of constitutional rights and human rights and citizen and rights and legal interests of legal persons with set the action string of these constraints.
6	Y. Shemshuchenko (2004)	Martial law is a special state, a procedure of governance, which is introduced on the entire territory of the state or in some of its areas in case of declaration of war, armed aggression or threat of military attack.
7	E. Killam (1989)	Martial law implies the temporary replacement of civilian authorities by military ones and is usually applied in times of war, rebellion or natural disaster.

Analyzing Table 1, we note that each of the above statements on the definition of the essence of the concept of "economic crisis" and "martial law", which in our opinion in the Ukrainian realities are intertwined in a single process, are extremely important for the economy and proves the fact that they are quite complex phenomena, have different elements of formation and in each country lead to different specific consequences.

3.3 Identification of classification features of accounting and analytical tools

That is why we tried to classify the effects of the crisis processes of the Ukrainian economy associated with the introduction of martial law and show their impact on the development of management accounting tools (Table 2).

The presented classification in Table 2 shows the heterogeneity of the impact of economic crisis processes on the development of management accounting tools. Crisis processes have a negative impact on most aspects of the formation of management accounting methodology, but there are also those on which this impact is positive. in Table 2 shows the heterogeneity of the impact of economic crisis processes on the development of management accounting tools. Crisis processes have a negative impact on most aspects of the formation of management accounting methodology, but there are also those on which this impact is positive.

Table 2

**Classification of the impact of crisis processes in the economy on accounting
and analytical tools for management decision-making**

Negative aspects	Positive aspects
Conceptual	
1. Reforms in the direction of accounting reporting led to reformatting the minds of users, which ultimately often led to untimely, incomplete or distorted analysis of events. 2. Strengthening the effect of control of accounting processes on crisis phenomena almost always has a negative impact on management. This leads to the leveling of special factors inherent in each enterprise in the application of internal accounting. 3. From the side of users, any changes at their initial stage always meet resistance, which is dictated by human psychology. 4. When reforming, accounting regulators often focus on the analysis of past events, and only in few cases are they oriented towards the future. 5. Crisis processes of the enterprise necessarily require rethinking the situation in terms of pricing, production, financial and other policies. 6. As a result of the crisis situation, the economy leads to a reduction in large-scale research in the direction of management accounting, focusing on minor refinements.	1. The crisis indicates the inefficiency of the application of tools, techniques and methods used in the formation of information for management decisions. It forces to revise theoretical approaches in management, accounting, control, analysis. 2. The crisis strengthens the role of accounting infrastructure (new laws, concepts, programs are introduced, specialized professional organizations are formed etc.), which is intended to improve the relationship between accounting processes and management system. New or revised standards in the field of accounting and reporting, principles, rules of conducting those areas of accounting, which contain processes that can lead to aggravation of crisis phenomena are introduced.
Methodological	
1. Desiring to improve the situation by standardizing business procedures and rethinking the accounting instruments themselves may lead to further problems and contradictions in conceptual accounting at higher levels. 2. The destructive nature of the economy brings natural evolutionary changes in the tools in accordance with the requirements of the economy, eliminating those enterprises that are not able to adapt to them.	1. Crises focus the attention of managers on external processes of the economic entity, i.e. expand the range of objects of management accounting.

Source: made by the authors.

3.4 The impact of crisis processes on the organization of the management accounting system

In the conditions of martial law in the economy, management accounting should contribute to the production of such information that would contribute to ensuring sustainable functioning, despite external and internal transformations in order to implement effective management decisions and anti-crisis financial strategy *(Khomovyi, S.M., Tomilova-Yaremchuk, N.O., Khomovyi, M.M. & Makarchuk O.G., 2019)*. In this context, crisis processes in the economy have the following properties that directly affect the organization of the management accounting system:

– depending on the scale and nature of the crisis phenomenon, it can have a heterogeneous impact on various business processes of an economic entity, affecting the efficiency of functioning of a particular object of management accounting in different ways *(Puhachenko, O. & Zarudna, N., 2021)*;

– the configuration of the facts of economic life is largely determined by the periodicity (cyclicity) of a particular stage (phase, stage) of the crisis phenomenon *(Johnson H., 2012; Amosha O., Pidorycheva I. & Zemliankin A., 2021)*;

– the intensity of the use of management accounting tools to develop the most important management decisions is also determined by the dynamism of changes in economic parameters, both of the economic entity itself and the socio-economic system in which it operates *(Matiykha, M., 2022)*;

– any crisis situation, and especially under martial law, is destructive by nature, and carries a set of destructive phenomena and problems that require prompt resolution *(Drury Colin, 2018)*. This feature of the crisis situation indicates the need to organize an effective system of collecting and summarizing internal and external information in the management accounting system for effective decision-making. As a result of the analysis of the highlighted features and accounting – analytical work of the management accounting subsystem at such enterprises of Ukraine as LLC "Bilotserkivkhliboprodukt", LLC "Kolos", LLC "Dan Farm Ukraine", PE "Rosava Agro", FG "Agro Land" and others, functioning in the conditions prevailing in our country during the last time, information on the main parameters of the functioning of the internal and external environment of the economic entity should be produced in the form of management reports, analytical references and databases, cases of model solutions, strategic and operational plans etc.

3.5 Characterization of functions and tasks of management accounting in the context of changes in the external environment

We believe that the functional variability of management accounting in martial law should be much wider than in periods of economic growth, which also does not contradict the basic models of sustainable development of Ukrainian enterprises in the post-war period *(Alrowwad, A. M., Alhasanat, K. A., 2022)*. In this context, we have identified the main functions of management accounting that characterize the depressive phenomena of the economy and have a direct impact on the functioning of management accounting (Figure 2).

Based on the highlighted functions, we believe that the management accounting subsystem used under martial law should be focused on the following tasks :

– assessment of the external environment for the formation of key documents in the strategic management system (mission, strategy, vision, business model, key performance indicators (KPI) etc.) Formation of a system of indicators for assessing the performance of responsibility centers, business processes, managers, production and management employees in order to level the impact of crisis processes in the economy on the functioning of the economic entity;

– planning the costs of the economic entity, identification and further reduction of inefficient costs, in order to invest the released value in innovations that can increase the sustainability of the economic entity;

– reporting formation of sustainable development, including the disclosure of information about the implemented business model for external users. It should be noted that the business model is the basis of any organization, and the management accounting system should be the basis of each business model. In this regard, in management accounting it is necessary to develop recommendations for the development of economic entities that link the business model and the management accounting system by identifying data on the state of the business model, as well as diagnosing dangerous situations and potentially promising activities;

Management accounting functions	
Standardization and regulation function of accounting and analytical procedures	Provides for the development of a methodology for accounting, analytical, evaluation and control measures in the management accounting system to counteract the crisis. The whole set of new techniques and methods of management accounting, relevant for use in the economic crisis is fixed in the relevant regulations and standards.
Function of methodological support of anti-crisis decision-making	Involves the development of analytical methods, systems of indicators, instructions, scenarios and algorithms of actions, a list of preventive actions and anti-crisis measures, typical changes in the implemented business model depending on the development of the situation, in order to develop relevant information in the management accounting system.
Crisis damping function	Implemented in the system of preliminary, current and further control and provides for the leveling of internal and external triggers of a crisis situation or an unstable situation. It is carried out in conditions of permanent readiness to assess, record and analyze the danger posed by martial law in Ukraine.
Function of financial control over the implementation of key business processes	Consists of ensuring functioning processes that facilitate the implementation of a system of control, documentation and reporting financial activities in order to ensure the efficient use of resources and reliable reflection of the results of financial and economic activities of both internal and external users. In addition, this function involves the management of all financial assets and related aspects of activities, including the management of banking operations, financing processes, foreign exchange and interest rate risks.
Function of optimal division of resources (financial, labor, land, non-material etc.)	Considers the realities of martial law in the economy and strategic priorities for the development of the economic entity

Fig. 2. Management accounting functions that characterize depressive economic phenomena and have a direct impact on the functioning of management accounting

Source: made by the authors

– management of risks determined by both internal factors and the environment in order to implement the business model and strategic priorities of the economic entity;

– assessment of the degree of macroeconomic negative phenomena influence on the further functioning of the economic entity (inflation, fall in total demand, crisis of the banking system, increase in the key rate, stagnation processes in certain industries, unemployment, high volatility in the stock markets, bankruptcy of key partners and counterparties, deformation of payment relations with major stakeholders, etc.) At the same time, management accounting should ensure the compatibility of data with the indicators of the base period in the conditions of changes in external factors of the economic entity's functioning *(Shirov, A., 2022),* as well as accounting policies and legislation.

4. Discussion

In fact, we have formulated a hypothesis about the need to allocate an anti-crisis model of management accounting with a specific set, functions, tasks and tools in the course of substantiating the scientific independence and expanding the functionality of management accounting during martial law.

This model (subsystem) is allocated by us for the purpose of more effective management of the microenvironment of the economic entity, forecasting the impact of changes in the external environment on its financial state and making management decisions that increase the stability and balance of the enterprise development. Its allocation is caused by the impact of the war on the tools of management accounting and as a result of changes in information requests of the main categories of users, which determines the identification of its objects (Figure 3).

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┌──────────────────────────────────────────────────────────────┐
│         Accounting and information space of the enterprise     │
└──────────────────────────────────────────────────────────────┘
   ┌──────────────┐   ┌──────────────┐   ┌────────────────────┐
   │  Accounting  │   │Tax accounting│   │Financial accounting│
   └──────────────┘   └──────────────┘   └────────────────────┘
┌──────────────────────────────────────────────────────────────┐
│                    Management accounting                       │
└──────────────────────────────────────────────────────────────┘
┌────────────────────────────┐   ┌────────────────────────────┐
│ Objects of management       │   │ Objects of management       │
│ accounting in the period of │   │ accounting under martial law│
│ economic development        │   │                             │
└────────────────────────────┘   └────────────────────────────┘
┌────────────────────────────┐   ┌────────────────────────────┐
│ ➢ expenses;                 │   │ ➢ price policy;             │
│ ➢ incomes;                  │   │ ➢ economic options of the   │
│ ➢ production volume;        │   │   market environment;       │
│ ➢ cost of production;       │   │ ➢ reserves and reserve      │
│ ➢ investments.              │   │   budgeting;                │
│                             │   │ ➢ inflation;                │
│                             │   │ ➢ risks of management       │
│                             │   │   decisions.                │
└────────────────────────────┘   └────────────────────────────┘
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Fig. 3. Definition of management accounting objects under normal conditions of economic functioning and under martial law

Source: made by the authors

The lack of instrumental methodological system of management accounting for use under martial law in Ukraine requires the development of a whole range of methods and techniques *(Onyshchenko, V., 2020)*, in particular:

1. Formation of methodological recommendations for the preparation of strategic documents of an economic entity in crisis conditions (strategy, mission, policy and others) etc;

2. Methods of improving the system of accounting and analytical support in the formation of reserves that negate the crisis processes;

3. Development of budgeting method in the conditions of crisis processes in the economy (methodological process support of forming non-financial budgets, including budgets for environmental, human and social development);

4. System development of indicators for operational diagnostics of crisis processes under the influence of endogenous and exogenous triggers (CRI);

5. Development of a methodological approach regarding the impact assessment of external factors on the functioning of the enterprise;

6. Development of recommendations and regulations for the construction and further functioning of a new responsibility center for the management accounting system – anti-crisis (or crisis damping center), which is responsible for the permanent monitoring of the system for the emergence of a crisis situation;

7. Formation of a system of management reports, including reports on sustainable (balanced) development;

8. Improvement of traditional and perspective calculation systems in the conditions of crisis processes in the economy.

In our opinion, a certain set of tools must correspond to each selected object of the system of management accounting under martial law in the economy, the totality of which determines the procedural and methodological support of the functions of the manager *(Korinko, M.D. & Gutkevich S.O., 2022)* and ultimately the goals of the entire enterprise in such a period of time (Table 3).

Table 3

Analysis of tools and objects of management accounting under martial law and head's of the enterprise functions

№	Function	Object of accounting	Management accounting tools
1	Accounting (information support and cost optimization)	Price policy	Information support of expenses by detailing the options of management accounting; implementation of accounting functions of the process of "inflationary adjustments"; methodological recommendations for the formation of a special reserve for changes in the value of assets.
2	Organization (optimization of the enterprise structure)	Economic options of the market environment	Methodology of reserve formation for doubtful debts; organization of the reserve system of the economic entity; making changes in the job descriptions of employees.
3	Planning (forecast of future events)	Reserves and reserve budgeting	General and operating budgets. Organization of inflation-corrective measures; creation of a system of accounts, sub-accounts and journals of correspondent entries within the framework of reserves.
4	Control (optimization of external information flows)	Inflation	Methodology of CVP-analysis in conditions of hyperinflation; methodology of formation of reserves for depreciation of financial investments.
5	Decision-making (formation of diagnostic points of all external and internal processes of the enterprise)	Risks of management decisions	Adjusted test system of internal assessment by qualitative options (CRISIS-analysis), quantitative internal assessment of the impact of crisis phenomena (CRISIS-analysis), SWOT-analysis of the effectiveness of the external system of the economic entity.

Source: made by the authors

It should be noted that the functional variability of such a system determines the set of objects of management accounting, which is mainly associated with the need to manage the options of the strategic anti-crisis development of the economic entity, as well as monitoring and control of its detailed microenvironment under martial law. Reasoning of strategic directions of anti-crisis development of the enterprise requires a conceptual approach (Figure 4).
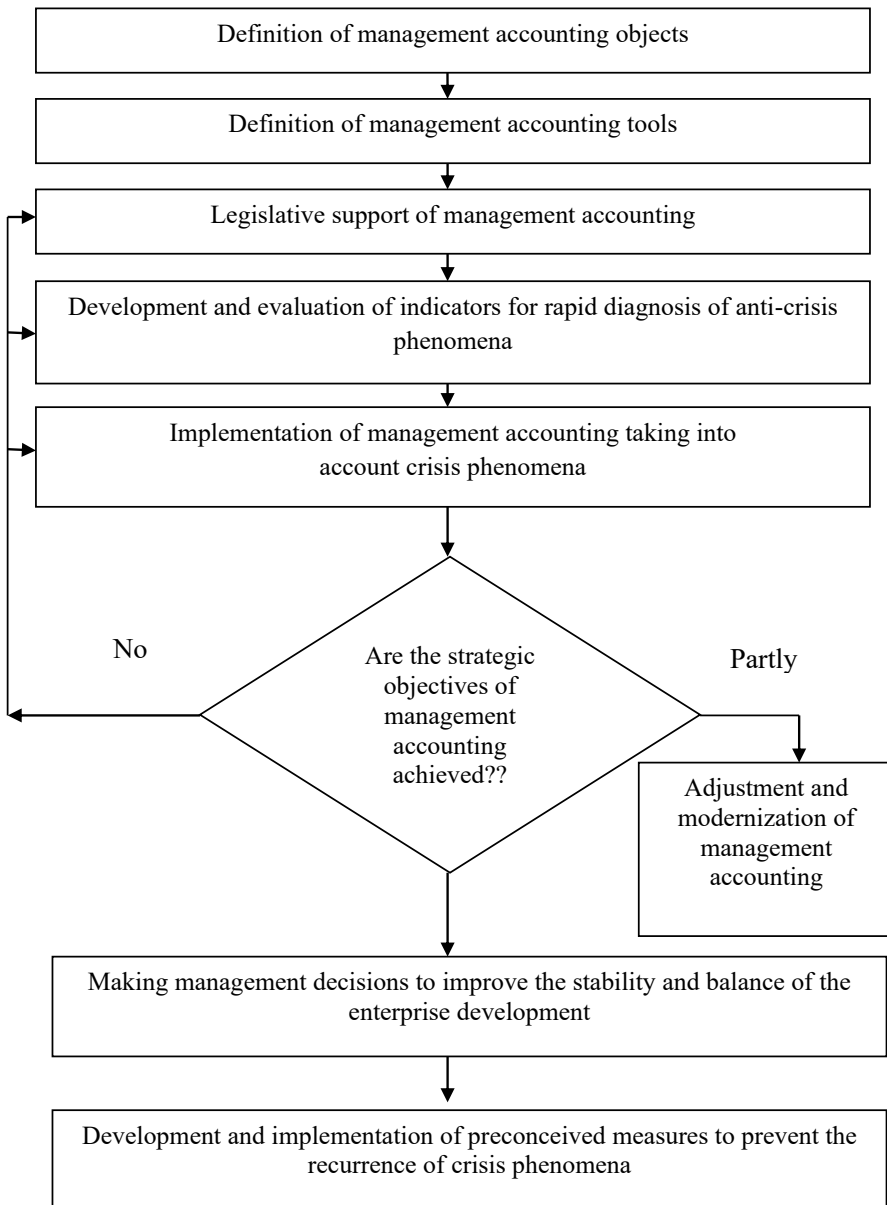
Fig. 4. Conceptual anti-crisis model of management accounting
Source: made by the authors

Thus, management accounting is the anti-crisis model of management accounting provides for the neutralization of crisis phenomena through prompt response to management decisions, as well as prevention of their occurrence through the internal economic mechanism.

5. Conclusions

Thus, management accounting is as an important information system of any enterprise under martial law requires adjustment of its functions, objects and a set of effective tools that are formed by the current crisis phenomena of the economy of our country.

Our proposed model of management accounting which is supplemented by important specific objects that have been formed under martial law will allow generating relevant information for managers of enterprises and making effective management decisions to stabilize the economic situation at the enterprise throughout the crisis period. Prospects for further research in this area are further coverage of theoretical knowledge on the development of institutional foundations of the theory of management accounting and the expansion of its tasks in different conditions of a market economy and as for practical it is the implementation in the organizational activities of enterprises in the process of reforming their management mechanism.

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THE ROLE OF PUBLIC POLICY IN ENSURING PUBLIC HEALTH

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Summary
A healthy population is the key to the long-term development and existence of any state. Therefore, one of the important tasks of the state is the development and implementation of relevant policies aimed at maintaining and strengthening the health of all segments of the population.

The purpose of this study was to determine the role, influence and instruments of public policy for the preservation and promotion of public health. During the study, a retrospective analysis of the literature data, as well as the legal framework of Ukraine in the field of maintaining the health of the population, was performed.

Adequate policies that may have an impact on the health of the population are implemented through ensuring the population's access to medical care; social protection measures; education and through economic aspects.

The mechanism for implementing policies to ensure public health includes institutions and organizations that form the policy and interaction of all participants to implement policies, as well as regulatory and legal documents through which these initiatives are actually implemented.

Today Ukraine is in difficult social and economic conditions. There is a negative trend in the health of the population. However, despite this, Ukraine implements policies to preserve and improve the health of the population by joining the global process of achieving the Sustainable Development Goals; adoption of the Law of Ukraine "On the system of public health", which is aimed at protecting and strengthening the health of the population, preventing diseases, improving the quality and increasing life expectancy, ensuring the sanitary and epidemic well-being of the population; development of regulatory documents on priority areas for the development of the healthcare sector for the period up to 2025.

Key words: public health, health policy, institutions.

1. Introduction

The state receives existence and significant prospects only if there is a healthy human potential. Maintaining health, improving the quality and life expectancy, strengthening the reproductive potential, forming a responsible attitude to one's health should become one of the main strategies and policies of each state.

In a broad sense, politics is a certain part, program or direction of such activity, a set of means (tools) and methods for realizing certain strategic interests in order to achieve certain goals in a certain social environment. Public health policy is a set of management decisions and activities aimed at creating conditions for maintaining health and increasing the quality of life of citizens. An adequate and effective public health policy – Public Health Policy – is crucial because it transfers the theory and research of public health into the practical world, the practice of health care, thereby ensuring the preservation of the health of the population *(WHO, 2022)*.

Therefore, the **purpose** of this study was to determine the role, influence and instruments of public policy for the preservation and promotion of public health.

2. Materials and methods

During the study, a retrospective analysis of the literature data, as well as the legal framework of Ukraine in the field of maintaining the health of the population, was performed.

3. Results and discussion

Government policies can have a significant impact on the quality of life and health of citizens. It combines not only management decisions and activities in the field of the health care system, but also other political decisions that are also important and have an effect on maintaining the health of the country's population.

Some of the effects that public health policies can have include:

1. Access to health care: Public policy may determine the accessibility of health care to the population. This may include financing the healthcare system, organizing and distributing medical services and medicines, developing prevention programs, etc. An effective government policy in this area can provide comprehensive and equal access to quality healthcare, which contributes to improving the quality of life and improving the health of all segments of population *(Alston, Nichols, Allender, 2019; Chung, Muntaner., 2006; Navarro, Shi., 2001)*.

2. Social protection: Public social protection policies such as social security programs, unemployment benefits, child care benefits and others can have a direct impact on the quality of life of citizens. Such programs provide social support and protection from economic hardship, which contributes to the stability, well-being and improvement of the general health of the population *(Navarro, Shi, 2001)*.

3. Education: Government policy in the field of education can affect the accessibility and quality of education. Education is a fundamental element for human development and empowerment. The right policies to improve the accessibility, equity and quality of education can significantly improve the quality of life and contribute to better health. Educated people have more opportunities to get a job, make better money, access health information and better manage their health *(Gopinathan, Buse, 2022; Zajacova, Lawrence, 2018; Karas Montez, Hayward, Zajacova, 2019)*.

4. Economic development: Government policies can influence the economic development of a country, which in turn affects the quality of life and health of citizens. Economic growth, job creation, and the reduction of poverty and inequality contribute to better living conditions. In addition, economic growth provides funding for the development of health care, social protection and other areas that directly affect the health and well-being of the population *(McCartney, Hearty, Arnot et al, 2019; Ndumbe-Eyoh, Muzumdar, Betker, 2021)*.

6. Social justice: Public policies aimed at achieving social justice also play an important role in improving the quality of life and health of citizens. Equality, regardless of racial differences, age, gender, etc., is the basis for the implementation of all the above opportunities to improve the health of the entire population *(MON Ukraine, 2020; Schram, Schuring et al, 2019)*.

To understand the mechanism for the implementation of state policy to ensure public health or health care policies, it is important to single out such components and their functions as institution and institutional.

Institution is the primary element of a system/industry, these are organizations and institutions that determine the policy and interaction of all structures in a particular area. In healthcare, institutions regulate the provision and organization of medical services for various categories of the population in accordance with state policy in the field of health protection.

Institutional – unites all legislative documents and normative legal acts through which the implementation of state policy, decisions of institutions in the field of health care actually takes place.

Different countries have their own institution structures and organizations that interact with public authorities, funding bodies and the provision of health services. The role of these institutions is to develop and regulate political decisions, determine the standards and quality of health care.

As examples of health care institutions in highly developed countries are the following.

In the US healthcare system, institutions such as the Centers for Disease Control and Prevention (CDC) and the Federal Office for Health Quality play an important role in defining and monitoring national strategies to prevent or manage disease, and in regulating and paying for healthcare services *(CDC, USA, 2023)*;

In the UK, the National Health Service (NHS) is the key institution responsible for providing health care to the entire population. The NHS governs the financing, organization and provision of health care in the country, ensuring the availability and equity of health care *(National Health Service, UK, 2023)*;

In Norway, institutions such as the Norwegian Directorate for Health and Social Services regulate and oversee health care. They develop policies and quality standards, and provide funding and resources for health services *(Norwegian Directorate of Health, 2023)*;

In the Japanese health care system, institutions such as the Ministry of Health, Labor and Welfare (MHLW) regulate and coordinate health care. Japan is known for its universal health insurance system, which ensures the availability and coverage of health care for all citizens *(Ministry of Health, Labor and Welfare of Japan, 2023)*. The institutional mechanisms of the Japanese system also include the National Health Council, which develops strategies and recommendations in the field of public health, and municipal health authorities, which implement policies at the local level;

In the German health care system, the role of institutions includes the Federal Ministry of Health (FMH), *(Federal Ministry of Health, German, 2023),* which develops laws and regulations in the field of health care, as well as the Federal Agency for Quality in Medicine, which monitors and evaluates the quality of medical care. In addition, there are compulsory health insurance funds in Germany, which play an important role in the financing and organization of health care;

In the Canadian health system, the role of institutions is played by the Canadian Health Council, which develops strategies and recommendations in the field of health *(Canadian Federal Commissions on Health Care, 2023)*, and the Canadian Institute for Health Information,

Canadian College of Health Information Management *(CCHIM, 2023),* which collects and analyzes population health data. A feature of the Canadian system is the provincial responsibility for providing health care, which means that each province has its own institutional structure for managing and financing health care.

In Ukraine, institution is represented by the following structures: The Ministry of Health of Ukraine is the main executive body responsible for the development and implementation of state health policy. It coordinates the work of other state bodies and organizations, makes recommendations and develops regulations *(Ministry of Health of Ukraine, 2023)*; The National Health Service of Ukraine *(Natsional'na sluzhba zdoroviya Ukrainy, 2022)* is the central executive body that implements the state policy in the field of state financial guarantees of medical support for the population under the program of medical guarantees; Regional and local health authorities are responsible for the organization and management of the health system at the regional and local levels. They develop regional health strategies and programs and allocate resources to provide health care in their territories; Medical institutions, including hospitals, polyclinics and dispensaries, also play an important role in decision-making and the allocation of resources in the healthcare sector. They determine what medical services will be provided, how resources will be used, including medical personnel, equipment and medicines. Medical institutions also interact with government agencies and structures, as well as with patients and public organizations to provide effective and affordable medical care.

