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## THE ROLE OF LANGUAGE IMMERSION ENVIRONMENT IN EFFECTIVE ENGLISH LANGUAGE LEARNING

*The article explores the significant impact of language immersion environments on English language learning. It highlights how immersion programs, by providing constant exposure to English and fostering a supportive learning community, offer unparalleled opportunities for language acquisition and proficiency development. The essay discusses the key benefits of language immersion environments, including enhanced cultural experiences, communicative competence, and confidence-building among learners.*

**Key words:** *language immersion, English language learning, immersion programs, cultural experiences, communicative competence, supportive learning community, confidence-building, language acquisition.*

Language immersion environments play a pivotal role in facilitating the effective study of the English language. Immersion programs immerse learners in an environment where English is the primary language of communication, offering unparalleled opportunities for language acquisition and proficiency development. This essay explores the significant impact of language immersion environments on English language learning and highlights the key benefits they offer to learners.

Firstly, language immersion environments provide learners with constant exposure to English language input, fostering a natural and intuitive learning process. By surrounding themselves with English speakers and authentic language use situations, learners are compelled to engage with the language actively. This immersion enables them to absorb vocabulary, grammar structures, and linguistic nuances effortlessly, leading to accelerated language acquisition.

Moreover, language immersion environments offer rich cultural experiences that enhance language learning. Immersed learners not only acquire linguistic proficiency but also gain insights into the cultural context in which the language is used. They interact with native speakers, participate in cultural activities, and develop cross-cultural communication skills, thereby deepening their understanding of English language and culture.

Furthermore, language immersion environments promote communicative competence by providing opportunities for real-life language use. In immersion settings, learners must use English to navigate daily activities, solve problems, and socialize with others. This constant communication hones their speaking, listening, reading, and writing skills, enabling them to communicate effectively in diverse situations.

Additionally, language immersion environments foster a supportive and collaborative learning community. Immersed learners often form bonds with peers who share their language learning journey, creating a conducive environment for practice and peer feedback. Through group activities, discussions, and projects, learners collaborate to achieve common language learning goals, enhancing motivation and engagement.

Another advantage of language immersion environments is their ability to break down language barriers and instill confidence in learners. By immersing themselves in an English-speaking environment, learners overcome inhibitions and fear of making mistakes, as communication becomes a natural and essential part of daily life. This confidence boost empowers learners to take risks, experiment with language, and become more proficient speakers of English.

Furthermore, language immersion environments cater to different learning styles and preferences, offering a diverse range of learning opportunities. Whether through formal classroom instruction, informal conversations, cultural excursions, or language exchange programs, learners have access to varied learning experiences that cater to their individual needs and interests.

In conclusion, language immersion environments play a crucial role in the effective study of the English language by providing constant exposure, rich cultural experiences, opportunities for real-life communication, a supportive learning community, confidence-building, and diverse learning opportunities. As such, learners who immerse themselves in English-speaking environments are better equipped to achieve linguistic proficiency and succeed in their language learning endeavors.

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Petrenko W.

### MOBILITÄT DES AKADEMISCHEN PERSONALS IN DEUTSCHLAND

*In foreign educational special importance is also attached to exchange measures in the sector of research and higher education institutions. German academics in other countries work permanently at institutions of higher education and research institutions. Many German guest researchers complete a temporary research and teaching stay abroad with the support of various institutions.*

**Key words:** *academic staff mobility, institutions of higher education, research institutions*

In der ausländischen Bildungs- und Kulturpolitik wird auch den Austauschmaßnahmen im Forschungs- und Hochschulbereich besondere Bedeutung beigemessen. Der Austausch findet im Rahmen von Förderprogrammen und Preisträgerprogrammen für Dozenten und sonstige Hochschulmitarbeiter statt, die überwiegend vom DAAD und der Alexander von Humboldt-Stiftung organisiert werden. Die Bewertung internationaler Austauschprogramme erfolgt in der Regel durch unabhängige Agenturen oder Experten.

2022 werden rund 63,100 ausländische Wissenschaftlerinnen und Wissenschaftler an deutschen Hochschulen beschäftigt sein, darunter rund 3.900 Professorinnen und Professoren. Die wichtigste Herkunftsregion internationaler akademischer Mitarbeiter ist Westeuropa. Rund 32 Prozent aller internationalen akademischen Mitarbeiter und 65 Prozent der internationalen Professoren kommen aus westeuropäischen Ländern. Die wichtigsten Herkunftsländer sind Indien, Italien, China und Österreich. Von den internationalen Professoren kommen die meisten aus Österreich (19 %), Italien und der Schweiz (je 9 %).

Im Jahr 2021 arbeiteten rund 15,900 ausländische Wissenschaftlerinnen und Wissenschaftler an den Institutionen der vier größten außeruniversitären Wissenschaftsorganisationen, der Max-Planck-Gesellschaft, der Fraunhofer-Gesellschaft sowie der Helmholtz- und Leibniz-Gemeinschaften. Ihre Zahl hat sich seit 2011 fast verdoppelt, so dass im Jahr 2021 rund 29 Prozent der Wissenschaftsmitarbeiter aus dem Ausland kamen.

Neben angestellten internationalen wissenschaftlichen Mitarbeitern forschen und unterrichten internationale Gastwissenschaftler auch in Deutschland, deren Aufenthalt durch in- und ausländische Organisationen finanziert wird. In 2020 beliefen sich dies auf rund 30,000 Aufenthalte. Gastwissenschaftler sind Personen mit ausländischer Staatsangehörigkeit, die sich für einen begrenzten Zeitraum ohne Beschäftigung im Rahmen der finanziellen Unterstützung in Deutschland aufhalten und in Lehre und Forschung an Hochschulen oder anderen Forschungseinrichtungen tätig sind. Insbesondere drei große Förderorganisationen unterstützen die überwiegende Mehrheit der Aufenthalte von Gastwissenschaftlern in Deutschland: *Deutsche Forschungsgemeinschaft* (DFG), DAAD und Alexander von Humboldt-Stiftung.

Das Erasmus+Programm der Europäischen Union unterstützt auch vorübergehende Auslandsaufenthalte von Gastdozenten. Diese Gastdozenten in Europa können zwischen zwei und 60 Tagen dauern. Die Förderung umfasst Lehraufenthalte von wissenschaftlichen Mitarbeitern und Professoren an Universitäten und Forschungseinrichtungen sowie von Mitarbeitern in Unternehmen. Im Erasmus-Jahr 2021 (Anfang Juni 2020 bis Ende Mai 2022) kamen insgesamt nur rund 860 Erasmus-Gastdozenten für einen Lehraufenthalt nach Deutschland.

Zum einen arbeiten deutsche Akademiker in anderen Ländern dauerhaft an Hochschulen und Forschungseinrichtungen. Andererseits absolvieren viele deutsche Gastwissenschaftler mit Unterstützung verschiedener Institutionen einen temporären Forschungs- und Lehraufenthalt im Ausland.

Nach den verfügbaren Daten arbeiten die meisten deutschen Akademiker an Hochschulen in der Schweiz (9.600), gefolgt von Universitäten in Österreich (6.100) und Großbritannien (5.300). Im Jahr 2020 ist der größte Anteil der Deutschen unter allen ausländischen Akademikern in Österreich mit 43 Prozent und in der Schweiz mit 29 Prozent zu beobachten. In Bezug auf die Anzahl der deutschen Professoren im Ausland ist die Schweiz das wichtigste Gastland (1.282) und Österreich (939) das zweitwichtigste. Deutsche Professoren machen mit 70 % den größten Anteil aller internationalen Professoren in Österreich aus. In der Schweiz machen sie 44 % aus.

Im Jahr 2021 wurden rund 5.800 Aufenthalte deutscher Gastwissenschaftler im Ausland von in- und ausländischen Organisationen finanziert. Westeuropa ist die wichtigste Gastregion für deutsche Gastwissenschaftler. Von den geförderten Aufenthalten fanden 30 Prozent in westeuropäischen Ländern statt. Weitere bedeutende Gastregionen sind Nordamerika (13 %) sowie Mittel- und Südosteuropa (10 %). Das wichtigste Gastland für deutsche Gastwissenschaftler im Ausland waren die USA, gefolgt von Großbritannien und Frankreich. Allein die USA entfielen auf 11 Prozent aller finanzierten Gastaufenthalte, das Vereinigte Königreich für 6 Prozent. In beiden Ländern ging die Zahl der geförderten Auslandsaufenthalte nach dem starken Rückgang im Vorjahr aufgrund der Pandemie erneut deutlich zurück. Im Gegensatz dazu verzeichneten Italien, Frankreich, die Schweiz, Polen und Jordanien erneut einen Anstieg der Finanzierungszahlen.

Im Erasmus-Jahr 2021 verbrachten insgesamt rund 970 Erasmus-Gastdozenten aus Deutschland eine Lehrzeit im Ausland mit Erasmus-Förderung. Im Vergleich zu den Vorjahren ist ihre Zahl nach dem starken Rückgang im Vorjahr um weitere 18 Prozent gesunken. Die weltweiten Mobilitätsbeschränkungen aufgrund der Pandemie haben offensichtlich weiterhin starke Auswirkungen auf die vergleichsweise kurzfristigen Auslandsaufenthalte von Erasmus-Gastdozenten. Die meisten Erasmus-Gastdozenten verbrachten 2021 im Ausland in Ländern Südeuropas (30 %), Mitteleuropas (23 %) und Westeuropas (19 %). 11 % von ihnen verbrachten Zeit in nordeuropäischen Ländern, 9 % in südosteuropäischen Ländern und 6 % in mittelwestlichen Ländern.

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**Spachmo G.**

#### **PREPARATION FOR INTERNATIONAL LANGUAGE EXAMS: STRATEGIES AND PRACTICAL RECOMMENDATIONS**

*This article provides essential strategies and practical recommendations for effectively preparing for international language exams, crucial for academic, professional, or immigration purposes. It covers understanding exam structures, assessing current proficiency, setting clear*

*goals, developing study plans, utilizing authentic resources, regular practice, time management, enhancing speaking skills, seeking feedback, and managing test anxiety.*

**Key words:** *language exams, preparation strategies, proficiency assessment, study plan, authentic resources.*

International language exams play a crucial role in assessing individuals' proficiency in a foreign language and are often required for academic, professional, or immigration purposes. This report aims to explore effective strategies and practical recommendations for preparing for such exams.

1. Understanding the Exam Structure:

- Before beginning preparations, it is essential to understand the structure of the exam, including its format, sections, and scoring criteria.

- Familiarize yourself with the types of questions that may appear in each section, such as multiple-choice, writing tasks, speaking tasks, etc.

2. Assessing Current Proficiency:

- Take a practice test or diagnostic exam to assess your current proficiency level.

- Identify areas of strength and weakness to prioritize your study efforts effectively.

3. Setting Clear Goals:

- Set specific, achievable goals for each study session and overall exam preparation timeline.

- Break down larger goals into smaller, manageable tasks to track progress effectively.

4. Developing a Study Plan:

- Create a detailed study plan that allocates time for each skill area (reading, writing, listening, speaking).

- Include a balance of practice activities, review sessions, and simulated exam conditions.

5. Utilizing Authentic Resources:

- Use authentic materials such as past exam papers, sample questions, and practice tests to familiarize yourself with the exam format and question types.

- Explore additional resources such as textbooks, online courses, and language learning apps to supplement your studies.

6. Practicing Regularly:

- Practice regularly to maintain consistency and improve proficiency over time.

- Incorporate a variety of practice activities, including listening to podcasts, reading articles, writing essays, and engaging in conversation with native speakers if possible.

7. Improving Time Management:

- Practice time management strategies to ensure you can complete each section of the exam within the allocated time frame.

- Use techniques such as skimming and scanning to quickly identify key information in reading passages.

8. Enhancing Speaking Skills:

- Practice speaking regularly by engaging in conversations with peers, tutors, or language exchange partners.

- Record yourself speaking and review your performance to identify areas for improvement.

9. Seeking Feedback:

- Seek feedback from teachers, tutors, or language experts to identify areas for improvement and receive guidance on how to address them.

- Participate in mock exams or speaking practice sessions to simulate exam conditions and receive constructive feedback.

10. Managing Test Anxiety:

- Develop relaxation techniques and coping strategies to manage test anxiety and perform your best on exam day.



- Practice mindfulness, deep breathing exercises, or visualization techniques to stay calm and focused during the exam.

Preparation for international language exams requires careful planning, dedication, and consistent practice. By understanding the exam structure, setting clear goals, developing a comprehensive study plan, and utilizing effective strategies, candidates can improve their proficiency and increase their chances of success. Additionally, seeking feedback, managing test anxiety, and maintaining a positive mindset are essential components of a successful exam preparation journey. With the right approach and determination, individuals can achieve their desired scores and unlock new opportunities for personal and professional growth.

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D.Strait

## THE VITAL ROLE OF VOLUNTEERING DURING THE WAR IN UKRAINE

*Amidst the ongoing conflict in Ukraine, volunteering has emerged as a crucial mechanism for providing aid, support, and solidarity to those affected by the crisis. This article explores the multifaceted role of volunteering in Ukraine during the war, highlighting its impact on humanitarian assistance, community resilience, and global solidarity efforts.*

The conflict in Ukraine has inflicted immense human suffering, displacement, and devastation, prompting an outpouring of solidarity and support from individuals and organizations worldwide. Volunteering has become a cornerstone of relief efforts, embodying the spirit of compassion, resilience, and unity in the face of adversity.

Volunteers in Ukraine play a pivotal role in delivering essential humanitarian aid to those affected by the conflict. From distributing food, clothing, and medical supplies to providing shelter and psychosocial support, volunteers are at the forefront of relief efforts, responding to the urgent needs of displaced populations, refugees, and vulnerable communities.

Volunteer organizations collaborate with local authorities, international agencies, and grassroots initiatives to coordinate relief operations, maximize resources, and reach remote or inaccessible areas. Their tireless dedication and grassroots networks enable them to adapt quickly to evolving circumstances and provide timely assistance to those most in need.

Beyond immediate relief efforts, volunteering fosters community resilience and empowerment, empowering individuals and communities to take active roles in rebuilding their lives and communities amidst adversity. Volunteers engage in community-based initiatives such as clean-up campaigns, infrastructure repair, and educational programs, revitalizing social cohesion and fostering a sense of collective agency and purpose.

Volunteer-driven initiatives also address long-term needs such as job training, education, and healthcare, equipping communities with the tools and resources to overcome systemic challenges and build sustainable futures. Through grassroots empowerment and solidarity, volunteering cultivates hope, resilience, and solidarity in the face of hardship and uncertainty.

Volunteering during the war in Ukraine extends beyond local communities, inspiring global solidarity and advocacy for peace, justice, and human rights. International volunteers, activists, and organizations amplify the voices of affected populations, raise awareness about the root causes of the conflict, and advocate for diplomatic solutions and humanitarian interventions.

Volunteer-driven advocacy campaigns leverage social media, grassroots networks, and public outreach to mobilize support, pressure policymakers, and hold perpetrators of violence and injustice accountable. By harnessing the power of collective action and solidarity, volunteers contribute to shaping international discourse, policy agendas, and responses to humanitarian crises.

In conclusion, volunteering plays a vital and multifaceted role in Ukraine during the war, serving as a lifeline for those affected by conflict, a catalyst for community resilience and empowerment, and a beacon of global solidarity and advocacy. As the conflict persists, the tireless efforts of volunteers continue to embody the enduring spirit of compassion, courage, and hope in the face of adversity. In times of crisis, volunteering not only provides essential assistance but also reaffirms our shared humanity and commitment to building a more just, peaceful, and compassionate world.

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Л.В. Айзікова

### **THE INFORMATION TECHNOLOGY APPLICATION FOR THE DEVELOPMENT OF LANGUAGE MEDIATION SKILLS IN THE PROCESS OF ENGLISH LANGUAGE LEARNING**

*This publication explores the integration of information technology (IT) tools in the development of language mediation skills in English language learning. It examines the effectiveness of various IT applications in facilitating language mediation processes such as translation, summarisation and interpretation. The publication is based on the study, which reviewed the existing literature, analysed case studies and proposed practical strategies for educators to optimise the use of IT in language learning environments.*

**Key words:** *information technology (IT), IT applications, language mediation skills, foreign language teaching and learning.*

*Публікація присвячена інтеграції інструментів інформаційних технологій (IT) у розвиток навичок мовної медіації при вивченні англійської мови. Розглядається ефективність різних IT-додатків для полегшення процесів мовного посередництва. Публікація ґрунтується на дослідженні, в ході якого було здійснено огляд існуючої літератури, проаналізовано тематичні дослідження та запропоновано практичні стратегії щодо оптимізації використання IT у навчальному середовищі.*

**Ключові слова:** *інформаційні технології (IT), IT-додатки, навички мовної медіації, викладання та вивчення іноземних мов.*

In the field of language learning, the acquisition of language mediation skills plays a key role in the development of communicative competence and proficiency. Language mediation involves the ability to interpret, translate and summarise information between different languages and modes of communication, thereby facilitating effective intercultural communication and understanding. In the context of English language learning, the development of language mediation skills is essential for learners to navigate confidently and accurately in diverse linguistic and cultural contexts.

Traditionally, language teaching skills have been developed through conventional pedagogical methods such as translation exercises, interpreting tasks and summarising activities. However, the rapid development of Information Technology (IT) has revolutionised language teaching and offers innovative ways to enhance the language learning experience. The integration of IT tools and applications offers unprecedented opportunities to enhance the development of language teaching skills by providing learners with access to a wide range of resources and opportunities for interactive practice.

Despite the potential benefits of IT integration in language teaching, there remains a need to critically evaluate its effectiveness and impact on the development of language mediation skills, particularly in the context of English language learning. While IT tools offer convenience, accessibility and interactivity, challenges such as technological barriers, quality control and pedagogical alignment need to be addressed in order to realise their full potential in facilitating the acquisition of language mediation skills. Thus, exploring the integration of information technology in language education and its impact on the development of language mediation skills emerges as a pertinent area of inquiry.

In recent years, the integration of information technology (IT) applications has transformed the language learning environment, providing a wealth of tools and platforms designed to enhance the language mediation skills of English language learners. This section explores some of the key IT applications used for language mediation, including translation tools, summarisation software and interpretation platforms.

Translation tools such as Google Translate and DeepL have become indispensable resources for language learners seeking instant translation and interpretation of text, audio and visual content. These tools use advanced algorithms and neural machine translation techniques to provide accurate and contextually relevant translations in multiple languages. By using translation tools, learners can quickly access translations of unfamiliar vocabulary, phrases and text, facilitating comprehension and communication in English language learning contexts.

Summarisation software provides learners with the ability to distill complex text and information into concise summaries that aid comprehension and retention. Platforms such as SummarizeBot and TextTeaser use natural language processing algorithms to analyse and extract key information from long texts, generating concise summaries that capture key points and main ideas. This enables learners to effectively condense and synthesise information, improving their summarising skills and their ability to extract meaning from English-language texts.

Collaboration platforms, such as Zoom and Microsoft Teams, facilitate real-time communication and interaction in virtual learning environments. These platforms offer features such as video conferencing, audio calling and screen sharing, allowing learners to engage in synchronous communication and collaborative activities with peers and teachers. In addition, interpreting platforms often support features such as live captioning and interpreting services, giving language learners access to on-demand language support and improving their ability to interpret spoken English.

In conclusion, the integration of IT applications for language mediation provides English language learners with a wide range of tools and resources to enhance their language and communication skills. By using translation tools, summarisation software and interpretation platforms, learners can effectively overcome linguistic and cultural barriers and develop greater fluency and confidence in English language learning contexts.

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## EFFECTIVE COMMUNICATIVE STRATEGIES FOR MANAGERS (ЕФЕКТИВНІ СТРАТЕГІЇ КОМУНІКАЦІЇ ДЛЯ МЕНЕДЖЕРІВ)

*Успішне управління вимагає від менеджерів сильних навичок комунікації. Ця тема досліджує різні аспекти комунікації, зосереджуючись на тому, як менеджери можуть покращити свої навички комунікації для досягнення ефективності в роботі з підлеглими, колегами та іншими зацікавленими сторонами.*

**Ключові слова:** ефективна комунікація, менеджерські навички комунікації, вербальна комунікація, невербальна комунікація, письмова комунікація, електронна комунікація, комунікація в режимі реального часу.