The institutional components through which the implementation of the state policy in the field of health care are laws and regulations that regulate relations in the health care system; regulations governing norms and quality standards in medicine, as well as the volume, conditions and algorithms for the provision of medical services *(Ministerstvo ohorony zdoroviya Ukrainy, 2022).*

Thus, laws and regulations play a key role in defining duties and responsibilities in the healthcare sector. For example, the existence of laws requiring compulsory insurance or guaranteed access to certain medical services has a significant impact on the organization of the healthcare system and the provision of medical care to the population. Established norms and quality standards play an important role in ensuring the safety and effectiveness of medical care. Various organizations, such as the World Health Organization (WHO) and the National Institutes of Health, develop and regulate health care quality standards *(Uryadoviy portal Ukrayiny, 2022).*

An adequate state policy to ensure public health is especially important today for Ukraine, which is at a difficult stage of existence. The level of health of the population of Ukraine today is characterized as unsatisfactory, since over the past decade there has been an increase in the level of general mortality of the population within 4%, while in Europe, on the contrary, it has decreased by 4%, and the average life expectancy in Ukraine by 5%. – 10 years less than in economically developed European countries *(WHO, 2018).* For the period 2007–2017 the level of prevalence of diseases increased by 10.6%, the incidence of diseases – by 38.9%, natural population growth is negative and ranges from 5.8 to 7.8 per 1000, the total population decreased by 7.7%, which threatens national security of the state *(Tsentr medychnoyi statystyky Ministerstva ohorony zdoroviya Ukrainy, 2019).*

Today, Ukraine, despite the current political situation, actively takes care of maintaining and strengthening the health of the population, implementing a policy aimed at preventing the occurrence or increase in the level of non-communicable diseases. By implementing this strategy, Ukraine, like other UN member countries, has joined the global process of achieving the Sustainable Development Goals, since 2016 an inclusive process of achieving them in

Ukraine has been launched. Each global goal was considered taking into account the specifics of national development, resulting in a national system consisting of 86 tasks *(United Nations Development Programme, 2017)*. These national development goals, indicators for monitoring their implementation and targets for achievement by 2030 were reflected in the National Report "Sustainable Development Goals: Ukraine". In fact, this system is the basis for further comprehensive monitoring of indicators in the country.

Also, the Law of Ukraine "On the public health system" (09.2022) was adopted, which is aimed at protecting and strengthening the health of the population, preventing diseases, improving the quality and increasing life expectancy, and ensuring the sanitary and epidemic well-being of the population. It clearly presents the main tasks and operational functions of the public health system, and identifies their performers *(Law of Ukraine, 2022)*.

Among the relevant documents aimed at strengthening population health is the order of the Ministry of Health "On approval of priority areas for the development of the healthcare sector for 2023–2025" *(Decree of the Ministry of Health of Ukraine, 2022)*, which includes measures to prevent health-destructive behavior (smoking, alcohol, unhealthy eating, etc.), strengthening the educational component of medical personnel in matters of infection control, standardizing the provision of medical care and creating an effective system for monitoring the quality of medical services, and developing e-health.

The expansion of the package of guaranteed medical services for the population under the program of medical guarantees has also become a key one. In 2023, the program of medical guarantees was expanded with six packages of medical care services, including rehabilitation assistance, which is relevant for all countries and Ukraine especially, taking into account the realities *(Natsional'na sluzhba zdoroviya Ukrainy, 2022)*.

4. Conclusions

Adequate and effective policies have a great influence on the health of the country's population, and not only in the field of the health care system. To understand the mechanism for implementing policies to ensure public health, institutions and institutional are distinguished, which cover both institutions and organizations that form the policy and interaction of all participants to implement policies, and regulatory and legal documents through which the implementation and implementation of these initiatives actually take place.

Despite the difficult period of Ukraine's existence, the country supports the policy, strategy of preserving and strengthening the health of the population. At the present stage, legislative acts are being adopted, such as expanding the programs of medical guarantees for the population, developing the public health system, implementing the strategies of the UN global plan to achieve the Sustainable Development Goals, which will help improve the level of public health and integrate Ukraine into the European community.

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COVID-19 PANDEMICS IMPACT ON UKRAINIAN STUDENTS' PERCEPTION OF THE EU, EUROPEAN INTEGRATION AND SOLIDARITY

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Summary

The youth opinion and perceptions of the EU and EU-Ukraine relations and aspiration of Ukraine towards the EU membership have always been under the particular interest of scholars, policy-makers and civil society. Through years of Ukraine's independence youth has been defined as a key target audience for the public policy, hence it is critically important to understand their opinions and attitudes, positions, and perceptions. As unprecedented a challenge as COVID-19 pandemics turned out to be for European solidarity and values could not but affect the attitudes to the EU and European integration in Ukraine. The purpose of this study is to identify any possible transformations the concept of EU and European solidarity occurred in the minds of Ukraine's undoubtedly most pro-European social group (student youth aged 18–25). The survey was held by Ukrainian Association of Professors and Researchers of European Integration through March–May 2020, under the turbulent first months of pandemics at the very height of quarantine limitations in both the EU and Ukraine. By means of content analysis, concept analysis and categorization of unique empirical data collected within the frames of the all-Ukrainian student essay contest focused on COVID-19 impact upon European integration and solidarity, this study traces shifts in Ukrainian students' attitudes to the EU and Ukraine's European integration process and, where possible, identifies the types of media discourse and sources influencing the target group's opinions.

Key words: the EU, European integration, European solidarity, Ukrainian university students, COVID-19 pandemics.

1. Introduction

COVID-19 pandemic had a great impact on the general perception of the EU both inside and outside the European Union. While within the EU, the public opinion on the EU were closely monitored throughout the first shocking wave of pandemics *(Eurobarometer, 2020)*, with special attention paid to financial solidarity *(Bobzien, Kalleitner, 2020),* immigration issues *(Dannison, Geddes, 2020)* or social divisions *(Crastev, Leonard, 2021),* the COVID-19 impact upon the ENP countries' attitudes to the EU has rarely become a subject of public attention.

Out of all the ENP countries, Ukraine stands out as a specific case, as the nation's unanimous response to the Russian full-scale military aggression has once again highlighted not only civilizational, but also an existential background behind Ukraine's European choice. With a challenge as crucial as war in view, it seems highly relevant to look backwards to the Ukrainians' assessment of the EU efficiency under the COVID-19 pandemics as a crush test for the nation's pro-European allegiances.

As one of the core concepts of the national social and political discourse *(Yavorska, 2013),* and, by the same token, as a concept directly referring to a social standards and values set *(Yehorova, Prokopenko, Popova, 2019),* the Ukraine's pro-European choice is largely determined by the undergoing social transformations. In Ukrainian context, a solitary attempt at outlining the changes in Ukraine's perception of the EU under COVID-19 was done by a group of *Ukrainian Prism* experts *(Vdovychenko, Vorotniuk, Herasymchuk, Koval, Krayev, 2020).* However, their primary goal was to develop a set of context-determined recommendations rather than to investigate the shifts in public attitudes to the idea of European integration or to the EU as a whole.

Valuable insights as for Ukrainians' level of support for accession to the European Union can be driven out of International Republican Institute's regular public opinion survey of residents of Ukraine (2021) conducted through March 13–21, 2021. Still, their data set presents a somewhat delayed response to the outburst of the pandemics, with many of the initial reactions possibly reconsidered with time.

The Ukrainian society's immediate response to pandemics was grasped by Kyiv International Institute of Sociology's CATI opinion poll of March 27–30, 2020 *(Public Authorities' Efficiency Assessment and Public Reaction to the Coronavirus Pandemics, 2020).* Yet, it addresses the matter of Ukraine's European perspective under COVID-19 but briefly.

2. Research focus

This study aims at tracing any possible shifts of meaning the concept of the EU, as perceived by Ukrainian student youth (age group 18–25), had acquired under the direct and mediated influence of media discourse around the COVID-19 pandemic and the EU's reactions to it.

This research is focused specifically on Ukrainian student youth as one of the Ukrainian society's most proactive groups in the ongoing struggle against the Russian aggression. According to the State Statistics Service of Ukraine, about 6.2 million people aged 10–24 lived in Ukraine as of January 1, 2018 (the youth from occupied territories not included), which makes them an influential group of stakeholders in Ukrainian internal and external political process. From the Granite Revolution of 1990 to the Revolution of Dignity in 2014, Ukrainian youth have proved their ability to "envision, demand, and be active contributors and transformers to a more just and equitable world" *(UN Report 2019 State of Youth in Ukraine),* Ukraine's future in the EU being the essential part of it.

The research questions under consideration comprise a) determining the key attributes of the EU concept as perceived by the target group before and after the COVID-19 pandemics outbreak; b) tracking down the possible change in the target group's attitude to the EU caused by the EU immediate response to the COVID-19 pandemics outbreak; c) marking any possible correlation between the subject's profile (gender, region, field of study) and their attitude to the EU.

3. Methods

*Samples.*The core empirical data for the study comes from the open Pan-Ukrainian student essay contest held by Ukrainian Association of Professors and Researchers of European Integration (APREI, aprei.com.ua) through March–May 2020, at the very height of quarantine limitations in both the EU and Ukraine. Each of the participants (177 in total) submitted a 1000-word essay on how the pandemic might affect Ukraine's European integration and the very concept of European solidarity.

Region-wise, 62 essays were acquired from the central part of the country, 38 from the western part and 77 from the south-eastern region, with HEIs from Kharkiv, Kyiv, Poltava and Lviv as the most active participants. Gender-wise, 133 out of 177 essays were submitted by females, which reflects the gender-biased background of Ukrainian higher education positioning Humanities and Social Sciences as predominantly "female" fields of study *(Tsarenko, 2015).* Subject-wise, 25 essays came from the departments of Law, 144 from Education, Humanities and Social Sciences, 8 from Natural and Exact Sciences (Medicine included), which reveals a considerable gap in bringing the EU studies and EU related issues into a focus at Natural and Exact Sciences departments.

Coding. To identify the TA's attitude to the EU, the method of content analysis as defined by Holsti (1969) was applied to the empirical data. A coding list of variables was constructed as described below, by category:

– *EU member states visibility and efficiency assessment,* based on the number of countries mentioned, the mentioning rate (quantitative analysis) and the attitude towards the EU's response to the pandemics (1 – positive, 0 – neutral/not defined, -1 – negative).

– *General mood of the essay* (1 – optimistic, 0 – mixed, -1 – pessimistic).

– *Author's general attitude to the EU* (1 – positive, 0 – mixed or hard to define, -1 – negative).

– *Background for reasoning over the EU's response to COVID-19 challenges:* references to verified sources (1 – present, 0 – absent, with a range of sources to be defined and categorized), references to non-verifiable sources, such as social media (1- present, 0 – absent), references to personal experience (1 – present, 0 – absent), emotional reasoning (1 – present, 0 – absent).

– *Inclusion/exclusion.* The feeling of belonging to the common European space and sharing European identity, often conveyed through a metaphor of Europe as a home, a house or a living space. Semantic fields of ownership, belonging, co-living, sharing, integration were coded (1 – confirmed, 0 – absent, -1 – denied).

To secure the rating reliability, the essays were independently coded by both co-authors and a graduate student trained in the use of the coding scheme. The average percentage of agreement for the coded variables was 89%, Cohen's kappa for agreement ranging from.78 to perfect agreement.

4. Research findings

Throughout the years, as demonstrated by several nationwide polls *("Ukrainian Society and European Values" by Gorshenin Institute, 2018; "Ukrainian Generation Z: Values and Waymarks" by New Europe Center, 2018; "European Integration of Ukraine: Human Dimension" by Ilko Kucheriv Democratic Initiatives Foundation, Razumkov Center, Research and Branding Group, 2011–2017)* young people were considered the most pro-European part of the

Ukrainian society. As of 2017, 60% of Ukrainian youth (age group 14–29) prioritized the EU over Ukraine in every single indicator of political and personal freedom, economic prosperity, living standards, state and personal safety, equal opportunities, and compliance with law. Taken at the peak of Euro-optimistic moods raised by the Revolution of Dignity and further boosted by the introduction of visa-free regime with the EU in 2017, those polls, however, did not reflect the possible shifts in Ukrainian youth visions of the EU caused by the upcoming events (the crucial President Elections of 2019; the Brexit crisis; and, most of all, by the COVID-19 pandemics).

The mind-map of the EU as envisioned by the Ukrainian students covers predominantly the flagships of the EU economy. Out of 27 member states, only Germany (45 mentions), France (37), Spain (28), Poland (13) and Italy (54) are mentioned more than ten times, with Poland being frequently mentioned as Ukraine's closest neighbor and, as such, perceived as Ukraine's 'Jungian Other'. Countries like Czech Republic, Austria, the Netherlands, and Greece score 4 to 5 mentions, while the rest of the countries are mentioned 3 times or less (Portugal, Albania, Belgium, Romania) or not mentioned at all (the rest of the member states). Out of the whole EU, only Germany (2), Austria (1) and France (1) are mentioned as the countries successfully dealing with the pandemics outbreak, while Italy is mentioned 6 times as a sample of inefficiency and 12 times – as a sample of people's solidarity as opposed to the government's failures. Outside EU, the countries praised for their swift and effective response to the pandemics include China (4), South Korea (3), Japan (1) and Taiwan (1).

All in all, the EU's efficiency assessment in dealing with COVID-19 is predominantly negative, with *"slow"* (54), *"ineffective"* (41), *"belated"* (38)*, "weak"* (35)*, "bureaucratic"* (32)*, "incapable"* (27) and *"passive"* (22) as the most frequent adjectives applied to define it.

In terms of *general mood*, as assessed independently by the reviewers, optimistic attitude (98 = 55%) prevails over the mixed one (70 = 39,5%), with roughly 50% of males (24 out of 44) and females (69 out of 133) sharing an optimistic perspective on the COVID-19 pandemics outcomes. Region-wise, optimistic moods prevail in 51% of works coming from South-Eastern regions (40 out of 77), in 60,5% of works coming from Western regions (32 out of 38) and in 56% of works coming from Central Ukrainian regions. Remarkably, out of 9 essays expressing overtly pessimistic attitude, 4 were submitted by male authors, all of them from South-Eastern regions. The reasons for optimism range from philosophical reflections (*"All in all, it's just another stage in Western civilization's development"*) and technological advancements (*"What gives us hope is... high level of health care and technologies, the coordination of efforts in dealing with emergencies"*) to the proclamations of isolationism: *"We don't need idols and don't need to copy anyone, we are the nation strong in mind and body and capable of winning through"*.

As far as the *general attitude to the EU* is concerned, 39% of essays (69 works, 50 by females, 19 by males) express a strongly positive attitude, with only 2 works demonstrating an overtly negative attitude. Shades of negative attitude were spotted in 21% of essays (37 works, 27 by females, 10 by males). Mixed or hard to define attitude was expressed in 40% of essays (71 works in total), demonstrating a considerable overlap with the group sharing mixed attitude towards the situation in general.

Region-wise, positive attitude to the EU is shared by 45% (35 out of 77) of the authors from the East and South Ukraine, 39% (15 out of 38) of those from the Western regions, and 35% (22 out of 62) of those from Central Ukraine. Negative attitude is expressed by 21% (16 out of 77) of participants from South and East Ukraine, 24% (9 out of 38) of participants from the West, and 19% (12 out of 62) of participants from the Central Ukraine.

Gender-wise, male participants seem to be more positive in their attitudes to the EU. 43% of males (as opposed to 37,5% of females) share positive vision of the EU, while the negative attitude is shared by 23% of male and 20% of female participants respectively.

Remarkably, the background for positive attitude towards the EU is largely determined not so much by the EU's economical or technological superiority, but by the concepts of European values and European solidarity, perceived as a *"guarantee for global peace and development"*: *"Despite the quarantine measures separating people from each other, the European integration gets only stronger, for the countries unite to fight the common enemy"*; *"although at first the pandemic caused panic and isolation, now it's obvious that the EU population has become united as never before"*; *"The whole Europe understands the importance of integration and mutual help. But what speaks better than words is human behavior. We can see people singing national Italian songs on their balconies. We can see Spaniards celebrating birthdays online. They are united more than ever"*; *"Now everyone is trying to help the medical staff and to follow the quarantine regulations. It is through this behavior that Europe demonstrates its integrity and holds on to European values"*; *"the European nations will live through this new plague all together – and this is how their humanity, their European values work"*. Such an approach contrasts strikingly with the attitudes inside the EU, where almost six out of ten EU respondents were dissatisfied with the solidarity shown between EU Member States during the first months of the pandemic.

The negative attitude to the EU, in its turn, is shaped by the recurrent motive of disillusionment (*"however, it's quite obvious that those great ideas of solidarity can evaporate and disappear in the face of real danger"*; *"as the current situation has shown, there is no such thing as European solidarity – it's merely an ideological wrap easily ripped off"*) and well-worn narrative of the European civilization as "weak", fragmented and "spoiled" by high living standards *(Lipman, 2015)*. What was once seen as a civilizational advantage is now reconsidered as a potential weakness: *"The Europeans got used to living relaxedly, knowing of their economic stability, well-developed health care system, social security and complete trust to the authorities and the police. Maybe this is what ruined them after all"*; *"And so, the Europeans got whatever they struggled for, all the human values they fought for, and now they take that for granted. A new era of individualism followed: a social network instead of family, psychologist instead of a friend, sex instead of love, hundreds of TV channels instead of real communication"*. Some of the negativistic statements from 2020 clearly resonate with the current Russian propaganda discourse: *"While some countries, such as Ukraine, kept losing their people to wars, the pampered societies pretended that was not their business, for their membership in EU and NATO grants them from losing human lives. They tried hard to dissociate from other countries, keeping their "gold" for themselves: Brexit, severe visa regulations for some countries etc."*.

The Ukrainian students' *background for reasoning over the EU actions* is largely determined by social media, with references to viral videos spotted in 1/4 of the works. Over 30% of essays (mostly those with the negative attitude) demonstrate an oversimplified, emotionally charged assessment of the processes taking place in the EU as a response to COVID-19 pandemics, with the metaphorical models of fights, quarrels, betrayal, and rivalry often applied to describe the current relationship between the EU member states (i.e. *"While Italy begged for help, the European Union merely expressed disquiet, and the member countries simply ignored all calls for help"*; *"What is even worse, the countries that used to be friends have turned into enemies, as they say, "homo homini lupus est"…*). In terms of personal experience with the EU, only 3 out of 177 contestants mentioned their visiting the EU as tourists or Erasmus program

participants, which could be explained by the fact that, as of 2019, 76% of young Ukrainians had never been abroad (New Europe Centre).

Contrary to the EU, where 33% of population demonstrated sufficient knowledge of the initiatives undertaken by the EU to mitigate the COVID-19 crisis, less than 15% of the contestants (most of them coming from the field of Law and Social Studies) referred to the exact measures when arguing their point of view. Among the later, the various communiques on financial support for Ukraine were mentioned 17 times; the EC and EIF's support measures for SMEs and SPEs were mentioned 4 times; the establishment of COVID-19 Education Response Committee was mentioned 3 times; the SURE and rescEU programs were mentioned 2 times each; the EFPA's COVID-19 guidelines and trainings for psychologists and the ERA agreement and joint efforts in anti-COVID vaccine development were mentioned 1 time each; the financial support to World Health Organization announced by Josep Borrell Fontelles and perceived as *"an act of global solidarity, a chance for the New Europe's success as a democratic, free and tolerant union… and, hence that, a chance for my country, too"* was mentioned once.

The feeling of *inclusion*, interpreted as belonging, ownership and common identity, is shared by 59% participants (60% of contestants from the East and South, 66% from the West, 53% from Central Ukraine). Only 2 contestants (both from the Western region) have explicitly denied their inclusion into the common European space. However, considerable number of participants feel their inclusion is endangered by the introduction of quarantine measures: *"The pillars supporting the European Union – free movement of people and goods – were ruining right in front of our eyes, when the countries started closing their borders one by one"*. The border closure is often perceived as a direct attack at the very essence of the EU, *"the end of what has been done for European integration in last 30 years"*: *"we all witnessed the EU countries closing their borders and isolating themselves from the rest thus forgetting about the existence of European Economic Area between the EU member countries"; "The countries have closed their national borders, even Germany, the driver of European integration, has introduced regulations. But free transfer of people and goods was not introduced just for the good times"*.

For the young Ukrainians, whose pro-European sympathies have been largely boosted by the introduction of visa-free entry to the EU, the border closure directly affects their sense of belonging, making them feel marginalized once again: *"Judging from certain factors, one can assume that only people from the countries with European level of health care would be allowed to travel through Europe"; "Let's not forget the incident with the Ukrainian migrant workers shown the door in Slovenia and left to their fates"*. Under such circumstances, the well-established metaphor of European Union as common "European home" for all the member states is subject to reconsideration: *"…the countries that year by year progressed on their way to mutual understanding, economic development, prosperity and European solidarity… are now closing the borders and the doors of their homes"; "Right now the countries suffering from economic turbulence are making their choice between "state egoism", protectionism and the values of their common European home"*.

5. Conclusions

The first months of COVID-19 pandemic, with its atmosphere of total uncertainty and panic, caused the shift in Ukrainian youth's attitudes to the EU from predominantly positive to predominantly mixed or hard to define. The pandemic urged the Ukrainian students to critically reconsider almost all the EU-related positive stereotypes used to determine the vision of Europe in Ukraine's political, social, and cultural discourse, such as Europe's ultimate cultural and

moral superiority, Europe as a paragon of values and as a model sample, Europe as a wise mentor, Europe as an epitome of rationality, effectiveness and progress *(Yavorska, 2013)*. On the other hand, due to the obvious performance gap in critical thinking skills development and the EU's but partial visibility in Ukraine's media discourse, the complexity of students' perception of the EU was largely undermined by emotional manipulations applied by social media.

Contrary to the expectations, no considerable correlation between the subjects' profile (gender and region) and their attitude to the EU has been determined. As opposed to the other social groups, Ukraine's student youth proved to be not so much influenced by gender stereotypes or regional context. However, the current sample does not allow to trace any possible correlations as far as the field of study is concerned. At the same time, the low number of participants from the fields of Natural and Exact Sciences can signify both the lack of European focus in the Natural and Exact Sciences curricula and the lack of students' awareness of and interest in Ukraine's European prospects.

Both the EU citizens and the Ukrainian students agree that the EU should have more competences to deal with crises such as the Coronavirus pandemic and want a stronger role for the EU in fighting this crisis. At the same time, contrary to the EU-based polls, the majority of Ukrainian students tie their hopes for successful resolution of the COVID-19 crisis to the ideas of European solidarity, European values, and European integration.

All in all, COVID-19 pandemic and the EU's response to it could be perceived as a crush test for Ukrainian students' pro-European allegiances. On the one hand, it complicated their vision of the EU and made them abandon illusions of European integration as a universal panacea by exposing the EU's inner controversies and diverse political landscape. On the other hand, by stressing the common hardships and levelling up Ukraine's and EU's positions in fighting a common enemy, it gave Ukraine's aspirations for European integration a clearly realistic perspective.

Data Availability.
https://data.mendeley.com/datasets/hc99cmfgym/1

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THE THIRD WORLD CONGRESS OF FREE UKRAINIANS AS A COMPONENT OF STRUGGLE FOR THE RIGHTS OF THE UKRAINIAN NATION

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Summary

The article examines the preparation and proceedings of the Third World Congress of Free Ukrainians (WCFU). The author highlights the key challenges faced by the organizers of this event, including a lack of funds and a decline in interest. Furthermore, the article analyzes the influence of international factors on the activities of the WCFU, particularly the processes of decolonization and the increased focus on human rights and freedoms in the 1970s. As a result of these developments, representatives of the Ukrainian, Belarusian, Estonian, Latvian and Lithuanian World Congresses jointly drafted a "Memorandum on Decolonization of the USSR" and submitted it for consideration by the United Nations (UN). To conclude the Congress, a demonstration titled "Defending the Rights of Ukraine – For the Decolonization of the USSR" was organized.

The article highlights key achievements of the Commission on Human Rights of the WCFU, including the defense of the rights of political prisoners such as Valentyn Moroz, Leonid Plyushch, Mykola Rudenko, Oleksiy Tykhyi, Lev Lukianenko and others. The Commission also participated in conferences under the auspices of the UN in honor of the International Women's Year in Mexico in 1975 and Habitat Conference in Vancouver in 1976. Moreover, the article examines the reaction of the Soviet press to the Third WCFU and identifies the main *clichés* of Soviet propaganda used to describe this event.

Key words: Ukrainian diaspora, Commission on Human Rights, campaign on the decolonization of the USSR, memorandum, demonstration.

1. Introduction

The WCFU was an coordinating organization within the Ukrainian diaspora in the West, consolidating it despite differences among various political groups. Since 1993, the organization has continued to function under the modified name of the World Congress of Ukrainians (WCU) and has supported the Ukrainian people both within Ukraine and beyond its borders. Among the key achievements of this organization are the preservation of the identity of Ukrainian expatriates and the historical memory of key events in Ukrainian history, drawing the attention of influential political structures to violations of the rights of the Ukrainian people in the USSR, and aiding in the restoration of Ukraine's independence. Examining the successful experience of this organization, with the possibility of borrowing from it by contemporary Ukrainian civil and political institutions, shapes the ***relevance*** of the research.

The scientific novelty of this study lies in the exploration, using various sources, including archival documents from Fund 429 of the Central State Archive of Public Organizations, memoirs, and interviews with participants of the WCFU, as well as diaspora and Soviet press.

Various research methods are employed in the article, including theoretical analysis, induction, deduction, generalization, historicism and comparison.

2. Preparation for convening the Third World Congress of Free Ukrainians

The Presidium of the Secretariat began preparations for convening the Third World Congress of Free Ukrainians on June 15, 1977, by sending a questionnaire to the Leaders of Ukrainian Churches, members of the Presidium and the Plenum of the Secretariat, and member-organizations of the WCFU *(Veryha, 1988)* about the duration, location, slogan, character, delegates, the topic of the plenary sessions of the upcoming event. From July 1977 to November 1978, responses with completed questionnaires, comments, and wishes for the future event were received. The Presidium of the Secretariat conducted the XII Plenary Session and broader meetings on November 12–13, 1977, and December 17, 1977, based on which a Press Release was published on January 23, 1978. In this document, the announcement was made regarding the holding of the Third WCFU during November 23–November 26, 1978, in New York, USA *(TSADAHOU, f.429, op.1, d.5)*, and the conditions for the delegation of representatives by various organizations.

To prepare for the Congress, a Preparatory Committee was established, headed by Father Vasyl Kushnir and assisted by Yosyp Lysogor and Ignat Bilynskyi *(TSADAHOU, f.429, op.1, d.5)*. This committee consisted of various commissions: the Program Commission (chaired by Mykola Kushpeta), the Organizational Commission (chaired by I. Bilynskyi), the Statute Commission (chaired by Ivanna Rozhankivska), the Financial Commission (chaired by Bohdan Hnatyuk), the Nominations Commission (chaired by Leonid Fil), the Church-Religious Commission (chaired by Father Myroslav Kharyna), the Verification Commission (chaired by Vasyl Kyryliuk), the Registration Commission (chaired by Ivan Bazarko), the Manifestation Commission (chaired by Yevhen Ivashkiv), the Banquet Commission (chaired by Ivan Vynnyk), the Resolution Commission (chaired by Stefaniya Savchuk), and the Press-Information Commission (chaired by Vasyl Solonynka and Borys Potapenko). It is worth noting that the Committee was located in New York, while the Secretariat of the WCFU was in Toronto, which resulted in the scattering and later loss of documents related to the Third Congress. This posed significant challenges in compiling materials for future reference *(Veryha, 1988)*.

The First Meetings of the Preparatory Committee took place on February 25 and March 19, 1978, in New York. Initially, they determined the event's location, which was the "Americana" Hotel in New York, and the registration fee for delegates, set at $50. Traditionally, the Congresses were dedicated to significant events in Ukrainian history, so the Third Congress was dedicated to marking the 60th anniversary of the Ukrainian statehood. I. Bilynskyi was tasked with preparing a joint appeal of all Ukrainian political organizations on this occasion. They also planned to conduct a political manifestation in support of Ukraine's freedom and the decolonization of the Soviet Union in front of the UN building and a Ukrainian song festival at Carnegie Hall, featuring choirs "Homyn" from the UK, "Dumka" from the USA, and "Burlaky" from Canada (later replaced by the choir "Vesnivka" from Canada) *(TSADAHOU, f.429, op.1, d.8)*. As we can see, WCFU members continued their efforts to consolidate Ukrainian expatriates and demonstrate to the world that the result of Ukraine's self-determination was the Ukrainian National Republic (UNR), and the Soviet regime was an occupation.

The next meetings of the Preparatory Committee were held on April 8 and June 10, 1978, in Toronto. During these meetings, the chairpersons of the Preparatory Committee's subcommittees were instructed to establish contact with the Financial Committee by June 24 to create

a budget in preparation for fundraising for the WCFU *(Veryha, 1988)*. They were also tasked with sending invitations to the leaders of all political centers, and the head of the Statute Commission, Y. Mastykash, presented a project with changes to the composition of the WCFU's leadership bodies. At the same time, I. Bilynskyi reported on the refusal of certain Ukrainian political organizations to sign a declaration on the occasion of the 60th anniversary of Ukrainian statehood *(TSADAHOU, f.429, op.1, d.8)*. As we can see, the issue of discord within the Ukrainian diaspora was still unresolved.

WCFU President V. Kushnir expressed dissatisfaction with the pace of organizing the Third Congress in a letter to the Presidium and heads of the Preparatory Committee's commissions dated June 28, 1978. He requested that clarifications be made to the Congress program and that its budget be established as soon as possible. Additionally, he called for the coordination of the delegate and speaker lists *(TSADAHOU, f.429, op.1, d.5)*. Partial progress towards these goals was made during the Preparatory Committee's meeting on July 22, 1978, in New York. Firstly, the participants of the meeting introduced changes to the program of the Third WCFU, which was scheduled to host congresses and conferences of interregional member organizations of the WFCU, as well as its Councils and Commissions before its official opening. The Congress program also included reports from the leadership bodies of the WCFU from the last term, the election of new leadership, amendments to the Statute, approval of the WCFU's budget, and the "In Defense of Ukraine's Rights and the Oppressed Peoples Enslaved by Moscow – for the Decolonization of the Soviet Union" campaign *(TSADAHOU, f.429, op.1, d.5)*.

On September 15, 1978, the Presidium of the Secretariat of the WCFU issued a Press Release addressed to "To Ukrainians in the Free World", in which they called on the Ukrainian diaspora to unite under the banner of the Third WCFU with the slogan "In Defense of Ukraine's Rights and the Decolonization of the Soviet Union" *(TSADAHOU, f.429, op.1, d.5)*. *"This will be a grand manifestation of our community in the free world, an expression of Unity, Will, and Determination to continue the struggle for an Independent, Sovereign, United Ukraine, for the Right of a person to be free from fear, deprivation, and persecution for national, religious, and political beliefs, which the oppressed by the Moscow-Bolshevik occupier Ukrainian people in Ukraine endure" (TSADAHOU, f.429, op.1, d.5, p.208)* – thus defining the nature of the upcoming Congress and urging contributions to form a budget of $100,000.

In the printed periodical of the founding organization of the WCFU, known as the Ukrainian Liberation League (a socio-political and cultural-educational organization with ideological affiliations to the Organization of Ukrainian Nationalists led by Stepan Bandera (OUN-B)), titled "Homin Ukraine", an article was published five months prior to the Congress. This article was dedicated to the impending event, and within it, the author advocated for increased transparency regarding the forthcoming proceedings. Specifically, the proposal included an early disclosure of the WCFU's presidential candidates and providing the public with comprehensive biographical information about them. *(TSADAHOU, f.429, op.1, d.7)*. On the pages of the "Svoboda" newspaper, Yaroslav Haivas, a member of the OUN-B, also emphasized the insufficient coverage of the preparations for the upcoming event. Furthermore, he proposed to reintroduce the principle of rotating the leadership of the WCFU *(Haivas, 1978)*. However, these proposals were not considered at the joint meeting of the Preparatory Committee and the Presidium of the Secretariat of the WCFU on September 23, 1978, in Toronto. On October 31, 1978, the President of the UCCA and the Registration Commission of the Preparatory Committee, I. Bazarko, submitted a report to the Presidium of the WCFU. He reported on the gradual completion of preparations for the convening the Congress and emphasized the need for media coverage about the future event.

As we can see, during the preparation of the Third Congress, organizers faced declining interest from the public and the media in the event, as well as a lack of funds. The former can be explained by the fact that in the 1970s, the Ukrainian diaspora had focused on the struggle for human rights and the rights of the Ukrainian nation in the USSR. This was seen as a modified form of the struggle for the revival of Ukraine's state independence *(Neduzhko, 2008)*. Consequently, the attention of the media and the public was primarily directed towards human rights activities.

Secondly, Ukrainian diaspora members expected the fulfillment of the declared mission in the statute of the WCFU: *"...to provide all possible assistance to the Ukrainian people in their struggle for freedom and state independence; to strive for the realization of the rights of the Ukrainian people in accordance with the Universal Declaration of Human Rights; to coordinate the activities of its members in accordance with the resolutions and resolutions of the First and subsequent Congresses; to preserve Ukrainian national identity and pass on the Ukrainian language, culture, and traditions from generation to generation"* (Didiuk, 1986:349). Christyna Isajiw, a member of the Human Rights Commission (HRC) of the WCFU, gave the following assessment of the prospects for implementing these provisions: *"The realization of such noble goals would have exhausted the resources of any state administration, much larger than our organization, and the stated goal of resisting no less than the Soviet empire with modest financial and human resources was idealistic at best" (Isaiv, 2016:54).* Consequently, societal expectations were not met, and interest waned.

The implementation of the WCFU's tasks was hindered by the lack of a sufficient number of professional workers. As recalled by C. Isajiw, working in Ukrainian community organizations was unpaid. Because of this, only a small number of qualified individuals were willing and able to engage in this work, while at the same time, leadership and the community opposed the need to transition to a professional level of personnel recruitment *(Isaiv, 2016)*. Her words were corroborated by Mykola Plaviuk, the Deputy President of the WCFU, in an interview just before the opening of the Congress, where he proposed finding a stronger financial base for financing the WCFU and attracting as many professional workers as possible *(TSADAHOU, f.429, op.1, d.7)*.

In addition to the observance of human rights and freedoms, since the 1960s, the global community has been actively concerned with the process of decolonization. On December 14, 1960, the United Nations General Assembly adopted Resolution 1514 (XV) on the Declaration on the Granting of Independence to Colonial Countries and Peoples, and in 1961, to implement its provisions, it established the Special Committee on Decolonization of the UN *(Pavlichenko, 2017)*. Representatives of the Ukrainian, Belarusian, Estonian, Lithuanian, and Latvian World Congresses decided to use this opportunity. For two years, the WCFU's Secretary-General, Yuriy Shymko, coordinated the cooperation of these organizations to create a joint "Memorandum on Decolonization of the Soviet Union". On November 21, 1978, through the mediation of the Canadian mission to the UN, newly elected Canadian Federal Parliament deputy Yuri Shymko handed this document to the President of the UN General Assembly, Indalecio Lievano, and the WCFU's UN bureau distributed it to each delegation of UN member countries *(Shymko, 2017)*.

In the document, the signatory organizations called on the UN, in accordance with the provisions of the Declaration on the Granting of Independence to Colonial Countries and Peoples, to promote the creation of a separate Russian state on its ethnic lands, and on the territory of the 14 non-Russian Soviet republics – sovereign independent states *(Veryha, 1988)*. As Yuri Shymko recalled: *"With the exception of my first trip to Ukraine a few days after Independence*

was declared, I consider that my greatest personal and public achievement took place at the end of my term as Secretary-General of the WCFU' (Shymko, 2017). Considering that Ukrainians were officially represented on the international stage by delegations from the Ukrainian SSR and the USSR, we consider this action an important step in drawing attention to the plight of our people in the Homeland and beyond. In addition, the New York authorities demonstrated their support for the Ukrainian cause by declaring November 22 as "Ukrainian Week" in the city *(Svododa, 1978)*.

On the eve of the Congress's opening, meetings of the Congress Commissions were held, each of which prepared resolutions. Given the political context at the time, the conferences of the HRC garnered the most interest, which took place on November 22–23, 1978, in three sessions: the first session included reports from 19 delegates, the second discussed the state of human rights in the Ukrainian SSR during 1975–1978 (e.g., the presentation by Prof. Kostyantyn Savchuk on "The Soviet interpretation of international human rights norms and their application in law, jurisprudence, and administrative practice"), and the third discussed future plans *(Siromskyi, 2020)*. A particular feature of these meetings was the presence of dissidents such as Leonid Plyushch, General Petro Hryhorenko, Viktor Borovskyi, and Nadia Svitlychna *(Svododa, 1978)*, which significantly increased interest in the event.

3. The course of the Third World Congress of Ukrainian

The Third World Congress of Free Ukrainians opened at 2:00 p.m. on November 23, 1978, with an ecumenical prayer at the Americana Hotel in New York, USA. This prayer involved representatives from Ukrainian churches in the diaspora, all delegates, and event guests. It's worth noting that initially, the religious service was planned to take place at St. Patrick's Catholic Cathedral in New York. However, both the Ukrainian Catholic Church *(Patriarchate, 1978)* and the Orthodox Church vehemently rejected this location, citing the negative stance of Cardinal and Archbishop Terence Cooke of New York regarding the Ukrainian national issue *(TSADAHOU, f.429, op.1, d.6)*.

The First Plenary Session commenced on November 23 at 4:00 p.m. with solemnities that included the performance of the American and Ukrainian anthems and a prayer: *"for our brothers and sisters who are in exile, in prisons, and those enduring hard labor, punishment, and torment" (Veryha, 1988:39)*, recited by Metropolitan Mstyslav Skrypnyk of the Ukrainian Orthodox Church. After this, Fr. V. Kushnir, the President of the WCFU, officially opened the Third World Congress of Free Ukrainians.

A separate address on behalf of the Presidium of the Secretariat of the WCFU, delivered by M. Kushpeta, marked the celebration of the 60th anniversary of Ukrainian statehood: *"Armed with the experience passed down to us by the creators of the State Acts of the 1920s, armed with the experience of the past 60 years of our National Struggle for a Free Ukrainian State, armed with the experience of the previous two World Congresses of Free Ukrainians– inspired by the thought, united by the will and heart of the Ukrainian people in Ukraine and beyond, let us heed the words and the demand of our best sons and daughters: Let us be united! For only in the united, purposeful action and struggle of the entire Ukrainian people is the realization of the ideal of our own sovereign state possible" (Veryha, 1988:43)*. Despite the calls and appeals to the past, representatives from all Ukrainian political backgrounds did not sign this document, indicating divisions among the Ukrainian diaspora.

The Second Plenary Session, dedicated to the reports of the Presidium of the Secretariat and the Control Commission of the WCFU, began on the morning of November 24

(Veryha, 1988). M. Plavyuk was the first to deliver the presentation on behalf of the Presidium of the WCFU. Between 1973 and 1978, there were 87 narrow and 12 wide meetings-conferences of the Presidium and five plenary sessions of the Secretariat of the WCFU. The speaker highlighted the following achievements: the arrangement of the list of member-groups after including new participants in the Second World Congress of Free Ukrainians; visits by representatives of the governing bodies of the WCFU to Ukrainian communities in cities in Canada and the United States, Australia, Germany, the United Kingdom, France, Belgium, Spain, and Venezuela; the use of "Radio Vaticana" and "Radio Liberty" to transmit information to the Ukrainian SSR; the publication of six appeals to Ukrainians in the free world to commemorate the anniversaries of the deaths of Roman Shukhevych and Symon Petliura, the 60th anniversary of Ukrainian statehood, the tenth anniversary of the WCFU, and appeals from the HRC; the establishment of the Information Service of the WCFU, which issued 36 communiqués in Ukrainian and English for the press and launched the "WCFU Bulletin" in 1974 *(Krasnodemska, 2015)*.

The report also emphasized the human rights activities carried out by the HRC, led by Senator Paul Yuzyk. One of the major accomplishments was the establishment of a separate bureau in New York for contacts with the United Nations in 1975, under the leadership of Andriy Semotiuk and later B. Potapenko. They succeeded in accrediting the Information Service of the WCFU with the Department of Public Information of the UN. That year, they prepared a press release regarding the situation of dissidents imprisoned in the Ukrainian SSR and sent it to English-language periodicals *(Siromskyi, 2020)*. The Commission was also involved in the defense of the rights of specific political prisoners such as Valentyn Moroz, L. Plyushch, Mykola Rudenko, Oleksiy Tykhyi, Lev Lukianenko, and others. Members of the WCFU participated in conferences under the auspices of the UN in honor of the International Women's Year in Mexico in 1975 *(Isaiv, 2016)* and the Habitat (housing and sustainable urban development) conference in Vancouver in 1976.

The World Coordination Educational Council (WCEDC), led by Edward Zharskyi and later Theophile Minenko, convened the Pedagogical Conference in Detroit in April 1975. The conference had about 100 educators from Canada and the USA in attendance, and its materials were distributed to all regional representations of Ukrainians. During this event, the Pedagogical Center of the WCEDC was established under the leadership of Roman Drazhnovskyi. It was Roman Drazhnovskyi's initiative that led to teacher conferences in Leicester and Munich in the summer of 1977. In our opinion, this focus on education was entirely correct, as it was educators who were nurturing the new generation in the Ukrainian spirit beyond their homeland.

The financial situation of the WCFU was presented to the delegates by the treasurer of the Presidium, Franko Martyniuk, and the chairman of the Control Commission, Ivan Vynnyk. The budget deficit amounted to 8.47%, and the activities of the governing bodies were being financed by funds raised at the Second Congress *(Veryha, 1988)*. Ivan Vynnyk proposed reevaluating membership dues, conducting collections for the WCFU in all Ukrainian diaspora countries, and involving experts in the Secretariat who could dedicate more time to current work.

According to the program, the next event was a luncheon, which was dedicated to honoring Ukrainian parliamentarians. In his speech, Executive Director of the UCC, Yaroslav Kalba, summarized that over the 90 years of Ukrainians living in Canada, 120 of them had been elected to parliament, and as of 1978, there were 38 Members of Parliament of Ukrainian origin, constituting 5% of the total number *(Veryha, 1988)*. As we can see, Ukrainians successfully integrated into Canadian society and became full-fledged citizens of the country. At the same time, they recognized their affiliation with the Ukrainian people and actively

advocated for the idea of an independent democratic Ukrainian state *(Neduzhko, 2008)*, utilizing their positions.

After lunch, the discussion on the reports of the Third Plenary Session began. Firstly, some delegates expressed dissatisfaction with the presentation of reports in English at the Congress. In response, M. Plaviuk raised the issue of the inadequate level or complete lack of proficiency in the Ukrainian language among the younger generation of the diaspora, indicating a gradual assimilation. Furthermore, the Youth Commission of the last term did not function. Secondly, when comparing the functioning of the governing bodies of the WCFU during the first and second terms, focusing on rotation and the presence of a permanent center, they concluded that the last model was more productive and should be further utilized. Thirdly, they discussed the non-implementation of the resolution of the Second Congress regarding the creation of the WCFU Fund due to tax nuances within the UCC and UCCA, which accounted for the largest share of contributions *(Veryha, 1988)*. We assume that this became one of the reasons for the constant lack of funds for the operation of the WCFU.

Following that, the subsequent individuals delivered presentations on the following subjects: B. Potapenko – "Our Assistance to the Liberation Struggle of the Ukrainian People", General Hryhorenko – "The Liberation Struggle and the Ukrainian Diaspora", Omelian Kovch – "The Issue of Involving Ukrainian Youth in Ukrainian Civil Life", and Iryna Pelenska – "Defending the Ukrainian Child".The morning of Saturday, November 25th, began with the Fifth Plenary Session, opened by M. Plaviuk with a presentation titled "The WCFU's Action in Light of the Needs of the Ukrainian Community in the Free World". In his speech, he outlined his vision for the organization's activities in the upcoming term. Plaviuk proposed the creation of a separate commission within the WCFU to assist Ukrainian dissidents and suggested including the most prominent among them in its composition *(Veryha, 1988)*. He also called for the active engagement of young Ukrainian professionals in leadership positions, active participation in international events to draw attention to the Ukrainian cause, resistance to Soviet propaganda, and continued cooperation with other Congresses.

At the end of the report, to support such activities, a budget of approximately $800,000 to $850,000 was proposed. The topic of finances was further developed by Omelyan Pleshkevich in his presentation titled "Economics – the Foundation of the Ukrainian Diaspora". He emphasized that the lack of financial resources often became an obstacle to the implementation of various plans. To improve the state of the Ukrainian economy in the diaspora, he proposed the establishment of reference offices within the WCFU and regional centers to coordinate existing financial institutions and create new ones *(Veryha, 1988)*.

Later, a panel on "Challenges for Ukrainian Science" was held, featuring prominent scientists from the Ukrainian diaspora at that time. They concluded that it was necessary to develop Ukrainian scientific studies and debunk Soviet historical myths. The final official part of this day was the Sixth Plenary Session. It began with the presentation of reports by the Commissions, which had met the previous day before the Congress opening, and the transmission of their resolutions to the Resolution Commission. The Chairman of the Finance Commission put the preliminary budget for 1979, totaling $125,000, to a vote, with regional centers responsible for funding it *(Veryha, 1988)*. Despite calls to change the formation of the WCFU's financial fund, these suggestions were not implemented.

Following this, a congress banquet took place in the hotel's grand hall with the participation of 1,200 individuals. Canada's Minister of Multiculturalism Norman Cafik delivered a speech, in which he emphasized on the Final Act of the Conference on Security and Cooperation in Europe signed in Helsinki in 1975 by the governments of European countries,

Canada, and the United States. This document elicited mixed reactions; particularly, Ukrainian and Baltic diaspora representations in North America interpreted it as legitimizing the division of Europe and Soviet domination in its eastern part. Canadian historian James Eayrs and former Prime Minister of Canada John G. Diefenbaker argued that it favored the Soviet side *(Siromskyi, 2020)*. However, N. Cafik stressed the Act's key advantage: *"…for the first time, it allowed the governments of free countries to interfere in the internal affairs of other nations. Since the USSR signed this act, we have gained the right to speak on behalf of oppressed people in that part of the world…" (Veryha, 1988:207).* He also assured continued support from the Canadian government for defending the rights and freedoms of people worldwide.

The final official component of the Congress was the Seventh Plenary Session on Sunday, November 26, 1978, during which the composition of the WCFU's leadership for the upcoming term was presented, focusing on the Canadian branch. The position of president was divided into two parts; initially, it was held by M. Plaviuk, with I. Bazarko serving as the first deputy president, and in the second half, the roles were reversed *(Veryha, 1988)*. Vasyl Bezhlivnyk was elected as the General Secretary, and Frank Martyniuk was re-elected as treasurer.

The organizers of the Third WCFU continued the tradition of concluding the congress with a demonstration outside the Soviet consulate in New York, under the slogan for this year, "In Defense of Ukraine's Rights and the Enslaved Peoples of Moscow – For the Decolonization of the USSR". Approximately 5,000 people participated in the protest, and speeches were delivered by dissidents L. Plyushch, P. Hryhorenko, N. Svitlychna, and Lithuanian Simas Kudirka, the personal representative of New York City Mayor Herbert Rickman, Vitaut Kipel, Janis Rikstins, and Paul Saar, representing the Belarusian, Latvian, and Estonian World Congresses, respectively *(Veryha, 1988)*. During the protest, participants chanted anti-Soviet slogans, sang Ukrainian songs, and burned Soviet flags. The demonstration eventually escalated into clashes between protesters and the police. According to the leading U.S. newspaper "The New York Times", this was provoked by a group of youths who threw firecrackers and eggs at the Soviet embassy building and the police officers *(Dionne, 1978)*. In contrast, Ukrainian organizations in the U.S. submitted a protocol to the New York City authorities and the police department regarding the unlawful actions of the latter towards the protesters *(Veryha, 1988)*.

The Third WCFU held in the USSR caused considerable concern. In the Soviet press, both before and after the Congress, there were publications of an offensive and discriminatory nature about this event. The attacks began on November 21, 1978, with a publication by poet Mykola Podolian in "Literaturna Ukrayina", in which the author referred to participants of the Congress as "*SKVUlyants*" (This word in Ukrainian sounds similar to "speculators") *(Podolian, 1978)*. On November 29, Ivan Drach published a poem titled "The White Horse" in "Radyanska Ukrayina", in which he metaphorically associated its participants with Nazis and discredited the organization's purpose *(Drach, 1978)*. Even the humorous publication "Perets" did not refrain from mocking this event. Participants of the WCFU were called a "*bunch of sellouts*" who, for the money of anti-Soviet forces, spread slander against the USSR, accompanied by caricatured depictions of them as dogs crawling before their imperialist masters *(Bilkun, 1978)*.

On January 6, 1979, the Moscow newspaper "Pravda" accused the United States of interfering in the internal affairs of other countries, including the USSR, by supporting : *"…a gathering of five hundred sworn enemies of the Soviet Union under the banner of some so-called world congress of anti-Soviet emigrant organizations".* They did not spare epithets for certain leaders of the WCFU: *"…Vasyl Kushnir, who even before the war was known for his close ties with Hitler's supporters in Canada", "…Omelyan Koval, who, on the orders of the CIA, recruits agents to work against the USSR; Ignat Bilinsky, the protege of Bandera's fascist executioner during*

the war; Lev Dobriansky, a professional intelligence officer…" (Zhukov, 1979). In March 1979, in the magazine "Vsesvit," Vitaliy Cherednychenko traced the genesis of the WCFU, linking it to *"European fascism of the 1930s" (Cherednychenko, 1979).* This publication demonstrated the Soviet government's good knowledge of the history and current state of Ukrainian political emigration. At the same time, due to the increasing political influence of Ukrainian emigrants abroad and their active struggle for the rights of their people in the USSR, as well as the penetration of information about this beyond the "*Iron Curtain*", it prompted the Soviet press to create a negative image of the Ukrainian diaspora. The main *clichés* used by Soviet journalists to describe the WCFU included accusations of collaboration with the Nazis, spreading slander against the USSR, and working for American intelligence agencies for financial reward.

4. Conclusions

Therefore, the convening of the Third World Congress of Free Ukrainians marked a significant milestone in the history of Ukrainian emigration. Firstly, scattered across many countries worldwide, Ukrainians representing various political centers gathered to create a unified vision for the development of the Ukrainian cause. Secondly, the Congress re-elected the leadership of the WCFU, formulated its budget, and outlined its plan of activities for the next term. Thus, the hierarchical structure of Ukrainian overseas organizations continued to function and fulfill its tasks, namely preserving national identity, advocating for the rights of Ukrainians in the USSR, and working towards the revival of Ukrainian independence. Thirdly, the WCFU, as a representative body of the Ukrainian people, had already gained a certain authority within the international community and effectively lobbied for their interests.

Within the framework of the Congress, two significant events occurred that resonated globally. The first was the decolonization initiative of the five World Congresses of oppressed nations in the USSR and the presentation of a joint memorandum to the United Nations. The second was the demonstration "In Defense of the Rights of Ukraine and the Enslaved Nations of Moscow – for the Decolonization of the Soviet Union". The success of the Third WCFU is also confirmed by the reaction of the Soviet government, which organized campaigns of harassment against the organization and its most active members in its media.