*Successful management requires managers to possess strong communication skills. This topic examines various aspects of communication, with a focus on how managers can enhance their communication skills to work effectively with subordinates, colleagues, and other stakeholders.*

**Key words:** effective communication, managerial communication skills, verbal communication, nonverbal communication, written communication, electronic communication, real-time communication.

Communication is an integral part of our everyday lives. It influences our relationships, work interactions, and overall success in any field of activity. Effective communication is especially crucial for managers responsible for leading teams and achieving business goals.

Effective communication for managers is of paramount importance. It helps convey information and ideas, establish connections with employees and other stakeholders, and understand the needs and expectations of others. When communication is carried out effectively, it contributes to improving the work process, increasing productivity, and achieving high results [3].

However, challenges and difficulties can arise on the path to effective communication. The diversity of communication styles, cultural differences, insufficient listening skills, and difficulty expressing one's thoughts can create obstacles to achieving quality communication.

Therefore, it is important to develop effective communication strategies for managers. This includes studying different types of communication, such as verbal and nonverbal, written and oral, as well as considering aspects of interpersonal and intercultural communication.

The importance of effective communication for managers lies in its role as a key factor in successful management. Communication plays a crucial role in establishing connections with employees and understanding their needs, motivations, and shared goals. Effective communication contributes to creating a supportive work environment where people feel heard and understood [1].

One of the main aspects of effective communication is the manager's ability to convey information, understandably, and specifically. It is important to utilize appropriate communication channels and tools such as face-to-face conversations, email, video conferencing, etc., to ensure an efficient flow of information.

Whether communication takes place in a personal meeting or a virtual environment, managers should be mindful of cultural differences and employ the appropriate tone, language, and nonverbal cues. It is important to adapt one's communication style to the needs and characteristics of the audience.

Managers employ various types of communication for effective interaction. Verbal communication includes conversations, presentations, and meetings where managers convey information and listen to their employees' thoughts. Nonverbal communication, such as gestures, facial expressions, and body language, complements verbal communication by conveying emotions and mood [1].

Written communication, such as emails and reports, is useful for documenting decisions and conveying details. Electronic communication, such as email and chats, enables swift exchange of information and real-time interaction.

The ability to use different forms of communication and adapt them to the situation is an important skill for a successful manager.

Effective communication with stakeholders such as clients, partners, suppliers, and others is a key factor in organizational success. Research shows that certain strategies and methods can help improve communication with these parties [4].

Firstly, listening is a crucial component of effective communication. Listening to the needs and perspectives of stakeholders helps to understand their expectations and requirements.

Secondly, using clear and understandable language is essential. Communication should be simple and avoid complex terms or jargon that can lead to misunderstandings.

Largely, effective communication with stakeholders is based on listening, understanding, clarity, mutually beneficial relationships, diverse communication channels, and a culture of openness. These strategies and methods can help improve communication and achieve shared goals with stakeholders [4].

Cultural differences have a significant impact on communication and require the development of intercultural competence in a manager. Proper understanding and adaptation to cultural nuances can enhance communication and contribute to successful interaction with colleagues and employees from different cultures.

Intercultural competence involves awareness and respect for different cultural practices, values, and norms. A manager should be prepared to adapt their communication style and leadership approach according to the needs and expectations of employees from different cultures. It is important to demonstrate tolerance, openness, and a willingness to learn about cultural diversity [5].

Developing intercultural competence may involve learning about the cultural specifics of different countries and regions, participating in intercultural communication training, and engaging in intercultural projects and teams. It is also important to have an open mindset and be ready to learn and adapt to new cultural environments.

In general, understanding and adapting to cultural differences are important aspects of intercultural communication for a manager. Developing intercultural competence helps maintain harmony, effectiveness, and success in an intercultural work environment.

Technologies such as email, video conferencing, social media, and others play a crucial role in improving managers' communication. Research shows that the use of these technologies can enhance communication efficiency and convenience in various aspects [2].

Email is one of the primary communication tools for managers. It allows for quick and efficient exchange of information, including documents and meeting schedules. Email also provides the ability to archive and search messages for future reference.

Video conferencing has become a popular means of communication, especially for managers working remotely or with distributed teams. It enables real-time meetings and discussions utilizing video and audio communication. Video conferencing saves time and costs, while also providing more personal interaction than simple text messages.

Social media also plays a significant role in managers' communication. It offers the opportunity for quick information sharing among employees, collaborative project discussions, and real-time communication. Social media can also be utilized for supporting external relationships, engaging with customers, and studying market trends [6].

Communication between teams is also crucial for the successful functioning of an organization. Teams from different functional departments may work together on joint projects or tasks. Mutual communication helps coordinate work processes, resolve conflicts, and ensure shared responsibility for outcomes.

The importance of cross-functional communication lies in creating a conducive work environment where each department and team feels like a part of a larger group. It facilitates the exchange of ideas, innovation, and continuous improvement. Communication between functional departments and teams establishes the foundation for collaboration and collective success within the organization.

Managing conflicts through effective communication involves employing strategies aimed at conflict resolution and improving mutual understanding. This includes actively listening to all parties, using open and clear communication, seeking compromise, utilizing mediation, and preventing conflicts through the establishment of effective communication channels and the development of an open corporate culture. These strategies help reduce tension, facilitate the development of constructive solutions, and foster positive relationships among conflict participants.

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## RESEARCH OF CONSUMER BEHAVIOUR IN CRISIS SITUATIONS

*Дослідження спрямоване на аналіз поведінки споживачів у кризовий час з метою виявлення впливу економічної кризи останніх років на купівельну потужність клієнтів. Розглянуто різні теорії споживчої поведінки. Проаналізовано реакції бізнесу на змінену споживчу поведінку у кризових умовах.*

**Ключові слова:** поведінка споживачів, криза, економічна криза, маркетингові стратегії, кризова поведінка.

*The study is aimed at analyzing the behaviour of consumers in times of crisis to identify the impact of the economic crisis of recent years on the purchasing power of customers. Various theories of consumer behaviour are considered. Business reactions to changed consumer behaviour in crisis conditions are analyzed.*

**Key words:** consumer behaviour, crisis, economic crisis, marketing strategies, crisis behaviour.

**Relevance of the topic.** The study of consumer behaviour in crisis conditions is an urgent topic nowadays. Crises can be caused by various factors, such as economic instability, natural, man-made and anthropogenic disasters, military conflicts and global pandemics, which significantly impact consumer behaviour. Certainly, research on consumer behaviour in crisis is an essential theme for understanding how potential customers react to changes in the economic and social environment. This allows enterprises and businesses to adapt to shifts in supply and demand, and to ensure the proper level of service and quality of goods and services for consumers in atypical situations.

**Analysis of recent research and publications.** The problem of consumer behaviour in crisis has been studied by foreign and domestic scientists: Kovalenko O., Bazherina K., Chernenko O., Afanasieva K. [1], Gobela V., Zhyvko Z., Leskiv H., Melnyk S., Smith A., Muller E., Schulte H., Shevchenko I., Brown K. and others. Nowadays this topic requires a detailed disclosure.

**The purpose of the study is to examine** consumer behaviour in times of crisis, to identify the impact of the economic crisis of recent years on the purchasing power of customers, to analyse the cause and effect of the crisis in the country, the behaviour of Ukrainian consumers and the reaction of businesses to the changed consumer behaviour.

### **Presentation of the main material.**

In economic science, the term "consumption" refers to the use of goods and services to satisfy the needs of consumers. One of the first scholars to coin this term was the English economist and philosopher Adam Smith in his book *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776). Subsequently, the term "consumption" was actively used in their research by Eugène Bozard (French economist) and John Maynard Keynes (English economist).

In the second half of the 20th century, the concept of "consumption" began to gain more and more popularity among scholars and researchers in economics, marketing, psychology and other related fields.

Everything seems trivially simple in the system of consumer needs until the client, buyer, or ordinary person finds themselves in a state of stress. At this time priorities are reassessed and the old dogmas of consumption theory cease to work properly. Modern theories of consumption are usually based on the concept of consumer value, which includes not only the material components of a product but also psychological, social and emotional factors.

Consumer behaviour in a typical, crises can be viewed from the perspective of the following approaches:

- Scarcity theory: theory states that consumers become more interested in products that become harder to come by in times of crisis. The human brain works in such a way that you start to value what is lacking. So, without having a certain product in sufficient quantities, customers may feel a greater need for this product;
- Theory of crisis behaviour: this theory suggests that consumers change their behaviour in times of crisis, moving to a more cautious and economical lifestyle. Consumers may pay more attention to prices, discounts and promotions, reduce the amount of goods they buy, and look for alternative ways to meet their needs;
- Psychological response theory: this theory suggests that crises can trigger a psychological response in consumers, such as stress or anxiety. It can lead to changes in consumer behaviour, including an increase or decrease in the number of purchases;
- Theory of the sense of control: this theory states that consumers may feel a control loss in a crisis, and both real and illusive control can be satisfied by increasing the number of purchases.

These theories help to describe the socio-psychological process of the consumer in a crisis to better understand needs and satisfy them [2].

One of the key components of consumer theory is the analysis of consumer behaviour. Studying and understanding consumer behaviour is important for business, as it allows you to develop effective marketing strategies and influence consumer choices.

The history of consumer behaviour dates back to ancient times when people first started bargaining and exchanging personal possessions and resources with each other. Of course, at that time consumers had limited choices, as few goods and services were on the market. In the eighteenth and nineteenth centuries, the growth of industry and technological change led to increasing production and, as a result, the availability of goods on the market. This gave consumers more choices and increased competition between producers. During this period, the first shops and supermarkets appeared, where people could find everything they needed in one place.

In the twentieth century, amid new technologies, the advent of radio and television gave rise to mass advertising, which gave manufacturers a way to promote their products to the general public and influence potential customers. Internet resources, which have improved the achievements of radio and television communications, have also started to operate in this way. Today, consumer behaviour continues to change and evolve under the influence of social, economic, cultural and environmental factors [3].

Thus, consumer behaviour is a set of actions and reactions that people show when choosing, purchasing, using and rejecting goods and services.

Consumer behaviour is theoretically based on the assumption that consumers maximise their satisfaction from shopping, i.e. maximise satisfaction at minimum cost. To formalise this assumption, two basic axioms are used: the axiom of comparison and the axiom of transitivity, which allow us to compare and determine preferences between different consumer baskets.

Combining two axioms based on assumptions about consumer behaviour allows us to formulate the preference theory, which states that all possible consumer baskets can be sorted in ascending or descending order of consumer preferences [4].

Given all of the above, we can conclude that consumer behaviour is a complex phenomenon that changes under the influence of exogenous and endogenous factors. It can be viewed through the prism of consumer behaviour theories or by basic economic assumptions. In any case, for economists, marketers, and managers, the study of consumer behaviour remains an urgent issue that requires detailed research and study to develop marketing strategies for enterprise management, which is the next step in maximising business profits.



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### ACCOUNTING FOR EQUITY IN THE AGRICULTURAL SECTOR

*У роботі розкрито поняття та принципи управління власним капіталом в сільськогосподарських підприємствах. Визначено роль робочого плану рахунків бухгалтерського обліку в обліку власного капіталу. Охарактеризовано форми фінансової звітності, що містять інформацію про власний капітал.*

**Ключові слова:** власний капітал, зареєстрований капітал, нерозподілений прибуток, сільськогосподарські підприємства, облік, статутний капітал.

*The concepts and principles of equity management in agricultural enterprises are revealed in theses. The role of the working plan of accounting accounts in the accounting of equity capital is determined. The forms of financial statements containing information on equity are characterized.*

**Key words:** equity capital, registered capital, retained earnings, agricultural enterprises, accounting, authorized capital, control.

In today's global economic landscape, we are witnessing a rise in the production, quality, and quantity of agricultural goods. Nonetheless, Ukraine faces significant vulnerability in this sector due to various factors, including increasing depreciation of assets, insufficient foreign investments, and a tax policy primarily focused on government revenue rather than supporting businesses. The financial health and viability of agricultural businesses hinge upon making sound decisions regarding resource allocation, capital sourcing, and utilization. Consequently, it's crucial to grasp the intricacies of capital structure and characteristics and represent them accurately in accounting practices.

Such scientists as: I. Blank, O. Vasylynyk, S. Golov, M. Demyanenko, K. Izmaylova, A. Kovalev, A. Poddyerogin, V. Sopko, G. Stasiuk, A. Sheremet, A. Bondarchuk and others.

According to national regulation (standard) of accounting 1 "General requirements for financial reporting": Equity represents that part of the company's property, which is formed due to

the contributions of owners and resources owned by the organization itself. Determining the value of equity consists in measuring the difference between the value of the assets and the amount of the company's liabilities.

The main principles of capital management are: Effective distribution of the enterprise's capital at various stages of its turnover; Systematic planning of the amount and composition of capital; Organization of the system of sources of capital formation; Control over the state and use of the enterprise's capital[1].

Information about the company's equity capital is displayed in various forms of financial reporting, each of which has its own level of detail of this information. These forms are indicated in figure 1.

Form No. 1 - "Balance Sheet (Statement of Financial Status)"

where the total amount of equity is indicated.

Form No. 2 - "Statement of financial results (Statement of comprehensive income)"

where you can see changes in equity due to operating activities.

Form No. 4 - "Report on Equity"

which usually provides detailed information on the movements of equity over a certain period

Form No. 5 - "Notes to financial statements"

where additional explanations can be given regarding the components of equity capital and its changes.

Figure 1: Reporting forms with equity[2].

The working plan of accounts of the enterprise is important for the accounting of equity capital. In Ukraine, passive accounting accounts of the 4th class, which are called "Own capital and securing obligations", are designated for this purpose. Accounting for the formation of authorized capital for companies with limited and additional liability, full and limited partnerships, as well as state and communal enterprises is displayed using subaccounts 401, 404 and 46. However, for such entities there is no mandatory requirement to contribute part of the authorized capital to registration legal entity, and its minimum size is also not established[3].

In conclusion, equity accounting is an important component of financial management of every enterprise, especially in the agricultural sector. He must correctly allocate resources, plan development, organize sources of capital formation and monitor its condition and use. This information is key for making informed management decisions and ensuring the stability and competitiveness of the enterprise. Accurate accounting of own capital allows you to avoid financial risks and ensure effective management of resources, which is a quantity for the further development and success of the enterprise.

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## THE USE OF PRECISION FARMING SYSTEMS FOR THE CULTIVATION OF AGRICULTURAL CROPS IN THE SOUTHERN REGIONS OF UKRAINE AND THE ELIMINATION OF THE CONSEQUENCES OF MAN-MADE DISASTERS

*Досліджено та проаналізовано системи точного землеробства, їх застосування у вирощуванні сільськогосподарських культур та подоланні наслідків техногенних катастроф у південних областях України.*

**Ключові слова:** *прецизійність, землеробство, південь, Україна, навігація, сенсори, агрономія, урожайність, ресурсозбереження, екологія, відновлення, розвиток, родючість.*

*The systems of precision agriculture, their application in the cultivation of agricultural crops and overcoming the consequences of man-made disasters in the southern regions of Ukraine were studied and analyzed.*

**Key words:** *precision, agriculture, south, Ukraine, navigation, sensors, agronomy, yield, resource conservation, ecology, restoration, development, fertility.*

The system of precision agriculture plays a crucial role in cultivating agricultural crops and mitigating the consequences of man-made disasters in the southern regions of Ukraine today. We will examine the fundamental principles and technologies that comprise this system, discussing their advantages in enhancing crop yields and reducing negative environmental impacts.

The southern regions of Ukraine are renowned for their fertile soil and favorable climate for agricultural production. However, over time, population growth, expansion of agricultural areas, changes in climate conditions, and man-made disasters threaten the stability and productivity of agriculture in these regions. Therefore, precision agriculture has become highly significant.

Precision agriculture is a modern approach to managing agricultural resources, utilizing information technologies, satellite navigation, sensors, and other tools to collect and analyze data about soil conditions, crops, and weather. Through precision agriculture systems, landowners and farmers can create field maps, enabling informed decisions regarding fertilizer application, irrigation, and other agronomic practices with precision down to individual square meters [1].

Implementing such a system not only enhances agricultural efficiency but also contributes to the sustainable development of rural communities, ensuring food security and stability in agricultural production. It represents an innovative field combining various modern technologies, including drones, computers, and satellites, making precision agriculture a key factor in the success of future agriculture.

In the southern regions of Ukraine, characterized by fertile soils and a favorable climate for agriculture, precision agriculture is particularly important. This regional specificity makes the system even more beneficial and efficient for farmers and agronomists, addressing tasks of varying complexity.

Utilizing satellite navigation and drone data enables effective management of irrigation processes, taking into account soil moisture and weather conditions, which are essential for successful crop growth in these areas. Precision agriculture systems facilitate timely detection of diseases and pests, particularly important for crops susceptible to damage, allowing for prompt intervention to prevent yield losses. Consequently, precision agriculture helps reduce expenses on fertilizers and fuel by optimizing their application and ensuring uniform distribution. Additionally,

monitoring systems enable continuous assessment of environmental conditions, preventing soil and water pollution and supporting the ecological stability of the southern regions.

The use of satellites and drones in precision agriculture makes it exceptionally efficient, enabling the collection and real-time analysis of large volumes of data. This technology assists farmers in making informed decisions and maximizing the potential of agricultural land in the southern regions of Ukraine.

For the southern regions of Ukraine, precision agriculture can be utilized not only in the cultivation of various crops, including grains, vegetables, fruits, and grapes but also in addressing complex tasks such as land restoration after man-made disasters, such as the terrorist attack at the Kakhovka Hydroelectric Station. It allows for detailed monitoring of soil condition and contamination distribution, facilitating the development of optimal plans for land rehabilitation[1].

Therefore, precision agriculture is indispensable for the southern regions of Ukraine, known for their high soil fertility and potent agricultural potential. It has brought numerous significant advantages, including increased crop yields, efficient resource utilization, environmental preservation, improved product quality, and support for the sustainable development of rural communities.

Drones and satellites in precision agriculture open new possibilities for land restoration after man-made disasters, as they help assess the extent of damage, soil and water contamination levels, and monitor the effectiveness of restoration efforts [2], crucial options for the southern regions of Ukraine affected by technological disasters. Additionally, drones provide high-quality imagery and data, simplifying land restoration processes and environmental monitoring.

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### **THE IMPORTANCE OF SALES IN THE ECONOMY OF UKRAINE (ВАЖЛИВІСТЬ СФЕРИ ПРОДАЖІВ У ЕКОНОМІЦІ УКРАЇНИ)**

*Роль сфери продажів є невід'ємною частиною загальної економіки країни. Роздрібна та оптова торгівля є однією з рушійних сил внутрішньофінансового обороту. У сучасний період непередбачуваності та економічної нестабільності сфера продажів стає однією з провідних галузей як внутрішньої так і зовнішньої економіки України*

**Ключові слова:** сфера продажів, економіка, роздрібна торгівля, торговельний бізнес

*The role of the sales sector is an integral part of the country's overall economy. Retail and wholesale trade is one of the driving forces behind the internal financial turnover. In the current period of unpredictability and economic instability, the sales sector is becoming one of the leading sectors of the domestic and foreign economies of Ukraine.*

**Key words:** sales, economics, retail, sales business

In the current crisis environment, the contribution of each sector of economic activity to the development of the national economy is extremely important. Manufacturing is generally considered to be the engine of national economic development. However, while recognising the importance of manufacturing industries, the role of trade should not be underestimated, as it helps

to maintain a balance between production and consumption, generates a significant portion of gross value added in Ukraine, and provides jobs for the economically active population [2].