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HEALTH, ENVIRONMENT, DEVELOPMENT

HYGIENIC ASPECTS OF ARCHITECTURAL AND PLANNING SOLUTIONS FOR THE CONSTRUCTION OF MENTAL HEALTH FACILITIES

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Summary
In order to take into account the hygienic aspects of architectural and planning solutions in the construction of new mental health facilities (general hospitals, crisis units, hospices, psychological care centers, etc.), multidisciplinary groups should be involved – architectural and planning, urban planning units, the public, medical representatives of medical institutions, relatives, patients, to take into account all the necessary in-hospital factors. To conduct a hygienic assessment of architectural and planning solutions for buildings of psychiatric health care institutions in Ukraine that were built in the eighteenth and nineteenth centuries and to provide a comparative description of the hygienic standards of psychiatric health care institutions in different countries. The study was conducted on the basis of the analysis of the DBN B.2.2-10:2022 "Health Care Facilities", scientific sources of domestic and foreign scientists. A survey was conducted among chief physicians of psychiatric hospitals in Ukraine on safe sanitary and hygienic, anti-epidemic conditions of psychiatric health care facilities. There were 55 psychiatric hospitals in Ukraine before the outbreak of full-scale war: 28.6% of them were built in the eighteenth and nineteenth centuries (from 1786 to 1945), 28.6% after the Great Patriotic War (from 1945–1991), and 42.8% during the period of Ukraine's independence (from 1991–2013). Only 25% of psychiatric institutions have playgrounds for outdoor games equipped with tennis tables and volleyball nets (for table tennis and volleyball), 25% of hospitals have playgrounds for quiet recreation (chess, dominoes), and 12.5% have playgrounds for physical education and recreation (sports and play areas). At the same time, 41.6% of these sites are in satisfactory condition.

Ukraine has adopted the State Construction Standards of Ukraine DBN B.2.2-10:2022 "Healthcare Facilities. Basic Provisions". It provides basic provisions for the design of health care facilities (buildings and structures of all types of health care facilities) during

new construction and reconstruction or during major repairs in health care facilities. However, there is currently no formal sanitary legislation containing sanitary, epidemiological and hygienic requirements for the decoration, equipment and operation of health care facilities with inpatient units.

Key words: architectural and planning solutions, construction, mental health care facilities, state building codes.

1. Introduction

In order to take into account the hygienic aspects of architectural and planning solutions in the construction of new mental health care facilities (general hospitals, crisis units, hospices, psychological care centers, etc.), multidisciplinary groups should be involved – architectural and planning, urban planning units, the public, medical representatives of medical institutions, relatives, patients, to take into account all the necessary in-hospital factors *(Rosen, 2022, Merner, 2023, Chorna, 2022).* All these issues should take into account ensuring the effective work of medical staff, which would motivate and satisfy their professional needs, namely: reduce emotional exhaustion; create appropriate conditions for visual supervision of patients during exacerbation of their behavior and to protect them from their aggressive actions; level the manifestations of stigmatization; create comfortable conditions for patients with mental disorders of the "healing architectural environment", that is, safe, private, home stay of patients until their full recovery and return to the *(McDerott, 2014, Bach, 2018, Chorna, 2021).*

There were 55 psychiatric hospitals in Ukraine before the outbreak of full-scale war: 28.6% of them were built in the eighteenth and nineteenth centuries (from 1786 to 1945), 28.6% after the Great Patriotic War (from 1945–1991), and 42.8% during the period of Ukraine's independence (from 1991–2013). The buildings of psychiatric institutions in Ukraine in the pre-revolutionary period were used for other purposes, such as former barracks for soldiers, royal stables, and religious buildings. The buildings of psychiatric hospitals were constructed according to the "corridor" type and universal sanitary facilities were located at the end of the corridor for all patients *(Chorna, 2020, 2021).*

Prior to the full-scale invasion of Ukraine, 91 facilities provided psychiatric care under the "Inpatient Psychiatric Care" package and 65 facilities under the "Psychiatric Care Provided by Mobile Multidisciplinary Teams" package. According to the Ministry of Health of Ukraine, one in five people in Ukraine will suffer severe mental trauma due to the consequences of a full-scale war, and one in ten will experience anxiety, depression, moderate to severe psychosomatic disorders that may last from 7 to 10 years while the war continues. About 15 million Ukrainians, including more than 7.7 million internally displaced persons (IDPs), need psychological counseling, and 3–4 million Ukrainians need medication *(Chorna, 2022,2023, WHO, 2021).*

According to Moitra M (2022), who conducted a systematic review of 84 countries in the period 2000–2019 on the provision of medical care for patients with depressive disorders, found that in high-income countries, mental health care coverage was 51% (33% received treatment) and in low-income countries up to 20% (8% received treatment). The level of minimum adequate treatment in high-income countries was 23%, and in low-income countries – 3% *(Moitra, 2022).*

According to Lu J. (2021), the prevalence of depressive disorders in Chinese women is higher among unemployed men than among employed women. And the prevalence of the disease also exceeds the level of treatment and treatment, which was 9.5%, of which 3.6% received specialized psychiatric care, 2.7% received community care, 1.5% received general medical care, 0.3% received social care, and only 0.5% of patients with depressive disorders received adequate treatment. The problem of providing timely medical care is exacerbated by the fact that it is more difficult for people living in rural areas to receive timely specialized care due to problems with the construction of infrastructure between cities and villages, and the lack of institutions providing psychological/psychiatric care at the place of residence. This problem is not solved in many countries of the world, but high-income countries set it as one of the priorities for health care *(Lu, 2021, Hu,2018, Yang, 2020).*

2. Materials and methods

To conduct a hygienic assessment of the architectural and planning solutions of buildings of psychiatric health care institutions in Ukraine that were built in the eighteenth and nineteenth centuries and to give a comparative description of the hygienic standards of psychiatric health care institutions in different countries. The study was conducted on the basis of the analysis of the DBN B.2.2-10:2022 "Health Care Facilities", scientific sources of domestic and foreign scientists. A survey of chief physicians of psychiatric hospitals in Ukraine was conducted on safe sanitary and hygienic, anti-epidemic conditions of psychiatric health care facilities *(State Construction Standards of Ukraine B.2.2-10:2022 "Healthcare facilities", 2022).*

3. Results

We have developed and sent to the chief physicians of psychiatric hospitals in Ukraine a "Questionnaire for scientific sanitary and epidemiological assessment of the conditions of psychiatric hospital accommodation". Based on the analysis of a set of questions on sanitary and epidemiological and hygienic parameters characterizing the buildings of domestic psychiatric hospitals, the location of medical buildings and auxiliary units on the land plot, i.e. the design of the buildings, was determined.

In particular, 50% of psychiatric hospitals are located in combined buildings, 25% have a pavilion system (separate buildings), 12.5% each have a centralized system (all in one building) and a block system. The number of floors in psychiatric hospital buildings up to 2 floors is 50%, up to 3 floors – 37.5%, and up to 5 floors, which were built since 1960 – 12.5%.

The service radius of psychiatric hospitals according to the existing urban planning situation is 58.3% up to 1000 meters, 25.0% up to 500 meters and 16.7% up to 300 meters. The location of the land plots of psychiatric hospitals in relation to adjacent industrial enterprises and highways according to the existing urban planning situation is 66.7% – 1000 meters and 33.3% – 300 meters. Plots of psychiatric institutions adjacent to the main street amounted to 33.3% and partially adjacent – 33.3%.

Only 87.5% of hospitals have full fencing, and 12.5% have partial fencing. The height of the fence reaches up to 1.5 m in 12.5% of facilities, up to 2 m in 50%, and over 3 m in 37.5%. In 37.5% of facilities, the fence is concrete, in another 37.5% it is combined (concrete and mesh), in 12.5% it is mesh, and in 12.5% it is made of greenery only.

The pavement of entrances, exits, and pedestrian walkways will be removed in 16.6% of all psychiatric institutions. The territory of psychiatric institutions is provided with outdoor

lighting in 75% of them, while 8.3% and 16.7% do not have any lighting. The distance of ward buildings to the nearest trees with a wide crown is up to 7 meters in 8.3%, 5 meters in 41.7%, and 3 meters in 50.0%.

The average proportion of the hospital's land area per patient is 237.4 m².

Based on the results of the questionnaire analysis, the number of equipped functional areas in psychiatric hospitals, partially equipped and no areas at all in psychiatric facilities for patients with mental disorders was determined (Table 1).

Table 1

Functional zoning plots of psychiatric healthcare institutions of Ukraine, %

Functional areas	Available and equipped zones	Partially equipped	Missing zones
treatment area	75	0	25
occupational therapy area	25	16,7	58,3
physical training area	50	8,3	41,7
recreation area	83,1	0	16,9
area for patients' meetings hospital with relatives	83,4	8,3	8,3
walking courtyards for each department	83,4	8,3	8,3
economic zone	100	0	0

The assessment of the functional zoning of the hospital site shows that 50% of psychiatric hospitals have a physical education area, 8.3% are partially equipped, and 41.7% are missing. Walking courtyards for each ward are available in 83.4% of institutions, partially equipped in 8.3%, and absent in 8.3%. The area of green space in psychiatric hospitals is 83.3%.

The recreation area includes the following areas (Table 2).

Table 2

Main recreation areas for patients with mental disorders in health care facilities, %

Types of sites	Equipment	Absent
a playground for outdoor games for patients	41,6	58,3
a playground for quiet relaxation	41,6	58,3
sports and game zone (stadiums)	33,3	66,7

Only 25% of psychiatric institutions have playgrounds for outdoor games equipped with tennis tables and volleyball nets (for table tennis and volleyball), 25% of hospitals have playgrounds for quiet recreation (chess, dominoes), and 12.5% have playgrounds for physical education and recreation (sports and play areas). At the same time, 41.6% of these sites are in satisfactory condition.

The analysis of the questionnaire's block of questions on the conditions of stay, treatment and rehabilitation of mentally ill patients revealed the possibility of organizing occupational therapy in 25% of psychiatric hospitals, where special workshops are equipped and patients can acquire professional skills, and partially equipped in 16.7% of institutions.

The second block of questions in the questionnaire on sanitary and epidemiological assessment of the conditions of the in-hospital environment of a psychiatric/

psychoneurological hospital concerned the availability of physiotherapy rooms in 66.7% of psychiatric hospitals. These rooms are equipped with old devices: Iskra-1 local dareonvalidation apparatus, Potok-1 galvanizer, ORK-21 irradiator, ultrasound, Radius-01 electrification apparatus, Almaz-014 magnetic therapy apparatus, Solux stationary lamp, GINT-11 physiotherapy apparatus, UHF therapy apparatus, UVO-UHN-1 irradiator Physiotherapy procedures are auxiliary methods of treatment and rehabilitation. Physiotherapy is prescribed in combination with drug therapy for patients with mental disorders and plays an important role in treatment.

The results of the survey revealed the following: 8.3% of patients have their own desks, 58.4% have their own chairs, 50.0% use their own bedside tables and 25% use wardrobes to store their personal clothes (Table 3).

Table 3

Provision of institutions with furniture, bedding, and alarm systems, %

	Secured	Partially secured	Unsecured
Desk for a patient	8,3	16,7	75
Chair for the patient	58,4	33,3	8,3
Bedside table for patient's belongings	50	33,3	16,7
Wardrobe for patient's personal belongings	25	25	50
Curtains on the windows of the ward	50	16,7	33,3
Bed linen for the patient	100	0	0
Towels for the patient	83,3	16,7	0
Alarm system in the department	33,3	41,6	25,4
Alarm system in the wards	21	8,3	70,7
Alarm in sanitary and hygienic rooms	8,3	0	91,6

The sanitary and technical condition of the premises, ceilings, floors, doors, windows is satisfactory in 75%, partially satisfactory and in need of repair in 25%, according to the results of the questionnaire analysis.

All institutions are 100% provided with carbon dioxide fire extinguishers.

As for the water supply of the premises with cold and hot water.

Water sampling for household and drinking needs was in line with the requirements of Sanitary and Epidemiological Standards 2.2.4-171 and DSTU 7525. Water sampling is carried out on a regular basis in accordance with the monitoring of the Regional Laboratory Centers.

The provision of cold water for various purposes is shown in Table 4.

Availability of centralized hot water supply in 66.7% of psychiatric institutions.

Sanitary and hygienic and sanitary-technical condition of the premises of psychiatric health care facilities according to the questionnaires: personal hygiene cabins for women are equipped in 41.7% of facilities, doors between partitions in the toilet room are available in 50% of psychiatric facilities.

The provision of the necessary sanitary equipment for the premises of the food distribution rooms and technical equipment is satisfactory in all institutions. In 25% of the dining rooms there are no conditions for hand hygiene (no handwashers); patients wash their hands in sanitary rooms.

Table 4

Provision of with cold and hot water for various purposes in psychiatric hospitals, %

Premises	Provided with cold running water	Not provided with cold running water
Resident rooms	50,0	50,0
Sleeping rooms	33,3	66,7
Rooms for occupational therapy	41,7	58,3
Rooms for medical and therapeutic classes	25	75
Art therapy rooms	33,3	66,7
Room for rehabilitation classes	33,3	66,7
Room for storing clothes	16,7	83,3
Room for visits by relatives of patients	41,7	58,3
Observation room	25	75
Isolation room	58,3	41,7

South-facing windows of bedrooms have sun protection devices: curtains and in 8.3 facilities they are equipped with blinds. For the safety of patients, the windows of sleeping rooms are equipped with bars in 75% of facilities. The color spectrum of the walls ranges from beige, white, and olive. The height of the walls reaches from 2.4 meters in institutions built during the period of independence to 3 meters (institutions built before independence).

For physical education in psychiatric facilities, 16.6% of the facilities have rooms for physical education, 50% have partially equipped corners for physical education, and 33.4% of the facilities do not have rooms or corners. Daytime sleep for all patients begins from 15.00 to 16–17.00 hours. The duration of the walks depends on the season, on the equipped walking yard in the ward, and on the patients' condition.

Separate rooms in hospitals where court proceedings are held in cases stipulated by Article 14 of the Law of Ukraine "On Psychiatric Care" are available in 66.7% of the surveyed institutions. 58.3% of institutions have rooms for satisfying patients' religious beliefs and conducting religious rites, and 66.7% have rooms for concerts and other events for patients.

At the end of the questionnaire, we asked the chief physicians of psychiatric institutions the following question: "In your opinion, what do you think about the reform of psychiatric care in accordance with the changes in European countries and changes in the Law of Ukraine "On Amendments to Certain Legislative Acts of Ukraine on Psychiatric Care" of 2017 No. 51–52, and what do you propose regarding the mechanism of financing of health care facilities". The percentage in favor of maintaining state funding is 25%, and the transition to a mixed funding system with the introduction of health insurance is proposed at 75%. To the question: "In your opinion: "To transfer powers in the field of mental health care", the answers were as follows: 91.7% – to the Ministry of Healthcare and 8.3% – using the example of the Republic of Poland: all levels of self-government – to united territorial communities (UTCs) – public healthcare facilities.

4. Discussion

Ukraine has adopted the State Construction Standards of Ukraine DBN V.2.2-10:2022 "Healthcare Facilities. Basic Provisions" *(State Construction Standards of Ukraine B.2.2-10:2022 "Healthcare facilities", 2022).* They provide the basic provisions for the design

of health care facilities (buildings and structures of all types of health care facilities) during new construction and reconstruction or during major repairs in health care facilities.

We have proposed proposals that have been adopted into this document:

Psychiatric wards should be located in such a way as to minimize the movement of patients and visitors from other wards through them. During reconstruction (if technologically possible) and new construction (mandatory), psychiatric wards should be designed according to the capsule principle (long corridors and dead ends are not allowed). Wards for children under 18 years of age should be designed as shared wards, which should be equipped with: storage space (bedside tables / cabinets); a place for eating, a bed, equipment for storing food (refrigerator). For the safety of patients in the wards of the psychiatric department, at least 3 sockets, a system for calling medical workers with an acoustic and light signal are equipped.

The materials used to decorate the premises of the patient care and treatment area should contain provisions in the manufacturer's instructions for use in health care facilities and meet the requirements of state sanitary standards and regulations that establish sanitary and anti-epidemic requirements for newly built, restored and reconstructed health care facilities. The layout of the wards should facilitate the independent movement of patients in the wards and corridors of the wards. Patient care areas should be arranged without through passages. The examination room may be a separate room in the ward or may be absent. In the latter case, the examination is carried out in the patient's room if the ward consists of only single rooms. The nurse's post shall be equipped with technological equipment that provides the possibility of video surveillance of all patients / patient rooms or which is located in the center with visual coverage of all wards of the department and direct access to the storage room for medicines. The height of the protective wall covering should be at least 1.2 m from the floor level, in places of intensive traffic (corridors) equipment should be equipped with shock bumpers at a height of 0.6 m to 0.9 m from the floor level. Departments in which patients stay for a long period of time (e.g., hospice, geriatric wards) should have rooms for the long-term stay of patients. The common long-term patient accommodation is designed as a public space for patients, combined with the function of corridors of ward departments. Such a space may include seating, chairs, equipment for children's games in children's hospitals and other equipment in accordance with the medical task and DBN B.2.2-40. All types of wards should have sanitary facilities with a shower area.

In new construction, reconstruction and restoration of healthcare facilities, wards should be designed for a maximum of 2 beds. The area of the ward should be designed to accommodate a bed with the ability to approach from three sides, a table for eating near the window with chairs (according to the number of beds in the ward), storage space (a built-in wardrobe is recommended), a refrigerator and a TV. In wards with two patients, the space between patient areas should be at least 1 meter. The patient area includes the area around the patient and some surfaces and objects (e.g., the patient's bed, bedside furniture and equipment) that are temporarily and/or exclusively intended for the patient. The size and configuration of a double ward should be chosen so that each bed can be removed from the ward without moving the other. In wards where children and family members share a room, there should be: storage space (bedside tables or cabinets); a table for eating, a bed that is comfortable for sleeping (when unfolded, the bed should not reduce the minimum free space around the patient's bed), a universal sanitary room with a shower ramp, and a place for storing food (refrigerator). Wards should have general and night lighting. Night lighting fixtures should be located in such a way as to ensure safe orientation in the dark.

Each ward should have a recreation area for patients' families, which can be located in close proximity to the ward or in a separate room within the building. The recreation area for

patients' families should have chairs and space for one wheelchair. The premises of the recreation area for patients' families should be designed for 1 person for each intensive care bed and 1 person for every 10 beds in the wards. Recreation areas should be accessible to patients from different wards. Access to telephone, Internet, universal sanitary and hygienic facilities should be provided in each recreation area. Each ward should have a place for a separate wardrobe for storing patients' clothes and a bedside table for patients' personal belongings. Clinical structural units may be equipped with rooms for storing bed linen and other items.

Each building of the institution should provide places/rooms for storing wheelchairs. Wheelchair storage areas/rooms should be located near security points or equipped with video surveillance.

In the new construction and reconstruction of rooms for psychological relief of medical staff, a psychologist's office for every 75 employees (in the psychiatric department) involved in providing care on a work shift providing inpatient care should be located in each clinical structural unit of the health care facility, or may be shared by several structural units / building of the facility. It is recommended to equip a psychologist's office in the immediate vicinity of the psychological relief room for medical staff.

However, there is currently no formal sanitary law document containing sanitary, epidemiological and hygienic requirements for the decoration, equipment and operation of health care facilities with inpatient units. The Soviet regulatory document "Sanitary Rules for the Construction, Equipment and Operation of Hospitals, Maternity Homes and Other Medical Hospitals. SanPiN 5179-90", which was approved by the Chief State Sanitary Doctor of the USSR on 29.06.1990, has been canceled by the Order of the Cabinet of Ministers of Ukraine of 20.01.2016 No. 94-r. In addition to this document, all legal acts (more than 300 documents) issued before the adoption of the Act of Independence of Ukraine, i.e., legal acts of the USSR and the Ukrainian SSR, have been repealed. However, the development of a regulatory document of sanitary legislation of Ukraine for modern inpatient hospitals, which are the basic secondary health care institutions under the health care reform, is extremely important and is currently underway. In addition, highly specialized psychoneurological hospitals are classified as tertiary level according to the healthcare reform in terms of the profile of medical services, on the one hand, and secondary level in terms of inpatient facilities, on the other, and therefore the basic sanitary and hygienic requirements are common to both highly specialized hospitals and general hospitals.

A healing and safe environment for patients in psychiatric institutions is a crucial issue in the European Union and around the world. To create such conditions in EU countries, when designing new or reconstructing old mental health facilities, special attention is paid to the hygienic aspects of design, construction and decoration of medical facilities *(Zhang, 2019, Price, 2018, Johnston, 2022)*.

The following principles are recommended for the internal layout of wards for patients with mental disorders: the number of patients in a ward should be no more than 2; the in-hospital environment should be as close to home as possible; safe and secure conditions should be created for both medical staff and patients; the environment should be simple, comfortable and at the same time with adequate visual access (sight lines for medical staff should be along corridors, in recreational and common areas, in courtyards, etc.). Each bedroom should have a separate shower/toilet. As for fixtures, fittings, furniture, showers, beds, flooring, they should be securely fastened and designed to prevent self-harm of patients *(Coburn, 2019)*.

The requirements for the design of psychiatric treatment facilities in the European Union and various developed countries are specified in official guidelines for mental health care

facilities, which are constantly updated based on scientific research, but are completely absent in Ukraine *(McCuskey, 2016, Hunt, 2015)*.

5. Conclusions

1. There were 55 psychiatric hospitals in Ukraine before the outbreak of full-scale war: 28.6% of them were built in the eighteenth and nineteenth centuries (from 1786 to 1945), 28.6% after the Great Patriotic War (from 1945–1991), 42.8% during the period of Ukraine's independence (from 1991–2013). Only 25% of psychiatric institutions have playgrounds for outdoor games equipped with tennis tables and volleyball nets (for table tennis and volleyball), 25% of hospitals have playgrounds for quiet recreation (chess, dominoes), and 12.5% have playgrounds for physical education and recreation (sports and play areas). At the same time, 41.6% of these playgrounds are in satisfactory condition.

2. Ukraine has adopted the State Construction Norms of Ukraine DBN B.2.2-10:2022 "Health Care Facilities. Basic Provisions". It provides basic provisions for the design of health care facilities (buildings and structures of all types of health care facilities) during new construction and reconstruction or during major repairs in health care facilities. However, there is currently no formal sanitary legislation containing sanitary, epidemiological and hygienic requirements for the decoration, equipment and operation of healthcare facilities with inpatient units.

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DIETARY FIBER IN REDUCING OF ELEVATED BLOOD LEAD CONCENTRATION IN CHILDREN

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Summary

The aim of the study was to evaluate the effectiveness of dietary fiber in reducing elevated blood lead concentration (BLC) of Ukrainian children.

Materials and methods. 80 random children aged 4 to 15 years were examined. The lead content in venous blood was detected by atomic absorption spectrometry with electro-thermal atomizer (ET AAS). Indicators of morphological and biochemical blood tests were determined by generally accepted methods.

Results. About a quarter of the children had BLC $\geq 5\mu g/dL$. They had a higher content of eosinophil cells, an increase of ALT activity in the blood compared to children with lower BLCs. As a nutritional supplement for the rehabilitation of these children, dietary fiber from cereals of 10 g per day was used for 30 days, as an addition to main dishes and salads during lunch. As a result, BLC significantly decreased. At the same time, the number of eosinophils in blood and the activity of ALT significantly decreased. The thiol-disulfide ratio increased. Children tolerated nutritional intervention well. Its safety was also indicated by the absence of changes in indicators of the functional state of the liver. This allows us to recommend this dietary supplement for the improvement of children undergoing environmental lead pressure.

Key words: environment, public health, lead exposure, oxidative stress, rehabilitation.

1. Introduction

Humans have been using lead (Pb) for a variety of applications since millennia, and concomitant with this use has developed an ancient recognition of the adverse effects of lead on the human body *(Halmo, 2023)*. With the progress of civilization and active processes of urbanization and industrialization, the scale of use of lead, and accordingly its negative impact on public health, only increased. Lead exposure is estimated to account for 21.7 million years lost to disability and death (disability-adjusted life years, or DALYs) worldwide due to long-term effects on health, including 30% of the global burden of idiopathic intellectual disability, 4.6% of the global burden of cardiovascular disease and 3% of the global burden of chronic kidney diseases *(WHO, 2023)*. Human exposure to lead has been linked to different sources of contamination, resulting in high blood lead concentration (BLC) and adverse health implications, primarily in exposed children *(Swaringen, 2022)*. Evidence-based research has shown the

efficacy and cost-effectiveness of some public policies to prevent or reduce these exposures in the United States and other developed countries *(Levin, 2021)*.

But there remain well defined neighborhoods where children continue to have toxic lead exposures *(Levin, 2021)*. Those neighborhoods tend to have disproportionate commercial and industrial lead activity; a history of dense traffic; older and deteriorating housing; past and operating landfills, dumps and hazardous waste sites; and often lead contaminated drinking water. The population there tends to be low income *(Levin, 2021)*. Such areas are found even in developed countries. In Ukraine, all these negative factors are joined by such as active combat operations in a large part of the territories for more than a year and a half. Therefore, millions of children continue to be at risk for lead exposure despite a dramatic decline over the past 4 decades in the whole world, and hundreds present annually to emergency departments with lead poisoning *(Nadler, 2022)*. As the 20 and 21 centuries progressed, so did the appreciation for increasingly subtle and even subclinical manifestations of lead toxicity *(Halmo, 2023; Capitão, 2022; Disalvo, 2022; Zhang, 2022; Olufemi, 2022; Zhao, 2023; Awadh, 2023; Halabicky, 2023)*. Therefore, lead poisoning cannot be consigned to history books yet *(Emond, 2022)*.