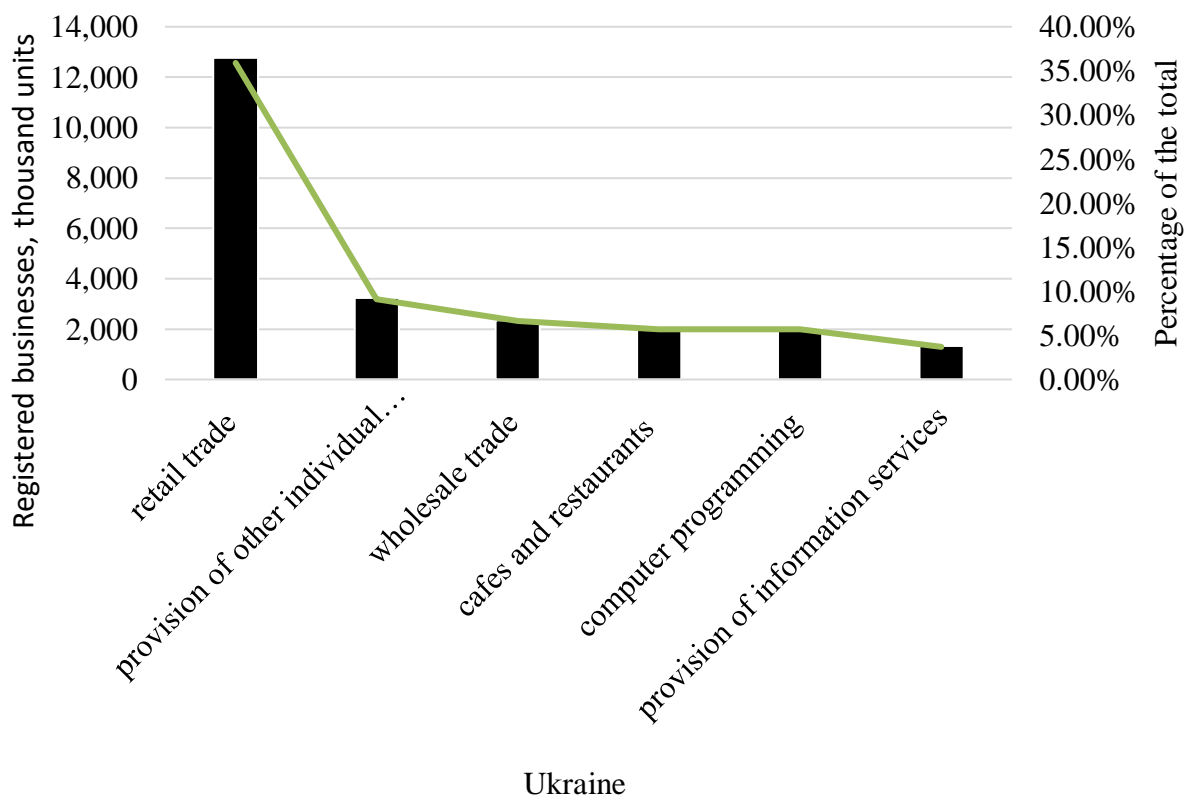
Trade activity, as one of the most important elements of the Ukrainian economy, on which the quality of life of people, economic development and competitiveness depend, is currently undergoing a dynamic transformation stage of development during the crisis.

The sales sector has a significant impact on the following aspects:

- support for economic development: the sales sector contributes to the stable development of the national economy. It plays a key role in creating gross value added in Ukraine.
- job creation: the sales industry provides a large number of jobs, which contributes to employment.
- balancing production and consumption: the sales sector helps to maintain a balance between production and consumption.
- improving competitiveness: the service sector, which includes sales, plays an important role in ensuring the competitiveness of the national economy.
- promoting innovation: the sales sector also contributes to the development of innovation, as companies are constantly looking for new and effective ways to sell their goods and services [3].

The number of newly established and registered businesses as of September 2023 can be seen in picture 1.

Picture 1. Number of newly created and registered businesses as of September 2023 in



*Created by the author based on [1].*

This figure shows that the sales sector is in the lead as of September 2023, with approximately 13,000 new businesses, which is approximately 37.0% of the total number of new businesses over this period. This analysis shows that wartime conditions did not cause the decline of the sales sector.

Efficiency in direct selling is only possible if there is proper legal regulation. Legal regulations governing direct selling activities can be classified as follows:

- laws and regulations, as well as certain provisions of regulatory acts;
- self-regulation rules set out in the Code of Professional Ethics.

In Ukraine, as well as in other countries of the world, including the EU member states, there are no special regulations governing direct selling activities as such, as this activity is a type of

retail trade. However, since there are certain peculiarities of direct selling activities, namely, demonstrations of products to consumers by sellers (distributors), the nature of legal relations between sellers (distributors) and companies that own or legally use trademarks under which goods are sold, such peculiarities are regulated by the current legislation.

Commercial Code of Ukraine The Commercial Code of Ukraine contains some general provisions on ensuring economic diversity and equal protection by the state of all business entities, freedom of entrepreneurship, free movement of capital, goods and services in the territory of Ukraine, restrictions on state regulation of economic processes due to the need to ensure the social orientation of the economy, fair competition in business, environmental protection of the population, consumer protection and public safety [4].

The Law of Ukraine "On Protection of Economic Competition" (defines the legal basis for supporting and protecting economic competition, limiting monopoly in economic activity and aims to ensure the effective functioning of the Ukrainian economy through the development of competitive relations), the Law of Ukraine "On Protection against Unfair Competition" (aims to establish, develop and ensure trade and other fair practices of competition in the conduct of business) are also aimed at stimulating free competition.

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#### ENGLISH LANGUAGE IN THE FIELD OF ECONOMY

*Розглянуто широке коло питань, пов'язаних з дотичністю англійської мови до сучасної економіки. Автор стверджує, що знання англійської мови є необхідним для успішної кар'єри економіста. В роботі розглядаються такі питання, як переваги володіння англійською мовою для економістів. Лексичні та граматичні особливості економічної англійської мови. Навички англійської мови, необхідні для економістів. Автор пропонує ряд рекомендацій щодо вивчення англійської мови для економістів. Обґрунтовано необхідність розвитку рівня англійської мови для тих хто в економічній сфері.*

*Робота буде корисною для економістів, які прагнуть поліпшити свої знання англійської мови, а також для викладачів англійської мови, які працюють з економістами та для студентів.*

**Ключові слова:** англійська мова, економіка, ділова комунікація, лексика, граматики, стилістика, навички.

*A wide range of issues related to the relevance of the English language to the modern economy is considered. The author claims that knowledge of the English language is necessary for a successful career as an economist. The work examines such issues as the advantages of knowing English for economists. Lexical and grammatical features of economic English. English language skills necessary for economists. The author offers a number of recommendations for studying*

*English for economists. The need to develop the level of English for those in the economic sphere is substantiated. The work will be useful for economists who want to improve their knowledge of the English language, as well as for teachers of English who work with economists and for students.*

**Key words:** English language, economics, business communication, vocabulary, grammar, stylistics, skills.

In the globalized world, English is the language of intercultural communication, because no matter who you are: Ukrainian, Italian, Indian or German, when you get together you will communicate in English. In many countries where there is inter-ethnic tension, it is English that performs the role of an ethnically neutral language.

Today, English is the language of the global economy and the global business environment. English is the lingua franca in today's world, and its knowledge is necessary for a successful career in many fields, including economics.

Proficiency in English gives economists a number of advantages:

- They have the opportunity to communicate with foreign partners and colleagues. Regardless of where an international company is located in Sweden, France, the USA or Ukraine, the employees of these companies will communicate in English, not to mention correspondence. In all multinational companies, English is the corporate language used to communicate with management and to communicate with branches in different countries.
- Access to current economic information and analytics. Today, a lot of information is written and provided in English. A large volume of economic information (articles, studies, news) is available in English to give information to a larger audience. And in order to be able to use this data, it is necessary to improve the level of business English.
- Participation in international conferences and projects.
- Increasing competitiveness in the labor market.

The English language is used in quite different economic directions:

1. In international trade, this language is relevant for conducting negotiations with representatives of foreign companies, as well as for concluding contracts. I definitely want to note that for communication with partners, knowledge of the English language will help you a lot.
2. In the direction of finance, knowledge of the English language will come in handy in banking and investments. And also with analytics, you will have open access to relevant information.
3. In accounting, it will not be easy to do without knowledge of the English language, because it is used everywhere: reporting, auditing and tax documentation.
4. In the marketing sphere, this language will be found everywhere: advertising, promotion of goods and services on the international market.

To develop their English language skills, economists can start by studying economic terminology, current special terms and phrases. Business English has a rich vocabulary that includes both common words and specific terms. The use of correct vocabulary and phraseology makes economic language clear, concise and understandable for all participants of communication. Knowledge of stable expressions, idioms and phraseology used in the economic sphere is important.

It is important to pay attention to the practice of business communication. Writing business letters, conducting negotiations, telephone conversations. English is the main tool of business communication in the field of economy. It is important for economists to be able to negotiate, write business letters and e-mails, and make presentations in English.

Reading economic literature can also improve your English. You can start with simple economic articles that are not overloaded with information. Then you can study various books related to the issue that interests you. Also, on the Internet, you can find various studies in English on economic topics.

Improving the general level of English. English grammar plays an important role in the clear and competent presentation of economic ideas. It is important for economists to know the rules of grammar in order to correctly form sentences, use tenses, and use prepositions. Errors in grammar can lead to misunderstandings and negatively affect the image of an economist.

Proficiency in English is an important component of a successful career in economics. It is important for economists to know not only the vocabulary, grammar and stylistics of the English language, but also the rules of business communication. Continuous improvement of their knowledge of the English language will help economists to be competitive in the labor market and to succeed in their careers.

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### THE USE OF PROJECT METHODOLOGY IN LEARNING ENGLISH: FROM THEORY TO PRACTICE

*Стаття підкреслює трансформаційну роль проектної методології в навчанні англійської мови, наголошуючи на її здатності подолати розрив між теоретичними знаннями та практичними мовними навичками.*

**Ключові слова:** *проектне навчання, вивчення англійської мови, володіння мовою, автентичне використання мови, залучення студентів.*

*The article highlights the transformative role of project methodology in English learning, emphasizing its ability to bridge the gap between theoretical knowledge and practical language skills.*

**Key words:** *project-based learning, English learning, language proficiency, authentic language use, student engagement.*

Project-based learning in English learning serves as a dynamic bridge, spanning the chasm between abstract theoretical concepts and the application of practical language skills in real-world contexts. This educational approach immerses students in authentic, hands-on experiences, where they tackle challenges and solve problems within the context of collaborative projects.

By engaging students in real-world tasks, project-based learning creates a seamless transition from theory to practice. Rather than passively absorbing information from textbooks or lectures, students actively apply their knowledge and skills to meaningful projects, such as conducting research, creating multimedia presentations, or collaborating with peers on community initiatives. In doing so, they not only deepen their understanding of English language concepts but also cultivate essential skills such as critical thinking, communication, and teamwork.

One of the key advantages of project-based learning is its ability to contextualize language learning within authentic situations. Students are exposed to genuine language use as they communicate, negotiate, and problem-solve with classmates to accomplish project goals. This exposure to authentic language helps students develop fluency, confidence, and cultural competence in English, preparing them for effective communication in diverse real-life settings.



Moreover, project-based learning encourages autonomy and self-directed learning as students take ownership of their projects from inception to completion. They must plan, organize, and manage their time effectively, fostering independence and accountability in their learning journey. Additionally, by working collaboratively with peers, students learn to appreciate diverse perspectives, leverage each other's strengths, and navigate challenges through collective effort.

Furthermore, project-based learning promotes interdisciplinary connections by integrating language learning with other subject areas or real-world issues. For example, students may explore environmental topics, historical events, or scientific discoveries through English-language projects, thereby enhancing their understanding of multiple disciplines while honing their language skills.

The project methodology represents a pedagogical approach that places students at the center of their own learning journey, fostering active engagement and autonomy in the language acquisition process. By shifting the focus from teacher-centered instruction to student-centered exploration, this methodology ignites a sense of ownership and responsibility among learners, thereby enhancing their motivation to learn English.

One of the key strengths of the project methodology lies in its ability to tap into students' intrinsic motivation by offering them opportunities to pursue topics of personal interest and relevance. By allowing students to select project topics aligned with their passions, hobbies, or career aspirations, educators empower them to take ownership of their learning and invest themselves fully in the language acquisition process. This personalization not only sparks enthusiasm for learning but also cultivates a deeper connection to the language and its practical applications in students' lives.

Moreover, the project methodology fosters the development of creative thinking skills by encouraging students to explore innovative solutions to real-world problems or express themselves through artistic mediums. As students engage in project-based tasks such as creating multimedia presentations, designing posters, or producing videos, they are prompted to think critically, analyze information, and generate original ideas. This cultivation of creativity not only enriches students' language learning experiences but also equips them with invaluable skills that extend beyond the confines of the classroom.

Furthermore, the collaborative nature of project-based learning encourages peer interaction and cooperation, fostering a supportive learning environment where students can learn from one another and share diverse perspectives. Through collaborative projects, students engage in meaningful discussions, negotiate ideas, and collaborate on tasks, thereby enhancing their interpersonal communication skills and promoting a sense of community within the classroom.

Additionally, the project methodology provides opportunities for authentic language use as students engage in real-world tasks and interactions relevant to their projects. Whether conducting interviews, presenting findings, or participating in group discussions, students are exposed to authentic language contexts that mirror those they may encounter outside the classroom. This exposure not only reinforces language acquisition but also builds students' confidence and proficiency in using English in practical, everyday situations.

In summary, the project methodology represents a powerful tool for promoting active student involvement in the language learning process. By enhancing motivation, fostering creative thinking skills, encouraging collaboration, and providing opportunities for authentic language use, this approach empowers students to take ownership of their learning journey and develop the language proficiency and skills needed for success in an increasingly interconnected and diverse world.

Engaging in projects within the English language learning environment cultivates an atmosphere of dialogue and cooperation, serving as a catalyst for the development of language confidence and proficiency among learners. Through collaborative endeavors, students are encouraged to actively participate in discussions, share ideas, and interact with their peers, thus fostering an environment where communication in English becomes both natural and essential.

One of the primary benefits of project-based learning is its promotion of meaningful communication in English. As students work together to brainstorm ideas, plan tasks, and execute

project objectives, they are constantly engaged in verbal and written exchanges, providing ample opportunities to practice and refine their language skills. Whether debating concepts, presenting findings, or providing feedback to their peers, students are immersed in authentic language use scenarios that mirror real-life communicative situations, thereby enhancing their ability to express themselves fluently and confidently in English.

Furthermore, the collaborative nature of projects encourages students to step out of their comfort zones and actively engage with the language. By working together towards a common goal, students are motivated to communicate effectively with their peers, leading to increased language practice and exposure. In this supportive environment, learners feel empowered to take risks, experiment with language structures, and express their ideas freely, ultimately bolstering their language confidence and proficiency.

Moreover, projects often require students to engage with a variety of language skills, including listening, speaking, reading, and writing. As students navigate through different project tasks, they are exposed to diverse language input and are challenged to produce language output in various forms. Whether listening to presentations, conducting research, or writing reports, students develop a holistic understanding of the English language and its practical applications, leading to more well-rounded language proficiency.

Additionally, the collaborative nature of projects fosters a sense of community within the classroom, creating an inclusive learning environment where students feel supported and valued. Through cooperative interactions and shared experiences, students develop interpersonal skills such as empathy, active listening, and conflict resolution, which are essential for effective communication in English and beyond.

Implementing project-based learning in English learning requires adequate teacher preparation, adaptation of tasks to suit students' specific needs and abilities, and ongoing assessment and feedback to ensure successful outcomes.

Based on practical work experience, there are several advantages of project-based learning that can be highlighted:

1. Project-based learning integrates various language skills such as reading, writing, speaking, and listening, providing students with a holistic language learning experience.
2. Project tasks can be adapted to cater to different proficiency levels, from beginner to advanced, and to diverse age groups of students, making it a versatile approach in English language learning.
3. Participation in projects allows students to apply their acquired knowledge and skills in practical contexts, thereby increasing the effectiveness of learning and enhancing students' future career prospects.
4. Project methodology in English learning cultivates critical thinking, analytical, and organizational skills among students, preparing them for success in both academic and professional spheres.

In conclusion, engaging in projects within the English language learning context not only facilitates meaningful communication and collaboration but also fosters the development of language confidence and proficiency. By creating an atmosphere of dialogue and cooperation, projects empower students to actively engage with the language, practice essential language skills, and develop the confidence to express themselves fluently and effectively in English.

In essence, project-based learning in English learning empowers students to bridge the gap between theory and practice by immersing them in authentic, meaningful learning experiences. Through collaborative projects, students not only acquire language proficiency but also develop critical thinking, communication, and problem-solving skills essential for success in the interconnected global landscape of the 21st century.

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### ENCOURAGING THE PROFESSIONAL GROWTH OF EMPLOYEES

*Розглянуто роль сприяння професійному росту співробітників на підприємстві та зроблено особливий акцент на значущому впливі володіння англійською мовою. Наведено переконливі аргументи на користь стратегічної важливості сприяння професійному росту.*

**Ключові слова:** заохочення, система мотивації та стимулювання праці, професійного зростання працівників.

*The role of promoting the professional growth of employees at the enterprise is considered, and a special emphasis is placed on the significant impact of English language proficiency. Convincing arguments are presented in favour of the strategic importance of promoting professional growth.*

**Key words:** encouraging, the system of motivation and labour stimulation, professional growth of employees.

In the modern world of business, where everything is constantly changing and competition is always at its height, it is important to focus on the fact that employees constantly develop professionally. The ability to maintain and improve the skills of the workforce becomes a major advantage for enterprises that strive not only for success but also for stability.

Encouraging the professional growth of employees is a targeted and systematic influence on employees with the help of professional training during their working life activities in the organization to achieve high production efficiency or services provided, increasing the competitiveness of personnel on the labour market, ensuring that employees perform new, more complex tasks based on the maximum possible use of their abilities and potential [1].

Professional development, considered not just as an investment in human capital, but as a strategic step towards excellence, plays an important role in various sectors of the economy.

Managers, taking into account the observation of employees and their development, establish specific training goals. These goals may include the development of professional skills, the formation of a certain type of thinking and behaviour, as well as the acquisition of additional knowledge. Professional training may involve new employees to speed up their adaptation or existing employees facing new responsibilities that require upskilling [3].

Continuous improvement of employees is a key factor for improving the quality of products and services at the enterprise. It is a continuous process that contributes to the efficiency of the work process. As a result, the quality improves, and the company gets a positive reputation, which leads to the strengthening of trust on the part of customers.

Thanks to the constant growth of the competence of employees, clients can expect a high level of professionalism and quality in the provision of products or services. This, in turn, increases customer satisfaction and creates a positive impression of the company. This approach also allows the company to retain and attract new customers, because trust in the quality of products or services is a key factor in a competitive business environment. In addition, the formation of a highly qualified workforce opens exciting new avenues for the organizational development of employees. Investing in professional growth is similar to sowing innovation in organizational culture. Businesses that prioritize continuous learning and development foster a spirit of creativity and adaptability among their employees. In the era of rapid technological progress, being ahead of the curve is not just an advantage, but also a necessity. The acquisition of advanced skills and knowledge ensures that the company remains not only relevant but also positioned as a leader in the industry [2].

The drive for improvement is constantly pushing boundaries, especially in a global economy where English is becoming a critical factor for international success. Language competence becomes necessary not only for effective mutual understanding but also for successfully negotiating and building relationships with partners, clients and stakeholders in different linguistic and cultural contexts.

In the light of globalization and interaction between different cultures, languages become not only a tool for effective communication, but also a means of building trust and understanding between parties. The ability of employees to confidently speak English provides a competitive advantage and contributes to the expansion of business and development in the conditions of international competition [3].

This approach opens up new opportunities for business development and positively affects its status in the global business environment.

In addition, in a world where collaboration knows no borders, knowledge of the English language is becoming a unifying force in international companies. The ability to articulate ideas, share ideas, and collaborate seamlessly contributes to workforce efficiency and productivity, creating a cohesive and effective work environment [1].