According to WHO recommendations for clinical management of lead exposure, in all cases, action should be taken to identify the source of lead and stop ongoing exposure, as this will, in itself, reduce the blood lead concentration and improve clinical features of toxicity *(WHO guideline, 2021)*. And to remove the lead that has already accumulated in the child's body, chelator therapy is usually used. But pharmacological chelators themselves are quite toxic. Therefore, according to current WHO recommendations, chelation therapy should be considered for a child ($\leq$ 10 years) with a BLC $\geq$ 40 µg/dL *(WHO guideline, 2021)*. However, the BLC that should initiate clinical intervention, according to the same recommendations, is $\geq$ 5 µg/dL *(WHO guideline, 2021)*. Therefore, to accelerate the elimination of lead accumulated in the blood at concentrations of $5 \leq BLC < 40$ µg/dL, an alternative to pharmacological chelators is needed.

The purpose of the work was to evaluate the effectiveness of dietary fiber (DF) as a natural alternative to pharmacological chelators in reducing BLC in children.

2. Material and methods of research

80 random children aged 4 to 15 years, who were in a pediatric treatment facility, were examined. The inclusion of children in the study was carried out subject to the informed consent of the parents of the children after providing detailed information about the procedure and purpose of the work. To diagnose, predict the course and evaluate the effectiveness of clinical interventions, we chose those indicators of laboratory examination that could be the most informative and at the same time relatively accessible. According to modern data, these are the blood lead concentration – BLC *(WHO, 2023)*, hematological and biochemical indices *(Capitão, 2022; Rawat, 2021)*, biomarkers of oxidative stress *(Disalvo, 2022; Zhang, 2022)*.

The determination of lead was carried out in heparinized venous blood by atomic absorption spectrometry with electro-thermal atomization (ET AAS). General clinical tests of blood and urine were carried out according to generally accepted methods. A biochemical blood test included separate indicators of the state of the liver to assess the possible negative effects of lead on these parameters, as well as to control the safety of therapy, as shown in the literature. The content of beta-lipoproteins, bilirubin, total protein, the activity of alanine aminotransferase (ALT), an indicator of the thymol test was determined. The activity of lipid peroxidation (POL) processes was judged by the accumulation of primary (diene conjugants – DC) and final

(malonic dialdehyde – MDA) lipoperoxidation products in the blood. The state of the antioxidant system was assessed by the activity of glutathione-peroxidase (GPO) and by the content of sulfhydryl and thiol-disulfide groups of blood proteins. The research was conducted according to unified methods. The ratio of group averages SH/SS was also calculated.

Statistical processing of the obtained data was carried out by methods of variational statistics using the Student-Fischer T-criterion.

To establish the dependence of the studied parameters on the BLC, as well as considering the recommendations of the WHO on the feasibility of clinical intervention *(WHO guideline, 2021)*, children were divided into 2 groups: 1) a group with a lead content of up to 4.9 µg/dL, n = 62; 2) a group with a lead level in the range of 5.0–9.9 µg/dL, n = 18. The control in assessing the ecopathogenic effects of lead was the first group of children. In assessing the efficacy and safety of the intervention, indicators at the beginning and end of observation were compared.

It is known that the studied indicators can be influenced not only by the level of lead in the blood, but also by age, by the presence of certain diseases. To establish uniformity according to these factors of the selected groups of children, the criterion χ^2 was calculated. This method, also called "particle and proportions analysis", allows us to prove statistically the uniformity or unevenness of the distribution of certain features in groups. Evaluation of calculations χ^2 showed that by age, by the presence of certain diseases, the groups were homogeneous, so the differences in the indicators of morphological and biochemical studies could be explained in this case only by different levels of lead in the blood.

3. Results of the research and their discussion

3.1. Indicators of morphological and biochemical examination

The results of the study are presented in the table. In the biochemical indicators of the functional state of the liver, there were no significant differences both between groups of children with different levels of lead and between different periods of observation, so they were not included in the table.

Analysis of BLC in children showed that about a quarter of them have a concentration above 5 µg / dL at the start of observation. This concentration is a practical value at which clinical interventions can be started according to the WHO recommendations *(WHO guideline, 2021)*. These were children of the second group.

In children of the second group, a significantly greater 1.7 times relative number of eosinophils was also found than in children of the first group. This is consistent with data from other researchers that a significant increase in the number of eosinophils was associated with Pb exposure in children *(Zheng, 2023)*, and it's observed a strong positive correlation between BLC and eosinophils *(Rawat, 2021)*. And it indicates a possible allergy of the body with an increase in the BLC, which can contribute to the development of allergic diseases such as asthma in children *(Zheng, 2023)*.

Compared with the first group, ALT was increased in the blood of children of the second group. This enzyme is organ-specific for the liver, so an increase in its activity in the blood indicates a violation of the integrity of the membranes of hepatocytes. The reason for this may be lead caused by excessive lipoperoxidation in membranes *(Disalvo, 2022; Zhang, 2022)*. Thus, the content of diene conjugants had a pronounced tendency to increase by 40% in children of the second group. This indicates the activation of lipoperoxidation processes with an increase in the level of lead in the blood.

Table 1

**Indicators of morphological and biochemical examination of blood
in children of different groups, M±m**

Indicators	At the beginning of the observation		At the end of the observation	
	BLC ≤ 4.9 µg/dL	BLC 5.0–9.9 µg/dL	BLC ≤ 4,9 µg/dL	BLC ≤ 4.9 µg/dL
Lead, µg/dL	3.21±0.23	8.61±0.22*	3.14±0.21	5.16±0.27**
Hemoglobin, g/l	126.54±1.46	126.39±2.70	127.84±1.53	130.72±2.24
Erythrocytes, T/l	4.00±0.05	4.04±0.09	3.99±0.05	4.06±0.09
Eosinophils, %	1.65±0.24	2.83±0.54*	1.77±0.23	1.17±0.28**
ALT, µmol/l/s	0.42±0.01	0.47±0.02*	0.41±0.01	0.38±0.01**
DC, µmol/l	22.18±1.50	31.38±3.29	24.00±1.51	26.44±2.77
MDA, µmol/l	182.11±5.11	184.61±12.91	169.19±5.90	149.99±12.11
GPO, µmol/l/sec	8.38±0.50	8.54±0.82	9.36±0.63	10.64±1.56
SH-groups, µmol/l	1.11±0.08	1.47±0.24	1.04±0.08	1.25±0.15
S-S-links, µmol/l	0.45±0.06	0.64±0.21	0.40±0.05	0.44±0.06
SH/SS index	2.50	2.29	2.60	2.82

Note. * – The difference is reliable ($p < 0.05$) with the indicator of the first group,
** – the difference is reliable ($p < 0.05$) between the indicators at the beginning and at the end
of the observation in each group.

At the same time, the state of antioxidant protection in children of the second group tended to weaken. Although the values of both indicators of the thiol-disulfide system increased, the increase in the number of SH-groups (by 30%) somewhat lagged the increase in the number of S-S-bonds (by 40%). As a result, the ratio of SH/SS decreased (2.50 in the first group and 2.29 in the second), which indicates depletion of reserves of antioxidant protection of the child's body with an increase in lead concentration.

It is known that impaired prooxidant-antioxidant homeostasis may be the primary mechanism associated with lead toxicity *(Zhang, 2022)*. Therefore, it is important to apply therapeutic intervention to this link in the pathogenesis to prevent the development of lead-induced pathology.

3.2. Justification of the use of dietary fiber

When choosing a medical intervention, we relied on the current recommendations of the WHO guideline, 2021. We informed parents about the need to identify and eliminate sources of lead in their child's body and take the necessary measures to reduce and stop exposure.

To remove from the body of children the lead that has already accumulated, we chose dietary fiber from cereals. The basis was the following considerations. The conventional techniques employed for the elimination of heavy metals are deemed inadequate when the concentration is relatively low *(Abd Elnabi, 2023)*. In our study, the second group of children had such relatively low BLCs (≥ 5 µg/dL, but < 40 µg/dL). In addition, conventional methods exhibit certain limitations, including the production of secondary pollutants, a high demand for energy and chemicals, and reduced cost-effectiveness *(Abd Elnabi, 2023)*. Therefore, there are more and more toxicological studies aimed at identifying natural products applied to the prevention or treatment of Pb poisoning by chelating and decreasing Pb bioaccumulation *(Destro, 2023)*.

Dietary fiber can be such a natural chelator. It is known that lead is largely accumulated in edible parts and fruits of plants growing in lead-contaminated areas *(Knez, 2022; Zhou, 2022; Proshad, 2023; Du, 2023)*. This has led researchers to believe that treated fibrous plant-based

food wastes could be excellent sorbents for eliminating several detrimental and poisonous compounds, such as heavy metals, from wastewater and aqueous solutions *(Karim, 2023)*. It is a renewable and ecologically benign strategy based on a "circular bioeconomy" and "green chemistry" *(Karim, 2023)*. DF's role is also assessed as safe and non-toxic antimicrobial agents to manage chronic lead poisoning in humans *(Yao, 2022)*.

Dietary fibers include non-digestible plant carbohydrates, lignin and resistant starch *(Salvatore, 2023)*. It has long been known that bulking fiber is required as a stool-bulking agent to promote gut motility, bowel movement and removal of unwanted toxins *(Hojsak, 2022)*. It has been established that there is an association between reduced dietary fiber intake and increased accumulation of lead in the body *(Ooi, 2022)*.

Given all these data, as well as the fact that today population-level intakes of dietary fiber are low and needs to increase intake *(Mathers, 2023)*, given the lack of contraindications for fiber in children requiring nutritional support *(Hojsak, 2022)*, we used dietary fiber as a sorbent to remove lead from the body of children.

When choosing a source of dietary fiber, we paid attention to the fact that there is a risk of previous lead contamination of the food additive itself. This risk is greater for vegetables than for cereals *(Knez, 2022; Proshad, 2023; Du, 2023)*. Therefore, we settled on dietary fiber from wheat.

It was also necessary to determine the dose of nutritive supplement. In pediatric practice, concerns exist over tolerance of dietary fiber which may lead to unnecessary restrictions, especially for children receiving nutritional support *(Hojsak, 2022)*. It is still believed that the exact amount and characteristics of the fiber requirement in infants and children need to be further established *(Salvatore, 2023)*. On the one hand, the low intake of fibers has been associated with constipation. On the other hand, the intake of excessive fibers is not recommended as it may cause flatulence and abdominal discomfort *(Salvatore, 2023)*. Current recommendations suggest a daily amount of fiber in the region of 10 g/day for young children increasing to around 20 g/day for adolescents *(Hojsak, 2022)*.

So, as a nutritional supplement for children of the second group, dietary fiber from cereals of 10 g per day was used for 30 days, as an addition to main dishes and salads during lunch.

3.3. Effect of dietary fiber in children

As a result of the use of dietary fiber in children, their BLC has significantly decreased by 1.7 times (see Table). This confirms the data on the sorption properties of dietary fiber *(Karim, 2023)*.

At the same time, those studied indicators that at the beginning of the observation had differences with control were also subjected to correction. The relative number of eosinophils significantly decreased by 2,4 times. This effect may be associated with the positive effect of dietary fiber on the intestinal microbiota *(Mathers, 2023; Puhlmann, 2022)*, which in turn is involved in the formation of the immune response *(Gebrayel, 2022)*. A lack of fiber in the diet has been associated with several disorders in children including allergies *(Hojsak, 2022)*. Historical changes in fiber intake may be contributing to the increase of allergic and hypersensitivity disorders as fiber-derived metabolites are evolutionarily hardwired into the molecular circuitry governing immune cell decision-making processes *(Venter, 2022)*. It is well established that diets with a high fiber content promote a microbiota that has beneficial effect on intestinal health by stimulating intestinal mucus barrier function and promoting immune tolerance over inflammation *(Suriano, 2022)*. Including, obviously, inflammation, which was caused by lead. This is confirmed by a review *(Yao, 2022)*. This review highlights the role of DF and its metabolic products in alleviating lead-induced neuroinflammation by inducing changes in the

species and quantity of gut microbiota and regulating the immune system, providing a potential dietary protective strategy for lead-induced disease *(Yao, 2022)*.

In addition, the activity of organ-specific enzyme for the liver – ALT – normalized in the blood of children who received dietary fiber in our study. Presumably, this happened because of strengthening the membranes of hepatocytes by reducing excess lipoperoxidation in them and improving antioxidant defense. The tendency to increase the level of diene conjugants, which was observed before the intervention, after the course of dietary fiber was eliminated. The thiol-disulfide ratio increased by 23%. This is consistent with the conclusion of a systematic review performed according to PRISMA guidelines, about a positive impact of plant extracts on redox metabolism upon lead exposure *(Destro, 2023)*.

Children tolerated nutritional intervention well. Its safety was also indicated by the absence of changes in indicators of the functional state of the liver.

4. Conclusions

Dietary fibers showed sorbing properties, contributed to the removal of lead from the body. This nutritional supplement has also helped improve metabolic status in children with elevated BLC. This allows us to recommend dietary fibers for the rehabilitation of children undergoing environmental lead pressure. However, additional investigation is needed.

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ULTRASOUND DIAGNOSTICS OF THE LIVER AS AN EFFECTIVE METHOD OF CONTROLLING NON-ALCOHOLIC FATTY LIVER DISEASE THERAPY IN RHEUMATOID ARTHRITIS PATIENTS

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Summary

Today, the method of ultrasound diagnostics is the most widespread method of internal organs and tissues visualization. In particular, the liver ultrasound is the safest and most informative method of diagnosing non-alcoholic fatty liver disease (NAFLD) and an effective method of monitoring the effectiveness of NAFLD treatment, namely its manifestation of liver steatosis. The aim of this paper was to investigate the changes in the state of the liver by ultrasound in rheumatoid arthritis (RA) patients with the use of additional combined therapy of atorvastatin and essential phospholipids. We were examined and treated 77 RA patients with NAFLD (64 women (83.1%) and 13 men (16.9%)), under the age of 55 years old. The patients were divided into 3 studied groups. The first group (n=25) received additional atorvastatin, the second group (n=26) – essential phospholipids, and the third group (n=26) – combination of atorvastatin and essential phospholipids for 6 months. Ultrasound assessment of steatosis was performed before treatment, after 3 and 6 months of treatment. In the III group, an improvement of the ultrasound images was observed already after 3 months of combined use of atorvastatin and essential phospholipids, which was not observed in the separate use of these medicines in the I and II groups. In 6 months of treatment with the studied medicines, positive dynamics of the liver parenchyma echogenicity was observed in all studied groups.

Key words: liver steatosis, autoimmune inflammation, dyslipidemia, non-invasive diagnostics, atorvastatin, essential phospholipids.

1. Introduction

One of the urgent problems of modern medical science is liver damage, with the development of non-alcoholic fatty liver disease (NAFLD), in patients with immunoinflammatory rheumatic diseases. The development of rheumatoid arthritis (RA) is manifested by generalized immunological (autoimmune) inflammation, which is accompanied by a wide range of damage to extra-articular organs, of which liver pathology is prominent, including NAFLD. Most often, NAFLD develops in RA patients with high clinical and immunological disease activity *(Wendt M. M. N., de Oliveira M. C., et al., 2019)*.

The authors *(Vassiliadis E., Oliveira C. P., et al., 2012)* showed that in the liver of RA patients are observed the structural changes on which the functioning of this organ directly depends, namely: granular and fatty dystrophy, deposition of amyloid masses, less often – annular cirrhosis and necrosis of hepatocytes. Similar changes were found in the liver of RA patients by other researchers *(Aithal G. P., 2011)*. Moreover, the works *(Radovanović-Dinić B., Tešić-Rajković S., et al., 2018; Sellami M., Saidane O., et al., 2020)*

demonstrated a correlation between structural and functional liver disorders and the activity of the rheumatoid process.

Non-invasive methods of diagnosing NAFLD are based on two different approaches: biological, which consists in the quantitative determination of serum biomarkers in the blood, and physical – measuring the stiffness of the liver, due to the determination of the internal physical activity of the liver parenchyma *(Castera L., Friedrich-Rust M., Loomba R., 2019; Zhou J. H., Cai J. J., She Z. G., Li H. L., 2019)*. The use of non-invasive markers for the diagnosis of NAFLD, which develops against the background of RA, helps to: 1) identify, at the level of primary care, the possibility of developing NAFLD in persons with a high metabolic risk; 2) at the secondary and tertiary level of medical care, identify patients with severe non-alcoholic steatohepatitis (a worse prognosis is diagnosed); 3) assess disease progression; 4) predict the response of the patient's body to antirheumatic therapy and establish the effectiveness of the use of liver metabolic medicines, which will reduce the need for a liver biopsy. Today, non-invasive methods are used at all stages of NAFLD pathogenesis *(Castera L., Friedrich-Rust M., Loomba R., 2019; Zhou J. H., Cai J. J., She Z. G., Li H. L., 2019)*.

If NAFLD is suspected, which develops as a concomitant disease in RA patients it is necessary to confirm the presence of steatosis. Steatogenesis affects the risk of developing cardiovascular pathologies, diabetes and hypertension. The cause of liver dysfunction is autoimmune processes on the one hand, and the influence of medicines on the other. Hepatotoxic reactions that occur during the use of RA basic therapy depend on the duration of the disease, the timing of administration and the dose of medicines *(Karlsson Sundbaum J., Eriksson N., et al., 2019)*.

As a result of the progression of the pathological process in RA, successive stages of NAFLD develop in the liver – steatosis, steatohepatitis, fibrosis, for the diagnosis of which various methods have been used in recent years. Today, in clinical practice, determining the amount of fat is of interest as an indicator of the effectiveness of treatment. The hepatobiliary system includes the liver, gallbladder, and bile ducts. To assess the macrostructure of the liver, gall bladder and biliary tract, the ultrasound method is used. Today, the ultrasound method is the most widespread method of visualization of internal organs and tissues. Its advantages include safety, high informativeness, non-invasiveness and relatively low cost. The listed properties and the possibility of conducting studies in dynamics make the ultrasound method especially valuable in the examination of various groups of patients, including RA patients. Modern ultrasound equipment allows you to accurately differentiate the structure of the liver and gallbladder. According to authors *(Mitkov V.V., Bryukhovetsky Yu.A., 1996; Batskov S.S., 2004)* the ultrasound method is the most informative, which makes it possible to determine changes in the organ even when other examination methods do not yet indicate deviations from the norm *(Wheeler, P. G., Theodossi, A., et al., 1979)*.

Three ultrasonographic grades of liver steatosis are used to detect liver steatosis by ultrasound *(Batskov S.S., 1996; Brooks M., 1998; PalMentieri B. et al., 2006; Panchyshyn Yu. M., 2008)*.

Grade I – normal liver size or moderate hepatomegaly, liver contours and edges are even, weakly expressed increased echogenicity of liver parenchyma, echo structure is heterogeneous, compacted, vascular pattern is preserved, visualization of hepatic veins is unchanged, hepatic veins and bile ducts, portal vein are not dilated, distal there is no weakening of the ultrasound signal.

Grade II – moderate hepatomegaly, the contours and edges of the liver are smooth, moderately expressed increased echogenicity of the liver parenchyma, the echo structure is heterogeneous, compacted, the vascular pattern is partially preserved, the visualization of the hepatic

veins is slightly changed, the hepatic veins and bile ducts, the portal vein are not dilated, there may be distal attenuation ultrasound signal.

Grade III – hepatomegaly, the contours and edges of the liver are smooth, the increased echogenicity of the liver parenchyma is significantly pronounced, the echo structure is heterogeneous, compacted, the vascular pattern is lost, the visualization of the hepatic veins is complicated, the hepatic veins and bile ducts, the portal vein are not dilated, there is a distal weakening of the ultrasound signal.

The aim of the study was to study the changes in the state of the liver by the method of ultrasound diagnostics in RA patients NAFLD whose using additional combined therapy of atorvastatin and essential phospholipids.

2. Materials and methods

For the study we selected 77 RA patients who had signs of liver fatty infiltration according to ultrasound; under the age of 55 years old; who signed the patient's consent to participate in the study. RA was diagnosed according to ARA criteria *(1987)*; patients with hepatitis, alcohol abuse, >55 years old were not included. There were used a comprehensive assessment of the clinical results, biochemical blood analysis and an ultrasound research method of imaging the liver.

To assess the state of the hepatobiliary system, an ultrasound examination of the liver and gallbladder was performed. All ultrasounds were performed by one doctor; the study was performed on an ULTIMA PRO-30 ultrasound machine, "RADMIR", Kharkiv, using a C2-5 MHz convex sensor. The following sequence of ultrasound examination of hepatobiliary system in RA patients was used: first, visualization of the liver and its examination, then the gallbladder and bile ducts.

All patients were divided into three groups. All patients continued to receive RA antirheumatic therapy. The first group consisted of 25 RA patients with NAFLD (21 women (84%) and 4 men (16%)), who additionally received atorvastatin in a daily dose of 10 mg in the evening for 6 months. The second group consisted of 26 RA patients with NAFLD (22 women (84.6%) and 4 men (15.4%)), who additionally received essential phospholipids at a dose of 600 mg (two capsules) three times a day for 6 months. The third group consisted of 26 RA patients with NAFLD (21 women (80.8%) and 5 men (19.2%)), who, in addition to RA antirheumatic therapy, received essential phospholipids at a dose of 600 mg (two capsules) three times a day and atorvastatin at a daily dose of 10 mg for 6 months.

Analysis and processing of statistical data of the conducted clinical studies was carried out on a personal computer using the STATISTICA 10.0 StatSoft for Windows and MS Excel XP application program package. The reliability of differences was defined at $p<0.05$.

3. Results and discussion

One of the selection criteria for the study was the presence the signs of liver fatty infiltration according to ultrasound in RA patients. 77 RA patients were selected, in whom, according to the results of an ultrasound of the liver, liver changes were registered in the form of hepatomegaly, with increased liver parenchyma echogenicity of various grades of intensity, a heterogeneous echostructure with even contours and edges, which may be a manifestation of liver steatosis of varying grades of severity. According to the results of the liver ultrasound and steatosis criteria, grade I – 30 (38.96%), grade II – 28 (36.36%), grade I – 28 (36.36%) of liver steatosis were found in RA patients (Table 1).

Table 1

**Characteristics of RA patients in the studied groups depending
on the liver steatosis grade**

Grade of steatosis according to ultrasound	I group (n=25)		II group (n=26)		III group (n=26)		Total (n=77)	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Grade I	9	36.00	10	38.46	11	42.30*	30	38.96
Grade II	10	40.00	9	34.62	9	34.62	28	36.36
Grade III	6	24.00	7	26.92	6	23.10	19	24.67

* – statistically significant difference compared to the indicators of the I group, p<0.05

Steatosis of the first and second grades was most often observed in all studied groups. In RA patients of the I group, steatosis of the grade I met in 9 (36.00%) and steatosis of the grade II in 10 (40.00%) RA patients, in the II group – 10 (38.46%) and 9 (34.62%) respectively, in the III group – 11 (42.30%) and 9 (34.62%) respectively. Grade III of steatosis was registered in 6 (24.00%) RA patients group I, in 7 (26.92%) RA patients group II, and in 6 (23.10%) RA patients group III. The difference in indicators of steatosis grades of the studied groups is not statistically significant (p>0.05).

Therefore, the analysis of patients of groups I, II and III showed that they are comparable in age, gender, degree of RA activity and of liver steatosis grade, which allows monitoring of the studied groups of patients according to the effectiveness of the proposed treatment regimens and their impact on ultrasound signs of liver condition.

The criteria for the effectiveness of the complex use the atorvastatin and essential phospholipids in RA patients with NAFLD of the III group can be considered positive clinical dynamics, since after 3 months of treatment, a decrease in fatigue, a feeling of discomfort in the right hypochondrium, and an improvement in appetite were noted. Along with this, there was a positive trend in the detection of the grade of steatosis during ultrasound control of the liver (Table 2).

Thus, in RA patients of the III group, a normal ultrasound image of the liver was achieved after 3 months in 9 (34.62%) patients and in 11 (42.31%) patients after 6 months (Table 2). Whereas in RA patients of the I and II groups, normal ultrasound characteristics of the liver were achieved after 6 months: in 7 (28%) RA patients of the I group and in 5 (19.23%) RA patients of the II group (Table 2).

Positive ultrasound dynamics were noted in all groups, which indicates a positive effect of the studied medicines on the state of the liver (Table 3).

The research results showed that in 17 (65.4%) RA patients of the III group, hepatomegaly decreased already after 3 months of combined use of atorvastatin and essential phospholipids, which was statistically significantly different from the I and II groups (p<0.05) (Table 3).

The analysis of the obtained results of ultrasound examination of the liver in examined RA patients of the III group compared to the I and II groups showed a statistically significant difference between the frequency of occurrence of echographic changes of the liver mainly after 3 months of use of atorvastatin and essential phospholipids. So, if in patients of the I and II groups, increased echogenicity was registered in 23 (92%) and 26 (100%) patients, respectively, then in patients of the III group – in 17 (65.4%) patients at p<0.05 (Table 3). After 6 months of separate and combined use of atorvastatin and essential phospholipids, no difference in echogenicity between the studied groups was found (p>0.05) (Table 3). Liver contours and edges were equal in all studied groups at all stages of patient examination.