The strategic importance of promoting English language proficiency becomes even more pronounced when we consider the access it provides to a large number of global resources. English-speaking employees can navigate and utilize resources while staying abreast of the latest trends, research findings, and technological advances. This not only ensures the competitiveness of the enterprise but also positions it as a thought leader in its field. In the pursuit of global competitiveness, organizations must recognize knowledge of the English language as an integral part of their professional growth strategy. The ability to communicate, innovate and stay abreast of global events depends on commitment to both professional development and language acquisition. Because businesses take a holistic approach, they arm their workforce with the tools not only to thrive in the present but also to shape the future [2].

In summary, strategically promoting the professional growth of employees transcends time, language, and market dynamics. It is a multi-faceted approach that combines skills, knowledge and language skills development to create a workforce ready to meet the challenges and seize the opportunities of a rapidly evolving global business environment. As businesses invest in the continuous development of their human capital, they lay the foundation for sustainable success, innovation and leadership in the competitive environment of the 21st century.

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## APPLICATION OF ARTIFICIAL INTELLIGENCE TO GEODETIC DATA PROCESSING

*У статті розглядається застосування штучного інтелекту для обробки геодезичних даних та його вплив на покращення точності, ефективності та швидкості аналізу.*

**Ключові слова:** штучний інтелект, обробка геодезичних даних, точність, ефективність, швидкість аналізу, геодезія, картографія.

*The article considers the use of artificial intelligence for geodetic data processing and its impact on improving the accuracy, efficiency and speed of analysis.*

**Key words:** artificial intelligence, geodetic data processing, accuracy, efficiency, analysis speed, geodesy, cartography.

Geospatial information plays a role, in fields like map making, city planning, environmental surveillance and geological engineering. However, dealing with this data can be intricate and time consuming due to its volume and complexity. Artificial intelligence (AI) offers an approach to analyze and process such data.

AI involves computer systems of performing tasks that traditionally rely on intelligence like learning, decision making and speech recognition. Its application in geodesy and map making streamlines tasks enhances the accuracy and speed of data processing and uncovers intricate patterns within information.

To validate this theory a research project utilized AI techniques such as machine learning and neural networks for analyzing data.

Machine learning is an AI technique that enables computers to learn from data without programming. Neural networks are a type of machine learning algorithm inspired by the structure and function of the brain.

In the study neural networks were employed for categorizing information, like elevation, slope angles and directional aspects.

The findings indicated that employing networks, for categorizing data yielded a 95% accuracy rate surpassing traditional approaches by 15% [3]. Additionally, the utilization of machine learning algorithms to forecast changes in data led to a 20% enhancement in accuracy compared to statistical models [4]. An instance of an AI implementation in processing data is the "DeepGlobe" initiative conducted by "Carnegie Mellon University" and "CosmiQ Works". Within this project neural networks were utilized for automated extraction of buildings from satellite imagery. The outcomes revealed that neural networks can attain a 90% accuracy rate, in building extraction significantly outperforming techniques [5].

Using AI to process data offers advantages beyond just enhancing accuracy and efficiency. For example, it can automate tasks reduce the reliance, on labor and minimize errors linked to human related factors. Additionally, AI has the capability to uncover patterns and connections within data that may not be easily recognizable by humans. This feature proves valuable in detecting changes like soil erosion, sea level fluctuations and climate variations.

Furthermore, AI aids in handling volumes of data gathered from diverse sources such as satellite images, aerial photographs, drones and ground sensors. With its capacity to swiftly process datasets AI enables geodesists to produce dependable outcomes in a more expedited manner.

The research findings demonstrate that leveraging AI for geodetic data processing significantly enhances accuracy, efficiency and analysis speed. This advancement opens up horizons in the fields of geodesy and cartography especially pertaining to surveillance urban development planning and engineering geological studies.

Despite the promising outcomes achieved far exploration in this domain is still, at a developmental stage.

More research is required to enhance the effectiveness of AI algorithms in analyzing information and to investigate the applications of AI in various geodesy related fields. One area that warrants exploration is utilizing AI for the analysis of Light Detection and Ranging (LiDAR) data, which's crucial, for generating precise 3D models of Earth's terrain. While LiDAR offers elevation and surface information its data processing can be intricate and time intensive. Leveraging AI could automate LiDAR data processing leading to improved accuracy and efficiency, in analysis.

Another avenue, for exploration involves utilizing AI to analyze data gathered by UAVs. UAVs are becoming increasingly prevalent in geodesy and cartography for capturing data about the Earth's surface. Integrating AI can streamline the processing of UAV data enhancing the precision and effectiveness of analysis [7].

Additionally, AI has the potential to develop systems that can autonomously adapt to environmental changes and fine tune their parameters based on acquired data. Such systems could prove invaluable in scenarios where environmental shifts happen swiftly and unexpectedly such as during calamities.

Consequently, leveraging intelligence for data processing holds promise in advancing accuracy, efficiency and rapidity of analysis. This paves the way for possibilities in the realms of geodesy and cartography in environmental monitoring, urban planning and engineering geology. Nonetheless research in this domain is still nascent necessitating exploration to refine AI algorithms tailored for processing data effectively and uncovering AI's potential, across other facets tied to geodesy.

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## GENERAL THEORETICAL INFORMATION ABOUT AUTOCAD AND ITS AREAS OF APPLICATION

*Було розглянуто поняття автокад та основні шляхи застосування цього програмного забезпечення, як частини систем автоматизованого проектування. Визначено проблеми, які вирішує автокад.*

**Ключові слова:** САПР, AutoCad, програмне забезпечення, дизайн, моделювання.

*The concept of AutoCAD and the main ways of using this software as part of automated design systems were considered. The problems that AutoCAD solves are defined.*

**Key words:** CAD, AutoCad, software, design, modeling.

AutoCAD is an automated tool that allows different types of designers to create different types of drawings and designs. This program helps designers create their projects much faster than by hand, and offers many quick, easy and useful functions such as copy and paste.

AutoCAD can create any 2D drawing and 3D model or design that can be drawn by hand. The program also allows the user to group or overlay objects, store objects in a database for later use, and control object properties such as size, shape, and location [1].

AutoCAD can be defined as the use of computer systems to assist in the creation, modification and optimization of designs. At the same time, we can create both 2D and 3D drawings used in construction and production. It was developed by John Walker in 1982 with AUTODESK and has been successfully maintained. It is most commonly used to create and modify 2D and 3D designs for professional drafting, with detailed information on conceptual design dimensions and product layout, also available in 14 different languages depending on location. Users can customize the CAD software with the help of available add-ons according to the project requirements. Customization of the specialized tool can be performed to view and design the product while modeling the frame and surface. Widely superior in the fields of mechanical engineering, telecommunications, civil engineering, and architectural design. It is in demand by students and industrial enterprises because of its capabilities.

Reasons for implementing CAD systems:

- To increase the productivity of the designer's work.
- To improve design quality.
- To create a database for production.
- To improve communication through documentation.

Before this software, all engineers used drawings and paper to create product designs. The designer needed a lot of time to develop the product. If the manufactured product did not meet the customer's needs or the manufacturers found any errors in the product after manufacturing, they had to redesign the product, which was a time-consuming process. The designer needs to change the design of the product by removing or sometimes using a new scheme to design it. This leads to the following problems:

- Delay in production.

• Increase in the share of defective products. In order to reduce the above problems, this software is one of the solutions for IT. Software product we can save the design of product modifications; we can edit a design that has been saved before, which shortens the product development time. It also reduced human effort [2].



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УДК 811 111

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## FUEL ACCOUNTING AND CONTROL IN THE AGRICULTURAL SECTOR

*Досліджено процес обліку і контролю палива в сільськогосподарському секторі, який має вирішальне значення для управління витратами, забезпечення ефективності та дотримання нормативних актів. Паливо є ключовими в енергетиці та відіграють важливу роль у забезпеченні енергетичних потреб агропромислового комплексу. Розглянуто різні форми і методи обліку паливно-мастильних матеріалів.*

**Ключові слова:** паливний матеріал, джерела енергії, форми обліку, методика обліку, агропромисловий комплекс.

*The paper examines the process of fuel accounting and control in the agricultural sector, which is crucial for cost management, efficiency, and regulatory compliance. Fuels are key in the energy sector and play an important role in meeting the energy needs of the agricultural sector. Different forms and methods of accounting for fuels and lubricants are discussed.*

**Key words:** fuel material, energy sources, accounting forms, accounting methods, agro-industrial complex.

The activities of almost every company are related to the operation of vehicles, and therefore to the purchase and use of fuels and lubricants. The term "fuels and lubricants" does not have a clear legal definition. Fuel is the fuel used for internal combustion engines, and the term "fuel" is a general term that refers to a substance used to generate heat energy. Therefore, an accountant must clearly understand how to document the purchase, use and write-off of fuels and lubricants, as well as know all the nuances of accounting and taxation of transactions related to the movement of fuels and lubricants in the company.

Fuel and lubricants are accounted for in subaccount 203 "Fuel". The purchase of fuel and lubricants is recorded in the debit of this subaccount on the basis of cash register receipts. The write-off of fuel and lubricants for expenses is reflected in the credit of subaccount 203 within the established norms (20, 23, 28, 91-94). If there is an overrun, it is reflected in the debit of subaccount 947 "Shortages and losses from damage to valuables". Settlements with an accountable person are recorded in subaccount 372. The issuance of accountable amounts is reflected in the debit of this subaccount in correspondence with the credit of subaccount 301 when cash is issued for reporting, or with the credit of subaccount 311 when funds are transferred to the accountable person's card. Closing of the accountable person's debt is reflected in the credit of subaccount 372 in the report (debit of subaccount 203 - credit of subaccount 372). The Tax Code does not provide for adjustments to the financial result for income tax purposes in transactions with fuel and lubricants. Therefore, all taxpayers record such transactions in their tax accounting in accordance with accounting rules. When purchasing fuels and lubricants, the buyer recognizes a VAT tax credit on the date of the first event based on a tax invoice issued by a gas station or a fiscal receipt from a cash register registered in the Unified Register of Tax Invoices (clauses 198.2, 201.11 of the Tax Code) [1].