Table 2

**Characteristics of rheumatoid arthritis patients depending
on the liver steatosis grade before and after treatment**

Group	Treatment term		The steatosis grade according to ultrasound data			
			I	II	III	absent
I group (n=25)	Before treatment	n	9	10	6	-
		%	36	40	24	-
	After 3 months	n	9	10	6	-
		%	36	40	24	-
	After 6 months	n	9	6	3	7
		%	36	24	12	28
II group (n=26)	Before treatment	n	10	9	7	-
		%	38.46	34.62	26.92	-
	After 3 months	n	12	9	6	-
		%	46.15^*	34.62^*	23.08	-
	After 6 months	n	10	6	3	7
		%	38.46	23.01	11.23	26.9
III group (n=26)	Before treatment	n	11	9	6	-
		%	42.31	34.62	23.08	-
	After 3 months	n	7	5	4	9
		%	$26.92^{*,\#}$	$19.23^{*,\#}$	$15.38^{*,\#}$	$34.62^{*,\#}$
	After 6 months	n	9	4	2	11
		%	34.62	$15.38^{*,\#}$	$7.69^{*,\#}$	$42.31^{*,\#}$

* – statistically significant difference compared to the indicators of the I group patients, $p<0.05$;
\# – statistically significant difference compared to the indicators of the II group patients, $p<0.05$.

During the study of the size of the left and right of the liver lobes, it was found that the patients of all studied groups had an enlarged right lobe of the liver, the decrease in the size of which was observed mainly in RA patients of the III group – in 9 (34.6%) patients after 3 months whose were used combined of atorvastatin and essential phospholipids (Table 3).

After 6 months, there was no difference in the size of the right and left liver lobes between the studied groups (p>0.05) (Table 3). At the same time, a decrease in liver density was observed only in the III group RA patients with NAFLD (Table 3).

Thus, in patients of the III group, an improvement of the ultrasound imagens was observed already after 3 months of combined use of atorvastatin and essential phospholipids, which cannot be observed with the separate use of these medicines. In 6 months after the start of treatment with the studied medicines, a positive dynamic of liver parenchyma echogenicity was observed in all studied groups.

Therefore, the corrective effect of atorvastatin and essential phospholipids that we discovered when they are used separately and, especially, when combined, on the indicators of the echostructure and echogenicity of the liver parenchyma, testify to their hepatoprotective effect on the liver. The main mechanism of action of these medicines is the reduction of fatty infiltration and the correction of metabolic disorders. Based on the obtained results, it is clear that essential phospholipids have not only a hepatoprotective effect, but also a cholesterol-lowering effect, which makes their use justified in RA patients with NAFLD. As for atorvastatin, in addition to the effect on lipid metabolism, this drug has other effects that enhance

its anti-atherosclerotic effect. It inhibits the synthesis of isoprenoids – substances that act as growth factors on the proliferation of vascular smooth muscle cells, reduces the activity of some coagulation and aggregation factors, and reduces blood plasma viscosity. Thanks to this action, it improves hemodynamics and contributes to the normalization of blood coagulation processes. In addition, HMG-CoA reductase inhibitors affect the metabolism of macrophages and thus suppress their activation, which reduces the risk of rupture of atherosclerotic plaques. All these properties of atorvastatin and essential phospholipids allow them to be used in combination with each other, in particular, in the treatment of steatosis in RA patients with NAFLD.

Table 3

Results of ultrasound examination of the liver in rheumatoid arthritis patients under the effects of atorvastatin and essential phospholipids

Parameters		I group (n=25)			II group (n=26)			III group (n=26)		
		Before treatment	3 months	6 months	Before treatment	3 months	6 months	Before treatment	3 months	6 months
Hepatomegaly	n	25	23	16	26	26	17	26	17	15
	%	100	92	64	100	100	65.4	100	65.4*,#	57.7
Echogenicity *decreased*	n	0	2	9	0	0	9	0	9	11
	%	-	8	36	-	-	34.6	-	34.6*,#	42.3
increased	n	25	23	16	26	26	17	26	17	15
	%	100	92	64	100	100	65.4	100	65.4*,#	57.7
Echostructures *monogeneous*	n	0	2	9	0	0	9	0	9	11
	%	-	8	36	-	-	34.6	-	34.6*,#	42.3
heterogeneous	n	25	23	16	26	26	17	26	17	15
	%	100	92	64	100	100	65.4	100	65.4*,#	57.7
Contours and edges *equal*	n	25	25	25	26	26	26	26	26	20
	%	100	100	100	100	100	100	100	100	100
unequal	n	-	-	-	-	-	-	-	-	-
	%	-	-	-	-	-	-	-	-	-
Dimensions of the right lobe *increased*	n	25	24	16	26	26	17	26	17	15
	%	100	96	64	100	100	65.4	100	65.4*,#	57.7
not increased	n	0	1	9	0	0	9	0	9	11
	%	-	4	36	-	-	34.6	-	34.6*	42.3
Dimensions of the left lobe *increased*	n	25	23	14	26	22	15	17	16	14
	%	100	92	56	100	84.6	57.7	65.4*,#	61.5*,#	53.8
not increased	n	0	2	11	0	4	11	9	10	12
	%	-	8	44	-	15.4	42.3	34.6*,#	38.5*,#	46.2
Density *compacted*	n	16	13	9	16	9	8	15	10	6
	%	64	52	36	61.5	34.6*	30.8	57.7	38.5*	23.1*,#
uncompacted	n	9	12	16	10	17	18	11	16	20
	%	36	48	64	38,5	65.4*	69.2	42.3	61.5*	76.9*,#

* – statistically significant difference compared to the indicators of the I group patients, p<0.05;
\# – statistically significant difference compared to the indicators of the II group patients, p<0.05.

4. Conclusions

1. Comprehensive examination of RA patients with the aim of analyzing the hepatobiliary system by using ultrasound and laboratory research allows detecting the pathology of the hepatobiliary system in the early stages.

2. The initial development of NAFLD, manifested by steatosis, in RA patients significantly limits the possibilities of adequate, long-term antirheumatic and hypolipidemic therapy, which is associated with the development of hepatotoxicity and an increase in cardiovascular risk.

3. Treatment of RA patients with NAFLD should consider aspects of not only the pathogenetic, but also the prognostic effect of medicines, as well as take into account the most significant mechanisms of the formation of the systemic pathological process.

4. In addition to antirheumatic therapy in RA patients with NAFLD, the use of essential phospholipids at a dose of 600 mg three times a day and atorvastatin at a daily dose of 10 mg for 6 months allows to reduce the severity of hepatotoxic reactions, avoid stopping or canceling antirheumatic therapy, and reduce the grade of liver steatosis.

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IMPACT OF STRESS FACTORS ON UKRAINIAN WAR VICTIMS IN THE COUNTRY AND ABROAD

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Summary
The purpose of the study was to estimate the frequency of the most probable stress factors and behavioural disorders based on the our own survey results among Ukrainians in accordance with the place of residence. The study was conducted from January to August 2023 and included 160 participants, divided into 3 groups: 1 group – those who remained in their hometown (n=80), 2 – internally displaced people (n=49), 3 – participants, living abroad (n=31). A deterioration in the quality of sleep and nutrition was often found among patients in group 2 and 3, common stress factors in these groups included loss or change of job and low socialization. In group 1, sleep disturbances were caused by traumatic experience, changes in work and its conditions affected the frequency of smoking, alcohol abuse and the quality of nutrition. In order to reduce the severity or eliminate behavioural risk factors, special attention should be paid to overcoming the consequences of traumatic experiences among people who remain in their hometown, to integrating internally displaced persons into society, and to imme-diate providing psychological support to people living abroad.
Key words: war in Ukraine, armed aggression against Ukraine, behavioural risk factors, questionnaire, sleep disturbances, poor nutrition, smoking, alcohol consumption.

1. Introduction

During an armed conflict, both the physical and mental components of the health of the country's residents are negatively affected. Thus, epidemiological studies of depression and post-traumatic stress disorder (PTSD) among citizens in war-affected regions have yielded heterogeneous estimates of the prevalence of these conditions *(Morina et al., 2018)*. Available surveys have shown that 26% and 27% of war survivors have PTSD and/or depression, respectively. Older age was also found to be associated with a higher prevalence of depression, and higher levels of unemployment were associated with a higher prevalence of PTSD. Results of another study, based on a survey among Ukrainians in 2012–2016, revealed that the conflict was associated with the development of chronic diseases only in the last year of the sample, and the impact of the conflict on mental health in Ukraine was more significant away from the conflict zone, probably due to differences in exposure to mass media and social networks, cultural differences (e.g. language) or ethnic groups *(Osiichuk, Shepotylo, 2020)*. According to the results of a 2019 systematic review, which included 65 studies (34% of which were of medium and high quality) and assessed the consequences of 23 military conflicts in different countries, armed conflict was associated with the deterioration of the physical health of the population, namely with an increase in the risk of coronary heart disease (CHD), cerebrovascular and endocrine diseases, as well as an increase in mean arterial pressure *(Jawad et al., 2019)*. Moreover, not only the prevalence of CHD and non-specific heart diseases has increased, but also the mortality from these pathologies, the prevalence of diabetes mellitus (DM) and arterial hypertension (AH) have also increased among the population. Among cardiovascular disease (CVD) risk factors that have been associated with armed conflicts, the most common were increases in both systolic and diastolic blood pressure. Among behavioural CVD risk factors significantly increased the prevalence of smoking and alcohol consumption because of armed conflicts. Although the presence of stress is often associated with the development of obesity or overweight, no evidence of an association between armed conflict and changes in body mass index (BMI) was found. In contrast, the authors of a study among the population of Aleppo, Syria, found that prolonged armed conflict was associated with a high prevalence of obesity (43.2%) *(Al Ali et al., 2011)*. Regarding behavioural risk factors, 82.3% of the population had low physical activity, 39.0% smoked, and 33.4% did not follow a healthy diet. All the results of the above studies indicate that the population of countries where armed conflicts took place, is especially in need of timely and high-quality primary prevention of the development of chronic non-infectious diseases, mainly CVD.

Stress factors are common to both mental and physical pathologies *(Krantz et al., 2022, Meng et al., 2021)*. Therefore, it is especially important in modern conditions to know and timely identify stress factors and the disorders caused by them. Currently, there is a very limited amount of data on such disorders and the most common factors of their occurrence. The emergence of behavioural risk factors belongs to the negative consequences that arise first and can be easily noticed even in the absence of medical experience. Such factors include deterioration of nutrition, quality of sleep and work regime, reduced physical activity, alcohol abuse, and smoking. These same factors also belong to cardiovascular risk (CVR) factors, which, against the background of the increased share of CVD during armed conflicts, requires special monitoring. Although there are almost no studies on lifestyle changes of the civilians as a result of military operations, there are many studies that connect other stressful factors (change in marital status, shift work, etc.) with the development of the behavioural risk factors mentioned above *(Deguchi et al., 2022, O'Connor et al., 2021)*. Therefore, under martial law conditions, in addition

to the direct traumatic impact because of hostilities, possible stress factors can be attributed to changes in working conditions, social isolation or reduction of social interactions, feelings of security and comfort, etc. Unexpected results were obtained from a longitudinal cross-sectional study in the city of Lausanne, Switzerland *(Abolhassani et al., 2019)*. The authors compared the quality of life of adults over 65 years old, born in 1934–1938 (pre-war period), 1939–1943 (war period) and 1944–1948 (baby boom). Although overall satisfaction with quality of life did not differ between cohorts, despite higher educational attainment within cohorts and a shift between pre-war and wartime cohorts towards lower morbidity and a higher proportion of singles, the "feeling of security" among those born during the war was significantly higher compared to other cohorts, which shows that the prevalence of stress factors and the severity of their impact on the quality of life and health of people can differ significantly when comparing population cohorts in the pre-war, war and post-war period. Still, it remains unclear which of the above factors have the most pronounced influence on the deterioration of a person's lifestyle precisely under the martial law conditions.

In addition, for effective screening and timely correction of newly detected pathologies, it is important to understand which category of people is at risk of developing stress-related disorders. It is known that the forced migration of the population during the conflict can contribute to the spread of infectious diseases and, as a result, an increase in the number of chronic diseases and disabilities due to a decrease in immunity and compensatory capabilities of the body *(Roberts et al., 2017)*. Therefore, not only the prevalence of stressors but also the severity of the negative impact of stressors may differ between people who have left their homes compared to those who have not.

Considering the presence of a large number of unsolved questions regarding the risk factors of stress-related disorders in the conditions of martial law, the aim of our study was to assess the frequency of the most probable stress factors and to identify related behavioural disorders among Ukrainians, depending on their current place of residence.

2. Materials and methods

From January to August 2023, 160 residents of Ukraine of various ages, who annually underwent regular examinations at the " L.T. Mala Therapy National Institute of the National Academy of Medical Sciences of Ukraine" (Kharkiv, Ukraine) until 2022 year inclusive, participated remotely in the study. All patients were divided into 3 groups, depending on the place of residence at the time of the survey: 1 group – participants who remained in their hometown (n=80), 2 – internally displaced people (n=49), 3 – participants who lived abroad after the beginning of the armed conflict (n=31). Patients were also divided into groups by age: 18–29, 30–49, 50–59, 60–69 years and >70 years.

Germany, Poland, Lithuania, Ireland, the Czech Republic, Bulgaria, Romania, Switzerland, Denmark, Finland, the USA, Belgium, Morocco, Norway, and Canada belonged to the countries in which the participants of group 3 lived. The largest share of surveyed patients lived in Germany (n=14, 42.4%). It was found that some patients of group 1 (n=2, 2.5%) and group 2 (n=3, 6.1%) left Ukraine, but later returned. In addition, patients of all groups had the experience of changing their place of residence within Ukraine during the war until the time of the survey: in group 1 – 36.3%, in group 2 – 93.9%, in group 3 – 71.0%.

As a questionnaire we used "Our own questionnaire for determining health status, assessment of behavioural, socio-economic and cultural factors" (Fadieienko, 2021: Appendix 11, pp 241–244). In all patients we assessed behavioural risk factors for the development

of CVD, the severity of which could change during military time due to differences in stress factors. Such behavioural factors included violations of the regime and quality of nutrition, sleep, physical activity, an increase in frequency and intensity of smoking, and alcohol abuse. Changes in these factors were evaluated by patients within 6 months before the beginning of the survey. Self-reports on nutrition assessed following factors: insufficient nutrition or inability to purchase high-quality products, deterioration of nutrition; self-reports on sleep disorders included deterioration in quality, duration, mode; among harmful habits, we assessed the presence and increase in the frequency of smoking and alcohol abuse; self-reports on physical activity included assessment of intensity and frequency of physical exercises during the week.

Data on anthropometric parameters of the subjects, including height and weight, were also collected. Changes (increase or decrease) in the respondent's weight during the 6 months before the start of the survey were assessed as another CVD risk factor.

The list of probable stress factors included the following parameters:

• *quality of life* based on assessment of residential comfort, financial resources, availability of hobbies, feeling of safety on the street and at home, quality and availability of medical care, including specialized care;

• *social involvement* based on the assessment of integration into a group, associations, social circles, the ability to share one's thoughts, ideas, the need to make decisions about others, self-assessment of one's usefulness and significance for other people, care of relatives/family, friends/acquaintances for the interviewee;

• *work* based on an assessment of its availability (including its loss), change of profession, deterioration of working conditions or reduction of wages;

• *traumatic factors* directly related to military actions, as well as the frequency and severity of their impact, for example, the interviewee witnessed airstrikes, artillery shelling, was injured as a result of these events, saw the bodies of killed civilians, lost acquaintances/relatives/friends as a result military operations.

In addition, in order to assess the most obvious general consequences of the negative impact of various risk factors on the general state of human health in wartime conditions, we chose to evaluate self-reports on whether the patient had new pathologies or whether there were changes in treatment during six months prior the beginning of the survey.

Statistical processing of the obtained data was carried out using the computer program SPSS 21.0 for Windows XP. The analysis of the studied parameters with regard to the normality of the distribution was carried out according to the Kolmogorov-Smirnov test. Quantitative and qualitative variables were used in the statistical analysis. Qualitative data were presented as percentages; quantitative – in the form of the average and standard error of the average ($M \pm m$). Student's t-test was used to compare quantitative indicators. The frequency of symptoms in the groups was compared using the Pearson $\chi 2$ test (chi-square). One-factor variance analysis was used to study the influence of factors. Testing of the hypothesis about the homogeneity of variances in the compared groups was carried out using Levene's test. For all types of analysis, differences were considered statistically significant at $p<0.05$.

3. Results and discussion

There were no significant differences between groups in body weight, height and BMI ($p>0.05$). The results of the assessment of anthropometric status are presented in **fig. 1**.
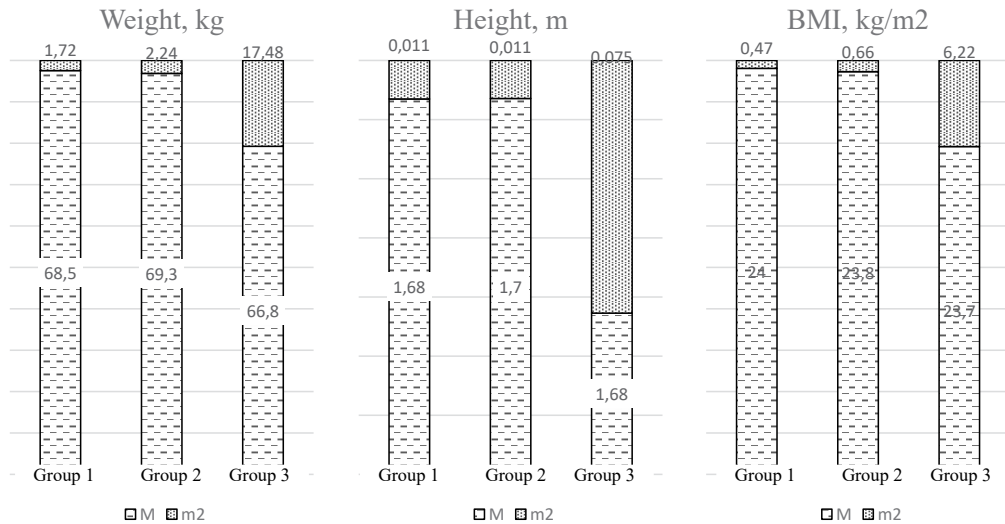
Fig. 1. Anthropometric indicators of the participants in studied groups

Significant differences between groups in behavioural risk factors were observed in the assessment of sleep and nutrition (**table 1**). Study participants who changed residence (groups 2 and 3) had worse quality (p=0.024) and less quantity (p=0.033) of sleep compared to participants in group 1, with the worst scores observed among people who moved abroad. A clear sleep pattern was more often observed in patients who at the time of the survey lived in their own homes (group 1), while sleep pattern violations were most common among patients who changed their place of residence within Ukraine (p=0.003). It can be assumed that the reason for the deterioration of sleep duration and quality is low adaptation to new living conditions and time zone (for group 3). A similar trend was also observed with deterioration of nutrition, namely, this state occurred least often among participants of group 1, and most often among participants of group 3 (p=0.037). That is, a higher risk of developing CVD due to sleep and eating disorders was observed in people who had to leave their homes even in comparison with participants in conditions of constant anxiety and regular shelling within Ukraine. Interestingly, there were no differences in the frequency of smoking, alcohol abuse, and intensity of physical activity. Though, the studies mentioned earlier revealed changes in these risk factors, frequency differences during wartime were studied only in comparison to peacetime. Given the fact that wartime and forced displacement are a significant stress for every person, it cannot be ruled out that the prevalence of CVD risk factors listed above has increased in our participants compared to peacetime. But there are currently no data in our study regarding this because the questionnaire of these patients was not conducted in full before the war.

Significant differences between groups were found in the participants' self-assessment regarding their living comfort, socialization, and work (**table 2**). In groups 2 and 3, there were almost no participants who were very satisfied with their living comfort, the least satisfied were the patients of group 2 (p=0.037), who were forced to change their place of residence within Ukraine, which probably contributed to a decrease in the quality of life of these respondents. It is worth noting that respondents from group 3 were the least involved in the social sphere, namely it was difficult for them to integrate into a new society (p=0.023), and it seemed to be the most obvious reason why the opportunity for self-expression was significantly limited in

this group (p=0.025). In addition, group 3 participants complained significantly more often about the lack of care from relatives (p=0.028). The participants of group 2 had a slightly better situation compared to group 3 – it was easier for them to socialize, and they more often noted the care of relatives. Language barriers and cultural differences are most likely the cause of such differences, but this assumption requires further research. A large proportion of participants in group 2 and 3, compared to group 1, lost their jobs (p=0.001) or were forced to change jobs (p=0.048), which probably negatively affected both the financial and social spheres of their life, and therefore overall quality of life. It is well-known that loneliness, isolation, lack of support from acquaintances, friends and relatives are risk factors for the development of many neurological and later physical disorders. Therefore, people who were forced to leave their usual social network (groups 2 and 3), and even more so – to go abroad (group 3), can be classified as at high risk of developing health disorders, especially in the psycho-emotional sphere.

Table 1

Frequency of behavioural risk factors among the participants in studied groups

Indicators	Group 1 (n=80)	Group 2 (n=49)	Group 3 (n=31)
The quality of sleep worsened 1-yes 2-no	52 (65,0%) 28 (35,0%)	37 (75,5%) 12 (24,5%)	28 (90,3%) 3 (9,7%)
χ^2=7,495, p=0,024			
The amount of sleep decreased 1-yes 2-no	46 (57,5%) 34 (42,5%)	32 (65,3%) 17 (34,7%)	26 (83,9%) 5 (16,1%)
χ^2=6,833, p=0,033			
Clear sleep pattern 1-yes 2-no	32 (40,0%) 48 (60,0%)	6 (12,2%) 43 (87,8%)	8 (25,8%) 23 (74,2%)
χ^2=11,590, p=0,003			
Deterioration of nutrition 1-yes 2-no 3-other	26 (32,5%) 54 (67,5%) 0 (0%)	18 (36,7%) 30 (61,2%) 1 (2,1%)	19 (61,3%) 12 (38,7%) 0 (0%)
χ^2=10,198, p=0,037			

Table 2

Frequency of stress factors among the participants in studied groups

Indicators	Group 1 (n=80)	Group 2 (n=49)	Group 3 (n=31)
1	2	3	4
Residential comfort, n 1-very dissatisfied 2-unsatisfied 3-neutral attitude 4-satisfied 5-very satisfied	2 (2,5%) 4 (5,0%) 18 (22,5%) 33 (41,3%) 23 (28,7%)	1 (2,0%) 3 (6,0%) 21 (42,8%) 20 (40,8%) 4 (8,2%)	0 (0%) 1 (3,2%) 11(35,5%) 17 (54,8%) 2 (6,5%)
χ2=16,402, p=0,037			

Table 2 (Continued)

1	2	3	4
An opportunity to share thoughts, ideas			
1-complete absence	3 (3,7%)	2 (4,1%)	4 (12,9%)
2-quite significant absence	8 (10,0%)	5 (10,2%)	9 (29,0%)
3-digit absence	16 (20,0%)	14 (28,6%)	9 (29,0%)
4-is not quite full	32 (40,0%)	19 (38,8%)	5 (16,2%)
5-I have full	21 (26,3%)	9 (18,3)	4 (12,9%)
$\chi 2$=17,491, p=0,025			
Integration (in social circles, groups, associations)			
1- I can't at all	12 (15,0%)	8 (16,3%)	9 (29,1)
2- I almost can't	12 (15,0%)	14 (28,6%)	5 (16,1%)
3- I sometimes succeed	24 (30,0%)	17 (34,7%)	13 (41,9%)
4- I have a great opportunity	20 (25,0%)	9 (18,4%)	4 (12,9%)
5- I can always	12 (15,0%)	1 (2,0%)	0 (0%)
$\chi 2$=17,777, p=0,023			
Care of relatives			
1- my relatives cannot take care of me at all	1 (1,2%)	1 (2,0%)	1 (3,2%)
2- my relatives can hardly take care of me	5 (6,3%)	1 (2,0%)	4 (12,9%)
3- my relatives can take care of me sometimes	10 (12,5%)	11 (22,5%)	10 (32,3%)
4- my relatives have a great opportunity to take care of me	25 (31,3%)	22 (44,9%)	10 (32,3%)
5- my relatives always take care of me	39 (48,7%)	14 (28,6%)	6 (19,3%)
$\chi 2$=17,174, p=0,028			
Work			
1-available	51 (63,8%)	21 (42,8%)	13 (41,9%)
2-absent	29 (36,2%)	28 (57,2%)	18 (58,1%)
$\chi 2$=7,260, p=0,027			
Job was lost			
1-yes	8 (10,0%)	10 (20,4%)	14 (45,2%)
2-no	65 (81,3%)	34 (69,4%)	14 (45,2%)
3-other	7 (8,7%)	5 (10,2%)	3 (9,6%)
$\chi 2$=18,025, p=0,001			
Profession was changed			
1-yes	7 (8,7%)	10 (20,4%)	10 (32,3%)
2-no	68 (85,0%)	36 (73,5%)	19 (61,3%)
3-other	5 (6,3%)	3 (6,1%)	2 (6,4%)
$\chi 2$=9,583, p=0,048			

The characteristics of the influence of stress factors on the behavioural factors of CVR for group 1 are presented in **table. 3**. It was found that the impact of traumatic event experience on the disturbances of sleep (reduction in quality, disturbed duration or regimen) was the most common, namely, the examined were witnesses of artillery shelling (p=0.001 for the deterioration of sleep quality), saw the bodies of killed civilians (p=0.039 for sleep regimen), as a result of which, presumably, the feeling of safety on the street was lost, which also affected sleep disturbances (p=0.033 for the deterioration of sleep quality). Other causes of sleep disorders included financial resources (p=0.002 for worsening sleep quality and p=0.023 for waking up), change of residence in Ukraine (p=0.012 for reduced amount of sleep) and possible limitation

of the opportunity for socialization, which was observed in complaints about the impossibility of sharing one's thoughts, ideas (p=0.006 for waking up) and a feeling of one's insignificance, powerlessness (p=0.009 for sleep mode).

Table 3

Stress factors that influenced the appearance of behavioural risk factors in the studied participants who remained in their hometown

Behavioural risk factors	Identified influencing factors	p-value
Low quality and lack of sleep as a risk factor		
Decreased amount of sleep	I had to change my place of residence in Ukraine	0,012
The quality of sleep worsened	Financial resources	0,002
	Being a witness to the artillery shelling	0,001
	The total amount of traumatic exposure	0,0001
	Safety on the street	0,033
Awakening	Financial resources	0,023
	An opportunity to share thoughts, ideas	0,006
Sleep regimen	Feeling of insignificance, inability to do something, powerlessness	0,009
	In the last 6 months there were no changes at work or there was an improvement in working conditions, etc	0,035
	The total amount of traumatic exposure	0,039
	Witnessing civilians killed (not through mass media, that is, not via photos or videos)	0,039
Improper diet as a risk factor		
Nutritional deterioration	The feeling that you are doing useful things	0,022
	Profession changed in the last 6 months	0,043
	Safety at home	0,021
	Safety on the street	0,0001
Harmful habits as a risk factor		
Smoking	Friends/acquaintances taking care of you	0,016
	Being a witness to airstrikes	0,032
	Among your acquaintances/relatives/friends are those who died as a result of military operations (including those who were in service)	0,016
Increased frequency of smoking	Reduced wages/deteriorated working conditions in the last 6 months	0,010
Alcohol abuse	The need to make decisions about others (close relatives, friends who rely on your decision)	0,048
	Job loss in the last 6 months	0,008
Low intensity of physical activity as a risk factor		
Assessment of physical activity	The total amount of traumatic exposure	0,009
Decreased physical activity	Currently working	0,029

The nutrition deterioration in this group of examinees was influenced by the quality of life, which was characterized by a feeling of safety on the street (p=0.0001) and at home (p=0.021), by a change of profession (p=0.043), as well as the patients' sense of benefit from their actions (p=0.022). An increase in the frequency of smoking among the examinees who remained in their hometown was associated with work, namely with worsening conditions or payment (p=0.010). It was also observed that the prevalence of tobacco smoking was associated with the traumatic exposure experience, namely the interviewees had witnessed airstrikes (p=0.032) or had acquaintances killed as a result of military actions (p=0.016), as well as with concern of friends/acquaintances about the interviewees (p=0.016). It was found that the need to make decisions about others affected the prevalence of alcohol abuse (p=0.048). However, it is impossible to determine whether the responsibility for other people contributed to the nervous tension that the interviewees tried to get rid of by consuming alcohol, or, on the contrary, it contributed to the mobilization of human resources, which made it more resistant to stress. In addition, the prevalence of this bad habit was influenced by job loss (p=0.008). Interestingly, the presence of a job (but not its loss) was associated with a change in the intensity of physical activity during the previous 6 months (p=0.029), while the overall assessment of the level of physical activity at the time of the survey was associated with the number of cases of traumatic exposure (p=0.009).

The results of the assessment of the impact of stress factors on the behavioural risk factors in group 2 are shown in **table. 4**. Sleep disturbances among internally displaced participants were affected by wider range of factors in comparison with participants who remained in their hometown. The most common causes of various sleep disturbances were social factors, namely integration into society (p=0.016 for the deterioration of sleep quality and p=0.014 for the sleep pattern), the feeling of insignificance (p=0.008 for the decrease in the amount of sleep and p=0.002 for the sleep regimen) or, conversely, feeling of the usefulness of own actions (p=0.028 for sleep regimen), or caring from relatives/family (p=0.021 for sleep regimen). Some criteria of the quality of life, namely the feeling of safety on the street (p=0.029 for reduced amount of sleep and p=0.0001 for worsening sleep quality) and at home (p=0.003 for worsening sleep quality), residential comfort (p=0.045 for reduced amount of sleep and p=0.006 for worsening sleep quality), financial resources (p=0.003 for sleep mode) also appeared among the influencing factors. Experience of traumatic exposure, namely the experience of airstrikes (p=0.009 for sleep quality deterioration) and artillery shelling (p=0.034 for sleep quality deterioration) or being a witness of dead civilians (p=0.039 for sleep mode), as well as changes in the field of work: deterioration conditions or payment (p=0.003 for reduced sleep), job loss (p=0.029 for wake), and access to health care (p=0.007 for wake) and qualified consultation (p=0.006 for sleep) were other factors that affected sleep disturbances in this group of patients. Changes in nutrition were associated not with any specific type of factors, but with a number of various factors that characterized the quality of life, namely, housing comfort (p=0.0001) and the opportunity to do favorite activities (p=0.031), the number of traumatic cases (p=0.002), opportunity for self-expression (p=0.031). However, for the first time appeared among participants the association between weight loss on the one hand and integration into society (p=0.044), the fact of having deceased among acquaintances (p=0.039) on the other hand. Similar factors influenced the increase in the frequency of bad habits among this category of patients. In particular, the feeling of one's insignificance (p=0.033) or having deceased people among acquaintances (p=0.048) influenced the frequency of smoking, and the feeling of usefulness of one's actions influenced the frequency of alcohol abuse (p=0.033). In addition, job loss had an effect on increased smoking frequency (p=0.035), while availability of medical care had an effect on the prevalence of alcohol abuse (p=0.006). Changes in physical activity levels also

depended on changes associated with work, namely, a change in profession (p=0.018) and a deterioration in working conditions or payment (p=0.011). And the opportunity to engage in hobbies (p=0.045) influenced both the overall assessment of physical activity and changes in its intensity (p=0.008).

Table 4

Stress factors influencing the appearance of behavioural risk factors in the studied internally displaced participants

Behavioural risk factors	Identified influencing factors	p-value
1	2	3
Low quality and lack of sleep as a risk factor		
Decreased amount of sleep	Residential comfort	0,045
	Feeling of insignificance, inability to do something, power-lessness	0,008
	Reduced wages/deteriorated working conditions in the last 6 months	0,003
	Safety on the street	0,029
The quality of sleep worsened	Residential comfort	0,006
	Integration into a group, associations, social circles	0,016
	Being a witness to airstrikes	0,009
	Being a witness to the artillery shelling	0,034
	Safety at home	0,003
	Safety on the street	0,0001
Awakening	Job loss in the last 6 months	0,029
	Access to points of medical assistance and places of preventive measures	0,007
Sleep regimen	Financial resources	0,003
	Feeling that you are doing useful things	0,028
	Feeling of insignificance, inability to do something, power-lessness	0,002
	Integration into a group, associations, social circles	0,014
	Relatives/family care for you	0,021
	Witnessing civilians killed (not through mass media, that is, not via photos or videos)	0,039
	Possibility of obtaining a qualified consultation from health care specialists	0,006
Improper diet as a risk factor		
Nutritional deterioration	Residential comfort	0,0001
	An opportunity to share your thoughts, ideas	0,031
	Ability to do favorite things/hobbies in free time	0,031
	The total amount of traumatic exposure	0,002
Weight loss	Integration into a group, associations, social circles	0,044
	Among your acquaintances/relatives/friends are those who died as a result of military operations (including those who were in service)	0,039

Table 4 (Continued)

1	2	3
Harmful habits as a risk factor		
Smoking	Integration into a group, associations, social circles	0,030
	Relatives/family care for you	0,028
	Currently working	0,025
Increased frequency of smoking	Feeling of insignificance, inability to do something, power-lessness	0,033
	Job loss in the last 6 months	0,035
	Among your acquaintances/relatives/friends are those who died as a result of military operations (including those who were in service)	0,048
Alcohol abuse	Integration into a group, associations, social circles	0,035
	Access to points of medical assistance and places of preventive measures	0,006
Increased alcohol consumption	Feeling that you are doing useful things	0,033
Low intensity of physical activity as a risk factor		
Assessment of physical activity	Ability to do favorite things/hobbies in free time	0,045
Decreased physical activity	Ability to do favorite things/hobbies in free time	0,008
	Profession changed in the last 6 months	0,018
	Reduced wages/deteriorated working conditions in the last 6 months	0,011

Data on the impact of stress factors on behavioural risk factors for group 3 are shown in **table 5**. It is interesting that although poor socialization according to our results was the most common in this group, compared to others, it did not affect any of the studied behavioural factors. Based on the data available in the mass media about the organization of regular open meetings of Ukrainians abroad, it can be assumed that in the absence of integration into local society, participants actively interacted with other residents of Ukraine who had gone abroad. However, this assumption needs further verification. In addition, the limited opportunity for self-expression, which was also quite common among the respondents of this group, according to our results, only affected awakening ($p=0.0001$). Other factors affecting sleep included the presence of deceased people among acquaintances ($p=0.046$). Noticeable was the common effect of work-related changes on alcohol abuse, namely job loss ($p=0.020$ and $p=0.010$), change of occupation ($p=0.005$ and $p=0.001$) and deterioration in working conditions and payment ($p=0.015$ and $p=0.007$) were associated with prevalence and frequency of alcohol abuse, respectively. An increase in the frequency of smoking, on the contrary, was associated only with a traumatic experience, namely, the interviewees saw dead civilians ($p=0.046$). This traumatic experience was also associated with poorer nutrition ($p=0.046$). It is noteworthy that the prevalence of experience of airstrikes or artillery shelling among the participants from different groups was not significantly different, and these stressors did not affect any of the behavioural factors among participants in group 3. The feeling of usefulness of one's actions among respondents was associated with nutrition ($p=0.045$), and the feeling of insignificance – with the general assessment of physical activity ($p=0.002$) and changes in its intensity ($p=0.005$). It

can be assumed that the feeling of insignificance is one of the manifestations of the depressive syndrome, which in turn is characterized by hypoboulia, one of the symptoms of which is a decrease in physical activity.

Table 5

Stress factors that influenced the appearance of behavioural risk factors in the studied participants living abroad

Behavioural risk factors	Identified influencing factors	p-value
Low quality and lack of sleep as a risk factor		
The quality of sleep worsened	Among your acquaintances/relatives/friends are those who died as a result of military operations (including those who were in service)	0,046
Awakening	An opportunity to share your thoughts, ideas	0,0001
	Changing places of residence in Ukraine	0,004
Improper diet as a risk factor		
Nutritional deterioration	Witnessing civilians killed (not through mass media, that is, not via photos or videos)	0,030
Weight gain	Relatives/family care for you	0,022
Weight loss	Feeling that you are doing useful things	0,045
Harmful habits as a risk factor		
Increased frequency of smoking	Witnessing civilians killed (not through mass media, that is, not via photos or videos)	0,046
Alcohol abuse	Job loss in the last 6 months	0,020
	Profession changed in the last 6 months	0,005
	Reduced wages/deteriorated working conditions in the last 6 months	0,015
Increased alcohol consumption	Job loss in the last 6 months	0,010
	Profession changed in the last 6 months	0,001
	Reduced wages/deteriorated working conditions in the last 6 months	0,007
Low intensity of physical activity as a risk factor		
Assessment of physical activity	Feeling of insignificance, inability to do something, powerlessness	0,002
Decreased physical activity	Feeling of insignificance, inability to do something, powerlessness	0,005

4. Conclusions

1. Deterioration of the quality and regimen of sleep and nutrition is often observed among people who were forced to change their place of residence during the armed conflict. Therefore, in this category of the population, these behavioural factors must be included in the screening for the increased risk of developing cardiovascular diseases.

2. Loss or change of job and low socialization in new conditions are common stress factors among people who change their place of residence. Therefore, psychological support of

this population category is especially necessary to prevent the deterioration of a person's mental health.

3. In people who remain in their hometown, sleep disturbances can often be caused by traumatic influences, while changes in work and its conditions mainly affect the frequency of smoking, alcohol abuse, and poor nutrition. Therefore, people who have had a traumatic experience or experienced negative changes at work need special attention in order to detect health disorders as soon as possible.

4. In internally displaced people, socialization affects many different behavioural factors: sleep, nutrition, bad habits. Socialization in a new society affects health and is likely a factor of high cardiovascular risk. Traumatic experiences, quality of life, and changes in work are also important influencing factors in this category of people. Presumably, for internally displaced people, psychological support and assistance with their integration into society can be effective in order to correct behavioural risk factors.

5. Among people living abroad, only the job loss, change of profession, or the deterioration of working conditions or payment have a significant effect on the prevalence and frequency of alcohol abuse, while the increase in the frequency of smoking and eating disorders are associated with the fact of seeing dead bodies as a result of military actions. Only the presence of deceased people among acquaintances of the interviewees is associated with sleep deterioration. The level and intensity of physical activity completely depend on the respondent's sense of insignificance. Therefore, in people living abroad, psychological support to overcome the consequences of traumatic experiences and to increase self-esteem may have a positive effect on behavioural cardiovascular risk factors.

6. Therefore, in order to reduce the severity or eliminate behavioural risk factors, special attention should be paid to overcoming the consequences of traumatic experiences among people who remain in their hometown, to integrate internally displaced people into society, and to immediately provide psychological support to people living abroad.

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THE IMPACT OF BALLROOM DANCING ON THE LEVEL OF PHYSICAL HEALTH OF THE INDIVIDUAL

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Summary
The article is devoted to examining the impact of ballroom dancing on the level of physical health of the individual. As health-promoting activities increasingly gain attention in contemporary society, this study aims to provide empirical data on the benefits of dance as an alternative to traditional forms of exercise. Specifically, the primary objective of the research is to measure and analyze key morpho-functional indicators of health, such as cardiovascular fitness, muscular strength, and general vitality, to assess whether ballroom dancing can offer a holistic approach to improving individual health. The methodology employed for this study was a longitudinal research design. The study was conducted among students aged 17–20 during the academic years 2021–2022 in an educational institution in Lviv. Fourteen students participated, consisting of an even gender distribution – 7 females and 7 males. Various health indicators were measured at the beginning of the study and after an 8-month period of regular ballroom choreography training. Quantitative methods were used to collect data, including standard tests like the *Ruffier index* and the Robinson index, which were then statistically analyzed to ascertain any significant changes. The findings indicate a significant improvement in several health metrics. For instance, there was a notable increase in cardiovascular health as indicated by the *Ruffier* index. Though there were no significant changes in the Robinson index, there was a tendency towards positive dynamics, suggesting that the impact of ballroom dancing may require more nuanced investigation under different states of physical stress. Overall, the results demonstrate that ballroom dancing contributes positively to several aspects of physical health. The practical implications of this research are far-reaching. Given the generally negative attitudes towards traditional physical education classes, ballroom dancing could serve as an effective and more engaging alternative. As novice dancers can achieve a decent level of preparation without much difficulty and as the dance movements involve multiple muscle groups and cognitive functions, this form of exercise is both enjoyable and beneficial.
Key words: ballroom dancing, physical health, morpho-functional indicators, cardiovascular fitness, muscular strength.

1. Introduction

In an era where technological advancements have made life easier yet paradoxically more complicated, the general state of public health has seen a concerning decline. Whether it's due to poor nutritional choices, increased stress levels, or sedentary work environments, people across different age groups are grappling with a range of health issues. It is now more critical than ever to find ways to maintain one's health, and that too in a manner that can be sustained over a lifetime. As we navigate this complex landscape, the importance of engaging in regular, moderate physical exercise cannot be overstated. While there are numerous avenues

for achieving this, from conventional gym workouts to outdoor sports, one often overlooked but highly effective and accessible option is ballroom dancing.

The subject of ballroom dancing and its potential health benefits has been rigorously explored in scientific research. Various studies have conclusively indicated that this form of social, physical activity offers a plethora of health advantages, both physiological and psychological. As an exercise, ballroom dancing is not merely about the movements of the feet and the rhythm of the music; it's a comprehensive physical and emotional experience. When you engage in ballroom dancing, you're not only burning calories and enhancing muscle tone but also improving your balance, coordination, and flexibility.

Furthermore, unlike other physical activities that focus only on certain muscle groups, ballroom dancing engages the whole body. The arms set the frame, the legs execute the steps, and the core muscles help in maintaining posture and balance. The combination of quick and slow movements is also effective in improving the cardiovascular system, thereby ensuring better heart health.

In addition to the physical attributes, the social aspects of ballroom dancing shouldn't be overlooked. It allows people to interact in a joyous and stress-free environment. The value of human connection, of looking into someone's eyes while dancing, contributes to mental well-being, reducing feelings of loneliness or depression.

The interest in the relationship between ballroom dancing and health is not just theoretical; it has been put to the test in real-world settings. A recent social experiment conducted among young beginners in ballroom dancing demonstrated encouraging results. The participants not only showed significant improvements in physical fitness but also experienced elevated mood levels and reduced stress.

Literature review. The existing literature on the influence of dance on physical health and well-being is rich but primarily focused on specialized populations. For example, Rehfeld et al. *(2018)* presented a seminal work on how dance training can be more effective than repetitive physical exercise in inducing brain plasticity among the elderly. This was supported by other studies emphasizing the cognitive benefits and balance abilities acquired through dance *(Rehfeld et al., 2017; Sohn, Park, & Kim, 2018)*. Koutedakis and Jamurtas *(2004)* analyzed dancers as performing athletes, drawing parallels between the physical demands of both activities. Moreover, Vaccaro et al. (2019) explored how a six-month dance regimen could contribute to successful aging, indicating the long-term benefits of dance on health.

Schroeder et al. *(2017)* took a unique angle by investigating the potential of dance as an intergenerational program to increase access to physical activity. While these studies provide valuable insights, they are often focused on the elderly or specialized groups, leaving a gap in the literature concerning the younger demographic. Specifically, research on the morpho-functional impact of dance on somatic health indicators among adolescents or young adults is scant. This paucity makes our study unique and aims to fill this research gap by assessing the influence of ballroom choreography on physical (somatic) health markers. Therefore, this study contributes a much-needed perspective to the broader understanding of the benefits of dance on health across different age groups.

The aim of this research is to assess the impact of ballroom dancing on the level of physical health of the individual.

Methods and Methodology. In the 2021–2022 academic year, a comprehensive study was conducted at an educational institution in Lviv involving 14 students, equally split between males and females, aged 17–20. The research aimed to assess the impact of a complex ballroom choreography routine on the students' physical (somatic) health. We adopted a mixed-methods

approach that combined quantitative and qualitative data collection. Morpho-functional indicators such as heart rate, strength metrics, and Rufie and Robinson indices were measured before and after an 8-month ballroom dance training program. The data were collected using standardized medical and sports equipment to ensure reliability and accuracy.

To supplement the quantitative data, qualitative observations were made about the participants' level of engagement, motivation, and any noticeable changes in posture or physical well-being. These were based on self-reports, instructor feedback, and video analysis. This multi-pronged methodology allowed us not only to capture statistical changes in somatic health markers but also to consider subtler aspects such as emotional well-being and attitude toward physical education, providing a more holistic view of the effects of ballroom choreography on student health.

2. Results

In modern times, "ballroom dancing," "competitive ballroom dancing," and "dance sport" are terms that are frequently used interchangeably. Dance sport is a unique amalgamation of two diverse styles: International Standard and International Latin. These styles are performed in competitive settings that categorize dancers based on their skill levels and age groups *(Rehfeld et al., 2018)*.

In the world of dance sport, a selection process is in place to choose the most emotionally and rhythmically intriguing dances for competitions. These dances form the core of various programs, such as the European and Latin American categories, as well as the all-encompassing "Ten Dance" program. Championships for amateurs typically fall under the purview of the International DanceSport Federation (IDSF), while professional events are often managed by English dance organizations *(Schroeder et al., 2017)*.

One of the most compelling aspects of dance sport, particularly for young adults, is its ability to offer both mental and physical exercise. For those who engage seriously in this form of art, it provides a level of physical exertion that can be custom-tailored to individual needs. More seasoned dancers can achieve effective workouts without the risk of excessive fatigue. Additionally, the mental relaxation it offers is invaluable, especially in a world where overall well-being is under constant threat due to various life pressures *(Vaccaro et al., 2019)*.

Choreography in the context of sports has also gained attention, with methodologies often rooted in classical and folk dance. Experts suggest that choreography not only serves as a tool for aesthetic education but also has a multifaceted impact on an individual. Physical development is an often-underemphasized benefit, which is especially crucial given the deteriorating state of health among young populations *(Koutedakis et al., 2004)*.

Training in dance sport entails refining fine motor skills, which in turn activates a range of physiological functions. These include improved blood circulation, enhanced respiratory activity, and optimized neuromuscular functions. This understanding of one's own body contributes to boosted self-confidence, and helps in warding off psychological complexities. While numerous experts have acknowledged these advantages, there remains a gap in quantitative research focusing on the specific health impacts of dance sport *(Rehfeld et al., 2017)*.

In order to conduct an empirical study, we set up an experiment to investigate the impact of dancing over time on the physical health of people, particularly young people. For assessing the level of physical (somatic) health, the G. L. Apanasenko methodology was applied. It quantitatively evaluated participants based on their morpho-functional indicators. According to this method, various indices were calculated: Vitality Index (considering lung capacity and

body mass), Strength Index (considering heart rate and systolic blood pressure), *Ruffier Index* (considering pulse rate increase and recovery after 30 squats in 45 seconds), and a Body Mass to Height ratio.

Statistical evaluation was performed using non-parametric criteria (sign tests and Wilcoxon for related populations). A difference was considered statistically significant at $p<0.05$.

The training regimen employed the developed ballroom choreography routine. The sessions comprised of a warm-up, individual element practices, and pair composition elements. The weekly schedule was as follows: Monday – classical choreography for 1 hour, ballroom dances for 2 hours; Tuesday – individual dance lessons for 1–2 hours; Wednesday – general physical preparation for 1.5 hours; Thursday – stretching for 1 hour; Friday – ballroom dances for 2 hours.

An essential part of this research was to understand that optimal well-being doesn't necessarily come from having peak values in individual physical and functional parameters. Instead, it's about a balanced combination of these indicators. This balance is crucial for students, who are constantly under the strain of academic responsibilities, ensuring that their bodies can effectively manage energy reserves and maintain resilience.

In the initial stage before starting the ballroom dancing regimen, several health indicators were measured. The Vitality Index was found to range between 52 and 78 ml/kg, averaging around 63.3 ml/kg across all participants. Similarly, the Power Index demonstrated values between 31 and 45%, with an average of 45%. The Robinson Index had a range of 66 to 85 arbitrary units, and the average came to 73.7. The Ruffier Index varied between 6 and 14 arbitrary units, averaging at about 7.9.

When these morpho-functional indicators were summed up, the level of physical health was often found to be below average, rarely exceeding 10 points. This is noteworthy because the 'safe' limit, as per existing research, is set at 14 points. The data shows a concerning trend, suggesting the potential for somatic illnesses or at least the risk of such conditions developing down the line.

This finding was significant as it justified our choice of using ballroom dancing as a form of preventative physical rehabilitation. The activity involved complex choreographic exercises, which were executed both individually and in pairs. This approach was aimed at harnessing multiple facets of human motor skills to increase the body's adaptive energy reserves.

In essence, the study serves as a critical reminder that even among the young population, there is a considerable need for attention to physical health. It also suggests that incorporating activities like ballroom dancing could be an effective way to tackle this issue. The discipline not only promotes physical well-being but also offers a creative outlet, which could be especially beneficial for students who face constant academic and social pressures.

After 8 months of ballroom choreography lessons, a follow-up examination yielded the results outlined in Table 1.

As evident from the table, a significant positive dynamic was observed in the total scores of 12 subjects. Only one pair showed no substantial changes, which could be attributed to their lack of full effort in training and frequent illnesses.

Analyzing the results of the individual morpho-functional indicators, we found a significant increase in the functional reserve of the heart according to the Ruffier index, which is one of the most valuable criteria for energy potential along with the "double product" (Robinson index). The latter characterizes the systolic work of the heart. For this particular index, we didn't observe a statistically significant difference, although there was a trend towards positive dynamics. We believe that this may be due to the fact that the examination was carried out at

rest, rather than at the peak of physical exertion. Conversely, during the Ruffier test, where such exertion is anticipated, the difference was statistically significant. This can be attributed to the fact that the surveyed adolescents had been exposed to substantial training loads over an 8-month period, which was reflected in the test results.

Table 1

Dynamics of morpho-functional indicators of physical (somatic) health influenced by ballroom choreography

Indicators	Positive Changes	Negative Changes	No Changes	Significance (p)
Vitality Index	9	0	5	< 0.01
Power Index	11	0	3	< 0.01
Robinson Index	10	2	2	> 0.05
Ruffier Index	10	1	3	< 0.01
Body Length Ratio	9	4	1	> 0.05
Total Score	12	0	2	< 0.01

Delving deeper into the above observation, it's worth mentioning that the Ruffier test involves a rigorous and challenging set of physical exercises that allows a comprehensive assessment of the heart's functional reserve. This indicates that regular involvement in ballroom dancing has a tangible impact on improving the cardiovascular system, a finding consistent with previous literature on exercise physiology.

Discussing the results, it is also essential to highlight that students often have a negative attitude towards physical education classes nowadays. In this context, ballroom dancing could serve as an appealing alternative for leisure time. In ballroom dance, newcomers attain an acceptable level of preparation without much difficulty. Moreover, the cultivated ability to execute simple steps proficiently, maintain proper posture, and a sense of balance fully compensates for the time spent on learning ballroom dancing *(Sohn et al., 2018)*.

The aforementioned points reiterate the dual benefit of ballroom dancing. Not only does it offer a means for enhancing physical fitness metrics, but it also provides an outlet for adolescents who may not be drawn to conventional physical education. It enables them to explore a more artistic form of movement, which is crucial given the alarming rates of physical inactivity and the consequent health implications among adolescents aged 17–20. Therefore, the data from our study reinforces the idea that ballroom dancing could be a valuable addition to physical education programs, offering a multifaceted approach to health and well-being.

Discussion. The current discussion on the impact of ballroom dancing on physical and cognitive functions is both nuanced and dynamic. Lakes et al. *(2016)* posited that both novice and experienced dancers showed improvements in perceived physical fitness (PF) and cognitive functioning, although their assessment was primarily based on surveys *(Lakes et al., 2016)*. On the other hand, Kattenstroth et al. (2011) demonstrated that expert dancers outperformed sedentary subjects in expertise-related domains such as balance, sensorimotor performance, and reaction times *(Kattenstroth et al., 2011)*. However, in a subsequent study, the same authors argued that six months of dancing improved postural, sensorimotor, and cognitive performances in elderly individuals who had not danced regularly for five years–yet, they found no changes in cardio-respiratory functions *(Kattenstroth et al., 2013)*.

Further extending this discussion, other studies have emphasized the neurological benefits of dance. Teixeira-Machado, Arida, and Mari *(2019)* and Müller et al. *(2017)* both found

that dancing could induce brain plasticity at both structural and functional levels, particularly in inexperienced dancers *(Teixeira-Machado et al., 2019; Müller et al., 2017)*. However, the volume of dance practice over the years might differentially affect PF and cognitive functions, potentially leading subjects to reach a performance plateau at different times *(Koutedakis & Jamurtas, 2004)*. Thus, the present study aims to fill this gap by investigating the effects of six months of ballroom dance on PF and reaction time in experienced middle-aged dancers, thereby contributing to this complex and evolving conversation.

3. Conclusions

The study's findings underscore the positive impact of ballroom dancing on various physical health indicators, particularly the cardiovascular system. A significant improvement was observed in the functional reserve of the heart according to the Ruffier index, providing strong evidence of the cardiovascular benefits. Although some measures like the Robinson index did not show statistically significant changes, the trend was generally positive, suggesting the potential benefits of ballroom dancing on heart function.

Additionally, the study also brings to light the cultural and social aspects of introducing ballroom dancing as a form of physical activity. Given the general disinterest in traditional physical education among adolescents, ballroom dancing serves as an appealing alternative. Not only does it offer an easier learning curve for beginners but it also provides an artistic and enjoyable way to engage in physical activity.

In conclusion, ballroom dancing emerges as a viable and effective means to improve cardiovascular health while also offering a socially engaging and culturally enriching alternative to traditional physical education. Given the positive outcomes observed, it would be beneficial to consider incorporating ballroom dancing into educational or fitness programs as a multifaceted approach to improve health and well-being.

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TECHNOLOGY, CREATIVITY, IMPLEMENTATION

EFFICIENCY EVALUATION OF INTERSECTIONS AND INTERCHANGES OF THE URBAN STREET NETWORK IN UKRAINE USING TRANSPORT MODELING

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Summary
The article examines the current problems of transport modeling using to evaluate the efficiency of intersections and interchanges in a saturated by traffic flows urban street network in conditions of limited resources. It was found out that current urban planning documentation in Ukraine is oriented towards working with unsaturated by traffic flows urban street network, and the main efficiency indicator now is the capacity. It has been proven that the efficiency of the urban street network depends on the efficiency of its components – intersections, interchanges, and links. Due to the permanent redistribution of the traffic flows, intersections and interchanges have a greater impact on the urban street network efficiency. In turn, the efficiency of the intersections and interchanges is determined by their project solutions. It was concluded that it is possible to evaluate the efficiency of the intersections and interchanges on the urban street network using the total delay time for cars. Accordingly, the criterion for evaluating the efficiency of the intersections and interchanges is the reduction of this indicator. The computer experiment showed that the reduction of delay time for cars at intersections and interchanges in saturated by traffic flows urban street networks does not necessarily mean a decrease in the total delay time for cars. At the same time, a decrease in the total delay time for cars may stimulate demand for additional car trips, which will lead to an increase in the total delay time for cars due to an increase in the number of cars in the urban street network. It is justified that the choice of efficiency criteria should be approached responsibly and carefully especially in conditions of limited resources.

Key words: urban street network, intersection, interchange, project solution, efficiency criteria, efficiency evaluation, delay time for cars, transport modeling.

1. Introduction

In the cities of Ukraine, there are a number of transport problems caused by urban planning aspects, in particular, the imbalance of settlement and jobs; and transport policy, for example, softness of parking policy, insufficient attention to the development of urban passenger transport (PT), etc. This is reflected in the constant growth of demand for car trips.

Most of the transport infrastructure or so-called transport supply in Ukraine, was built in the 60–80s of the last century and is designed for lower loads in terms of the number of vehicles that use it daily.

Domestic and foreign scientists dealt with the problems of efficiency evaluation of intersections and interchanges on the urban street network using transport modeling. For Ukraine in particular this are Mykola Domin, Mykola Osetrin, Volodymyr Tarasiuk, Valerii Huk, Petro Horbachov, Roman Zubachyk, Olena Chernyshova, Ihor Mohyla, Yevhen Liubyi, Mykhailo Krystopchuk and others. However, due to the circumstances in which Ukraine currently finds itself, related to the attack on it by the Russian Federation, this problem remains is gaining momentum, so this research is relevant and scientifically expedient.

The purpose of the article is to suggest a basic approach to efficiency evaluation of intersections and interchanges on the urban street network in Ukraine in conditions of limited resources and uncertainty using transport modeling.

2. Transport problems of Ukrainian cities

In the cities of Ukraine, due to excessive loads from vehicles, violations of infrastructure maintenance regulations, including different transport facilities, as well as exceeding the regulatory time of their operation, transport infrastructure facilities fail, or their capacity is artificially limited for preventing this (Fig. 1).

Fig. 1. Restriction of traffic on the two edge lanes of the Paton Bridge in Kyiv due to its poor technical condition
Source: tsn.ua

Now the trend is only accelerating. For example, according to the report of the government commission on the assessment of the condition of bridges, almost 1/4 of all bridge structures in Ukraine are in a critical condition – they are inoperable or only partially operable *(Mininfrastruktury, 2023)*. For example, out of 5 main bridges for car traffic over the Dnipro River in Kyiv, 2 bridges (the Metro Bridge and the Paton Bridge) are in an inoperable condition. However, despite this, hundreds of thousands of cars travel through it every day. One of

the structural units conditions of the transport facility in the capital of Ukraine can be assessed in Fig. 2.

Fig. 2. Layering of the upper belt of the main beam of one of the transport facilities in Kyiv due to corrosion

Source: State Agency for Reconstruction and Development of Infrastructure of Ukraine

The increase in transport demand for car trips against the background of the preservation or even reduction of transport supply due to insufficient development, restriction or even destruction of transport facilities causes the traffic saturation of urban street network in Ukrainian cities. Saturation means a certain value of traffic flow density and corresponds to level of service (*Highway Capacity Manual 2010: Transportation Research Board of the National Academy, 2010*) from D to F, when the traffic flow becomes unstable, fills all available space, and the speed varies spontaneously and mostly unpredictably.

Based on the definition of level of service D, E, F, it follows that the saturation of urban street network with traffic flows carries the risk of increasing the delay time for cars, which is one of the main consequences of Ukraine's urban planning problems. This fact is confirmed by the city of Kyiv, which in the TomTom Traffic Index ranking for 2021 ranked 3rd in the number of traffic congestion among 404 cities in the world with the delay for cars of 56% *(TomTom Traffic Index, 2021)*. Delay is expressed in % means the number of the average daily ratio of delay time for cars to the total travel time.

Therefore, to change the negative trend and ensure the sustainability of the urban street network of the cities in Ukraine, it is necessary to use modern approaches to assessing the effectiveness of the urban street network and its components. That is to determine the ratio between

the achieved result and the used resources (*ISO 9000:2015-11, 2015*) at all stages of planning of its development.

3. Intersections and interchanges as a main area in need of improvements

Intersections and interchanges together with links are the components of the urban street network system. Traffic flow is redistributed at intersections and interchanges, and it's delivered to the next intersection or interchange by the links. Since, due to the redistribution of traffic flow at intersections and interchanges, their capacity mostly lower than at links, the consequences of transport problems are usually concentrated at intersections and interchanges in saturated by traffic flows urban street network: delay time for cars increased, and as a result, the deterioration of road safety, worsening of ecology, etc. Therefore, the efficiency of the urban street network, first, depends on the efficiency of the intersections and interchanges.

Typical modern situation for the city of Kyiv: the saturated traffic flow at one of the interchanges on the urban street network can be visually assessed in Fig. 3.

**Fig. 3. An example of an interchange saturated with traffic flows
on the urban street network: the interchange of Beresteyskyi Ave.,
st. Hetman and st. Oleksandr Dovzhenko in Kyiv**
Source: tsn.ua

4. Standard Ukrainian approach of a transport problems solving

According to the Law of Ukraine "On the Regulation of Urban Planning" (*zakon.rada. gov.ua/laws/show/3038-17, 2011*), a multi-level approach to planning, including planning for the development of transport infrastructure, was established in Ukraine.

For the entire urban street network, the general principles of its development are established at the level of development and approval of the Community Development Strategy (*zakon.rada.gov.ua/laws/show/156-19, 2015*), which are then reflected in the Master Plan of the settlement and its supplementary document on transport – the Integrated Transport Scheme (*DBN B.1.1-15:2012, 2012*). At this level, in relation to the entire urban street network, intersections and interchanges on it, the categories of highways should be chosen, the types of intersections and interchanges, traffic organization schemes should be established, and the territory for them should be reserved.

The main directions of the Master Plan and the Integrated Transport Scheme was to increase the capacity of urban street network in the city of Kyiv, planning the construction of additional transport facilities. Fig. 4 shows dozens of new planned transport facilities at intersections and interchanges on the urban street network in Kyiv.
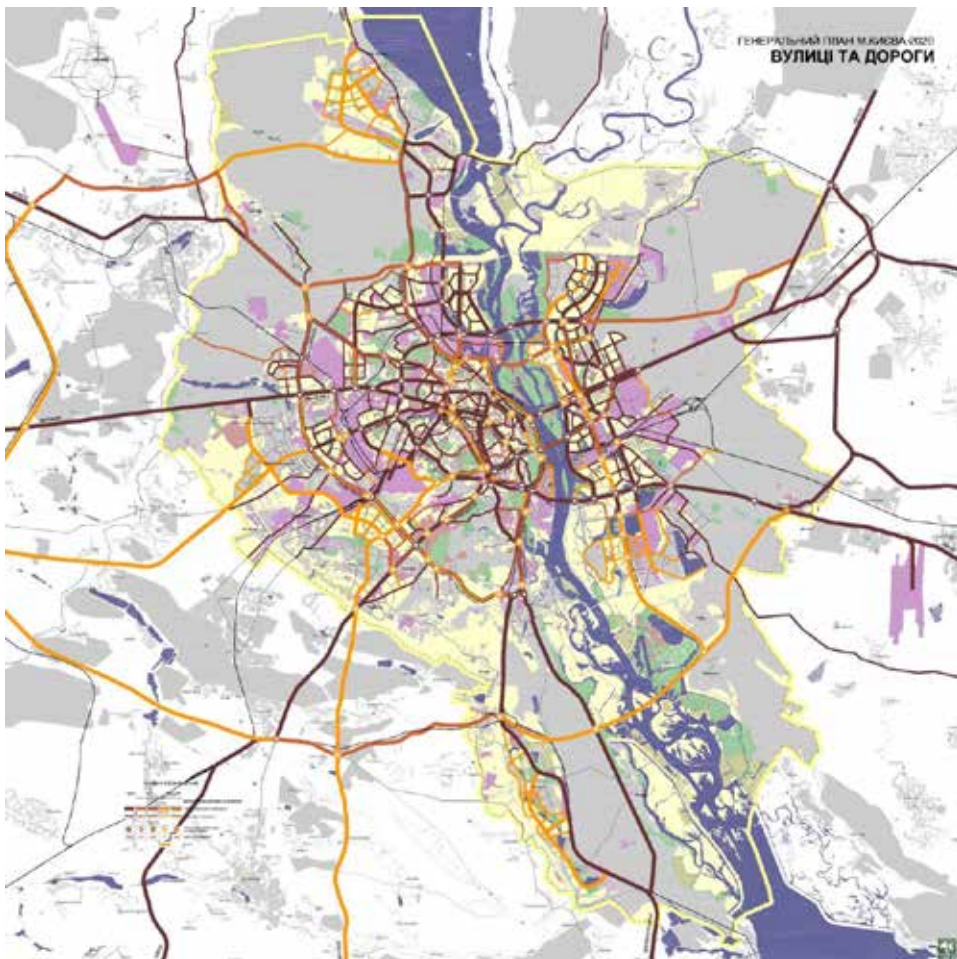
Fig. 4. Master Plan of the city of Kyiv until 2020 with the development of urban street network
Source: http://kyiv-landuse.com/content/genplan-kieva-do-2020-r-diyuchiy

Obviously, this was a response to growing motorization and its consequences due to increasing delay time for cars, deterioration of road safety and ecology, first, at intersections and interchanges on the urban street network. According to the developers of these documents, increasing the capacity of the urban street network by arranging dozens of additional interchanges with flyovers should increase the efficiency of its work.

It is likely that it would have happened, but there were 2 nuances:

1) the increased capacity of urban street network would eventually cause additional trips by cars, once again demonstrating the induced demand *(Horem, 2011)*;

2) in the cities of Ukraine, including its capital, there were and are extremely limited resources for the entire transport infrastructure, which are not enough even to maintain and keep the existing facilities on the urban street network in proper condition.

As a result, instead of dozens of new transport facilities on the urban street network, only a few of them were built in Kyiv over the past years, which obviously did not solve the main consequence of the capital's transport problems – increasing delay time for cars.

The next level of urban planning in Ukraine after the strategic, which significantly affects project solutions of intersections and interchanges, is the level at which issues of the direct operation of intersections and interchanges on the urban street network are considered. It begins with the preparation of technical terms of reference for conducting open tenders on the national tender procurement system ProZorro for project solutions on new construction, reconstruction, or repair of intersections and interchanges on the urban street network. At this level, it is necessary to define the tasks for the development of project solutions for intersections and interchanges on the urban street network.

Project solutions for intersections and interchanges on the urban street network is a set of proposals for organizing the redistribution of traffic flow at the intersection or interchange. The requirements for them are established by current regulatory documents and are provided by engineering assessment based on calculations and include the determination of spatial parameters of their geometry, elements of engineering arrangement, etc. However, although the Ukrainian State Building Regulations (abbreviated as DBN) have established a list of requirements for intersections and interchanges on the urban street network, which could be used to obtain efficiency criteria for comparing different project solutions with each other, these requirements do not always have a numerical value or recommendations for its establishment. This somewhat complicates the process of proving the compliance of project solution of intersection or interchange with exact requirement of the DBN.

It can be said that the step of preparing the terms of reference for design make a link between the strategic and tactical level of urban planning. This is followed by the standard for Ukraine stages of transport facilities design: feasibility study, Project stage, Working documentation stage. For simpler intersections on the urban street network, which have a lower so-called class of consequences and do not require a three-stage design process, a change in the project solutions to improve the efficiency could be planned at the stage of developing the Project of the traffic organization scheme.

The conducted analysis of the efficiency evaluation of intersections and interchanges on the urban street network showed that the standard urban planning sequence for Ukraine can work effectively regarding the selection of project solutions unsaturated by traffic flows. So, it means with the level of service (LOS) up to C.

To be able to adopt effective project solutions, according to the Ukrainian DBN, means of transport modeling must be used. In DBN (*DBN B.2.2-12:2019, 2019*), (*DBN V.2.3-5:2018, 2018*) the requirements for the use of this tool are regulated, but the principles, methods,

requirements for initial data, structures, and quality checks of transport models for efficiency evaluating of intersections and interchanges on the urban street network are not given.

All the above-mentioned problems need to be solved, since the adoption of ineffective project solutions regarding intersections and interchanges on the urban street network not only increases the consequences of transport problems in the cities of Ukraine, but also poses a threat to the safety of people in the conditions of armed aggression from the Russian Federation.

It is important to establish an efficiency indicator for intersections and interchanges on the urban street network to compare their project solutions and determine its impact on it.

5. Determination of the efficiency indicator

Intersections and interchanges on the urban street network, depending on the project solutions, have certain initial indicators. Project solutions determine the base speed V_0 for a single vehicle, the base speed V_0 and the distance determined by the route R of the vehicle through the intersection or and interchange, determine the base time t_0.

For one vehicle trip on the scale of the entire urban street network, the base intersection or interchange time t_0 is only a part of the total base time T_0 for the vehicle trip between the starting point of the trip and the point of its termination in a conditionally empty network. Base time t_0 exists separately for intersections and interchanges and for links.

Project solutions of intersections and interchanges are characterized by a certain ability to provide capacity for individual maneuvers M. The problem is that in urban street network saturated with traffic flows, the value of the intersection or interchange capacity will depend on both the project solution and the volume of traffic, the volume of maneuvers and the composition of the traffic flow. That is why, in the urban street network saturated with traffic flows, the intersections and interchanges capacity cannot be considered the main criterion for the efficiency of its work as a dependent and unstable quantity.

Consequently, cars are constantly being redistributed (changing the routes R) in the urban street network saturated with traffic flows. The volume of traffic interacts with the capacity, and instead of indicators of the basic speed V_0 and basic time t_0, the indicators of the active speed V_{act} and, as a result, the active time t_{act} is formed.

In this case, the delay time for cars at the intersection or interchange on the urban street network t_{delay} can be determined by the formula:

$$t_{delay} = t_{act} - t_0 \tag{1}$$

A change in the project solutions at intersections and interchanges on the urban street network should lead to a change in the speed V_0 and time t_0 first, and then, as a result of the redistribution of the traffic flow due to the saturation of the urban street network, the active speed V_{act} and the active time takt change and, accordingly, the delay time for cars t_{delay} will be changed too.

The total delay time for cars T_{delay} for the entire urban street network can be found using a similar formula:

$$T_{delay} = T_{act} - T_0 \tag{2}$$

It is likely that due to the redistribution of the traffic flow to find equilibrium, the increase in the delay time for cars t_{delay} due to the change of project solution does not necessarily mean an increase in the total delay time for cars T_{delay} for the entire urban street network. However, this hypothesis needs to be tested, which can be done using transport modeling.

6. Transport modeling for the efficiency evaluation

Transport modeling for efficiency evaluating of intersections and interchanges on the urban street network on the example of the transport model of the city of Kyiv and its suburban area (*Tselovalnyk, 2015: 22.1–22.7*) is a combination of special software PTV Visum and data-bases on the mobility of citizens, which are established using sociological surveys of mobility, or Big Data, dependencies, are calculated according to mathematical formulas and reflect the load on the components of the urban street network.

The transport model of the city of Kyiv and its suburban area is multimodal and consists of two main sub models – the model of transport supply and the model of transport demand.

The model of transport supply is a tool that reproduces the urban street network and various parameters of the transport infrastructure that shape the possibilities and volumes of public transport services. It helps to analyze and forecast transport accessibility, capacity, and other important characteristics, but its main function is to create a realistic representation of the city's transport infrastructure for the further distribution of transport demand (Fig. 5).

Fig. 5. Transport supply model of the Transport model of the city of Kyiv and its suburban area

A transport demand model is an analysis tool that helps predict and understand how people will use the transport supply and which transport services they will prefer – cars or public transport. It considers various factors that influence the mode choice of trips by citizens.

As a result of the interaction of transport supply and transport demand models, OD-matrices are calculated according to the defined algorithm of the classic 4-step transport model, which are further redistributed to the urban street and the public transport networks. The result

of this is the indicators of traffic volumes, passenger flow on public transport and indicators of travel time, i.e., the total base time T_0, the total active time T_{act}, which makes it possible to establish the total delay time for cars T_{delay}.

After the transport modeling of the entire urban street network to evaluate the efficiency of intersections and interchanges, and compare its project solutions, it is advisable to make a traffic simulation on this intersection or interchange. It is possible to use the indicators obtained because of traffic simulation to set the base time t_0 of the intersection or interchange and the active time t_{act}, which allows to set the delay time for cars t_{delay}.

To test the assumptions and hypotheses formulated above, it is necessary to conduct a computer experiment.

7. The computer experiment

Let's choose one of the intersections on the urban street network in Kyiv. This is a complex regulated intersection saturated with traffic flows (Fig. 6).
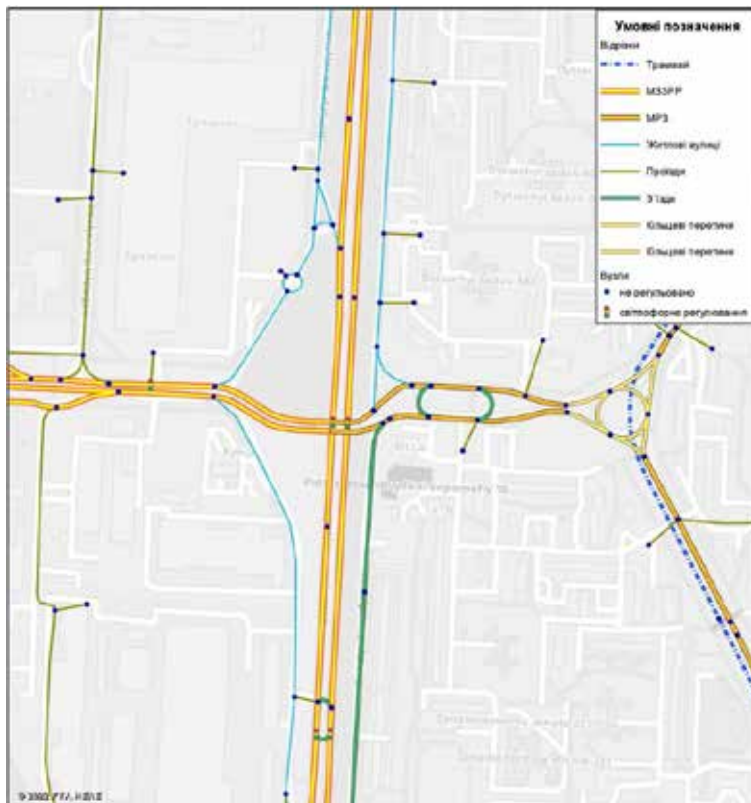
Fig. 6. A fragment of the urban street network of Kyiv with the investigated intersection

It is believed that increasing the capacity of this intersection can improve the situation on the urban street network in Kyiv. Project solutions to increase the capacity of this intersection is to create the interchange with a semi-cloverleaf or with a roundabout (Fig. 7).

Fig. 7. Project solutions for the intersection to establish an interchange:
semi-"clover leaf" (left) and the roundabout with flyover (right)

Traffic simulation performed in PTV Vissim software in accordance with the requirements (*DBN B.2.2-12:2019, 2019*), (*DBN V.2.3-5:2018, 2018*), (*MR – B.2.2-37641918-928:2022, 2022*) established that within the intersection under the semi-cloverleaf project solution, the delay time for cars t_{delay} decreases from **261.47 seconds** (corresponds to LOS F) to **14.53 seconds** per vehicle (corresponds to LOS A), and for the project solution roundabout – up to **8.68 seconds** per vehicle (corresponds to LOS A).

However, transport modeling performed in the Transport model of the city of Kyiv and its suburban area, also done in accordance with the requirements (*DBN B.2.2-12:2019, 2019*), (*DBN V.2.3-5:2018, 2018*), (*MR – B.2.2-37641918-928:2022, 2022*), showed that total delay time for cars T_{delay} for the urban street network did not change: Tact for urban street network remained **1080900 hours** for basic situation without interchange and for both project solutions.

That is, money spent on increasing the capacity of one of the intersections can really reduce the delay time for cars t_{delay} locally at this intersection. However, transport modeling shows that the entire urban street network will not start to work more efficiently from the point of view of the criterion for reducing the total delay time for cars T_{delay}.

8. Conclusions

1. Urban planning documentation in Ukraine is focused on working with unsaturated traffic flows on urban street network in conditions of LOS A – C, and the main indicator of efficiency is the capacity.

2. Efficiency i.e., the ratio between the achieved result and the used resources, in relation to urban street network depends on the efficiency of its components – intersections, interchanges and links.

3. Due to the redistribution of traffic flow, intersections and interchanges have a greater impact on the efficiency of urban street network operation. In turn, the efficiency of the

intersections and interchanges is determined by its project solutions, which is an engineering method of solving the consequences of transport problems of modern cities.

4. The indicator capable of evaluating the efficiency of the intersections and interchanges on the urban street network is the total delay time for cars T_{delay}, and the criterion for evaluating the efficiency of the efficiency of the intersections depending on the goals of transport planning is, accordingly, the reduction of total delay time for cars T_{delay} for the entire urban street network.

5. Transport modeling makes it possible to count the delay time for cars t_{delay} at intersections and interchanges, and the total delay time for cars T_{delay} on urban street network for comparing different project solutions. This requires a certain configuration of initial data, formulas for calculation, sequence of calculations and regulations for checking the quality of the transport models, which requires further integration into the Ukrainian DBN.

6. The computer experiment showed that the reduction of the delay time for cars t_{delay} at the intersections and interchanges in the urban street network saturated with traffic flows does not necessarily mean the reduction of the total delay time for cars T_{delay}.

7. At the same time, a decrease in the total delay time for cars T_{delay} can lead to a more frequent choice of cars for trips by users over other modes of mobility, which will inevitably lead to an increase in the total delay time for cars T_{delay} due to an increase in the number of cars on urban street network. This is called induced demand. Therefore, the choice of efficiency criteria and determination of their weight should be approached responsibly and carefully, especially in conditions of limited resources and uncertainty.

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