Ukraine has a number of regulations governing fuel accounting. Here are some of them:



5. Resolution of the Cabinet of Ministers of Ukraine dated 27.08.2014 No. 417 "On Approval of the Procedure for Fuel Accounting" - this document establishes the procedure for fuel accounting for motor vehicles and other technical means.

6. Tax Code of Ukraine - defines the rules of fuel taxation and requirements for accounting for tax liabilities in this area.

7. Law of Ukraine "On Accounting and Financial Reporting" - this law establishes general accounting principles, including fuel accounting.

8. Order of the Ministry of Ecology and Natural Resources of Ukraine dated 28.12.2012 No. 1055 "On Approval of the Instruction on Fuel Accounting and Control" - this order sets requirements for accounting and control of fuel use in various fields of activity.

9. Regulatory legal acts of local authorities - may also contain requirements for fuel accounting, in particular in the agricultural sector [2].

Accounting for fuels and lubricants is carried out to ensure control over their use, distribution and rational management of stocks in the enterprise. The form and methods of accounting may vary depending on the type of enterprise and its needs.

The main forms of accounting for fuels and lubricants:

4. Card accounting: fuel cards are issued to specially designated persons or drivers of vehicles. The card records data on the fuel issue, deductions for its use, and the balance on the cards.

5. Journal accounting: involves keeping a journal in which all operations with fuels and lubricants are recorded - acceptance, issuance, and deposit of balances.

6. Quantitative and cost accounting: includes measuring the amount of fuel using sensors on equipment or special measuring devices, such accounting is kept in monetary terms.

These regulations are the basis for organizing fuel accounting in Ukraine. It is important to familiarize yourself with them and comply with the requirements to ensure correct and efficient fuel accounting. Petroleum products, such as gasoline, diesel fuel, oil, lubricating oil, brake fluid and additives, are classified as fuels and lubricants in accordance with DSTU 3437-96 "Petroleum Products". The purchase, transportation, storage and accounting of these products are regulated by Instruction No. 281, approved by the Order of the Ministry of Economy, Ministry of Transport and Communications, State Committee for Technical Regulation and Consumer Policy dated 20.05.08. . Paragraph 10.3 of this Instruction provides for various options for the sale of petroleum products: for cash, payment cards, statements or coupons [3].

Implementation of a fuel management system in the agricultural sector is a key step to ensure efficient use of resources, control costs, and prevent possible fraud or losses. Here are some of the steps used to successfully implement a fuel management system in the agricultural sector:

- Analysis of the current state of fuel management in the agricultural enterprise..
- Defining goals - this can be reducing fuel costs, increasing efficiency, preventing theft.
- Selection of software that meets the needs and budget of the enterprise. A program that allows you to keep track of fuel consumption, control stocks and perform reporting.
- Monitoring and analysis of data coming from the fuel management system to identify trends, anomalies or opportunities for optimizing fuel use.

Monitoring fuel consumption in the agricultural sector is a very important element of resource management and cost optimization. This process allows you to control the amount of fuel used, identify possible problems or costs, and ensure efficient use of resources. Various methods and tools can be used to monitor fuel consumption in the agricultural sector [2].

Installing sensors in tanks to measure fuel levels. This method allows you to automatically measure the amount of fuel used on machines or equipment. Information from the sensors can be

transmitted to the fuel management system for further analysis. Keeping a fuel log Employees can keep a log in which they record the amount of fuel that has been refueled and used at each facility or machine. This method provides detailed information about fuel consumption.

Also, to prevent fuel theft, the company installs video surveillance systems at fuel storage facilities, at gas stations and on vehicles, which can help detect illegal activities. The use of special technologies, such as GPS systems to monitor vehicle movements or fuel level measurement systems in tanks, can help detect theft. These are just a few of the ways in which fuel theft can be prevented at a company. It is important to constantly improve the control system and implement security measures.

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## THE IMPORTANCE OF KNOWING ENGLISH AND WAYS TO LEARN IT

*Проаналізовано роль англійської мови в суспільстві, розглянуто переваги та можливості, які надають знання англійської мови в сучасному світі. У статті також розкрито ефективні методи та способи вивчення англійської мови.*

**Ключові слова:** навчальні курси, регулярність, міжнародна мова, культурний розвиток, глобалізований світ.

*The role of English in society is analyzed, the advantages and opportunities provided by knowledge of English in the modern world are considered. The article also reveals the effective methods and ways of learning English.*

**Key words:** educational courses, regularity, international language, cultural development, globalized world.

In today's globalized world, the role of international languages cannot be overstated. They have become the key to unlimited opportunities in communication, business, knowledge and experience exchange, as well as trade and services. Through a common language, people from different parts of the world, with different social and cultural backgrounds, can connect, unite and create together.

Based on the results of recent studies, there are about two thousand languages in the world, of which 50 are recognized as the most common. According to Ethnologue, English is considered the leader of the language ranking, spoken by about one and a half billion people in 146 countries.

English is the key to education and learning in the modern world. The world's leading universities offer educational programs in English for students from different countries. Proficiency in English provides students with the opportunity to participate in student exchange programs, where they can acquire not only work skills, but also improve communication and social skills.

A lot of interesting and valuable information is published in English, and its knowledge gives access to a variety of educational resources: online courses, lectures, textbooks, scientific

articles and books. This opens the door to deep knowledge in various fields: science, technology, engineering, mathematics, medicine, business, and many others.

English gives you the opportunity to communicate with the best teachers and researchers in the world, share experiences, participate in projects, conferences and seminars. It becomes the key to the international educational community: meeting people from different cultures, broadening your horizons, and establishing contacts.

Learning English opens the door to the best universities in the world and gives you the opportunity to get a quality education, which is the key to a successful career and a better life, as many companies are focused on international orientation, which is why they are interested in employees who can effectively communicate with foreign partners and clients, and confidently present their projects and ideas [1].

It is important to note that English allows you to travel freely and confidently, gives you a better insight into the historical and everyday aspects of life in a country, and makes it easy to move around and communicate with others. It also provides an opportunity to thoroughly understand the cultural heritage, as translation does not always convey the meaning that was embedded in films, music or literature [3].

Learning a foreign language is a time-consuming and laborious process. The most important rule in learning English, according to many teachers, is regularity, namely, determining a certain number of hours a week that you will devote to the language, preferably every day. Even 10 minutes a day will make good progress in a few months. It is important to maintain the initial drive and desire that most people feel at the beginning of their learning journey, before and after their first successes.

Let's look at several key ways that will help those who want to speak English reach certain levels from A1 to C2.

Regular and consistent study of English is essential for success in this learning process. Systematic short lessons, however small, but regularly conducted, can significantly improve your language skills. It is a great way to train your mind to receive and process new information.

However, learning alone is not enough. It is important to actively interact with the language to ensure that it is actually used. Practicing in everyday communication is a great way to immerse yourself in the language environment. Talk to native speakers, write letters, read books, and watch movies in English. This will not only improve your skills, but also give you the opportunity to use the language in different contexts.

You can make the most of technology by using it to support your learning process. The Internet and mobile applications provide access to a variety of resources: interactive courses, educational games, videos and other useful materials. They can make learning more fun and effective.

If possible, try to immerse yourself in a language environment where English is the native language. Staying in an English-speaking country can be incredibly beneficial for you. It will give you the opportunity to surround yourself with the language at every turn, which will help you adapt faster and improve your language skills.

Using different learning methods is the key to successful language acquisition. Combine reading, writing, listening, and active speaking practice. This integrated approach will help you develop all aspects of your language competence and ensure greater success in your studies.

Setting clear goals for your English learning is an important step. Define your goals and develop lesson plans to systematically develop your skills. This will help keep you on track and keep you motivated to learn.

The need for patience and perseverance cannot be overemphasized. Learning any language is a laborious process that takes time and a lot of effort. Don't let yourself get discouraged by possible mistakes or difficulties; on the contrary, consider them as a necessary stage in your own development and improvement of skills.

Summarizing all of the above factors, it should be noted that in the modern world, English language proficiency is becoming a necessity and a key element of personal and professional

development. Learning English is recognized as an important investment for harmonious integration into the global society.

In today's world, English language proficiency can be seen as a window of opportunity that allows you to achieve your goals. By mastering this language, which is an international means of communication, you can gain access to new prospects and career growth. It is important to understand that the importance of English in the modern world cannot be exaggerated [2].

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### THE ROLE AND IMPORTANCE OF SELF-MOTIVATION IN AN EMPLOYEE'S LABOR ACTIVITY

*У тезах розглянуто поняття мотивації та самомотивації. Досліджено концепцію внутрішньої мотивації та її ключові аспекти, такі як автономія, майстерність і мета. Проаналізовано вплив організаційної культури, комунікації та підтримки керівництва на стимулювання самомотивації працівників. Визначено, що сприятливе робоче середовище, яке підтримує внутрішню мотивацію та визнає досягнення працівників, сприяє досягненню високих результатів у трудовій діяльності.*

**Ключові слова:** самомотивація, внутрішня мотивація, продуктивність, трудова діяльність, управління трудовими ресурсами

*The concepts of motivation and self-motivation are considered in the thesis. The concept of intrinsic motivation and its key aspects, such as autonomy, mastery and purpose, are investigated. The influence of organizational culture, communication and management support on stimulating employees' self-motivation is analyzed. It is determined that a favourable working environment that supports intrinsic motivation and recognizes the achievements of employees contributes to the achievement of high performance in labour activity.*

**Key words:** self-motivation, intrinsic motivation, productivity, labour activity, human resource management.

In the modern world, where the issues of productivity and efficiency in work are becoming more and more relevant, the role of self-motivation of employees acquires special importance. The researchers note that motivation is not limited to external factors, such as salary increases or bonuses. Internal motivation, namely self-motivation, turns out to be key to achieving high results in the labour field. This issue attracts the attention of scientists, who note that self-motivation plays an important role in shaping the professional activity and development of an employee. In this connection, there is a need for a detailed study of this phenomenon and its impact on labour productivity.

In general, motivation is an internal drive that arises from a need and fuels an individual's desire and will to use their energy – both physical and mental – to achieve their goals [2].

The natural inclination to engage in intrinsically motivated behaviour is an important feature of human nature and plays an important role in development, high-quality performance and well-being [4].

When faced with challenges, people can use the mechanism of self-motivation to push themselves to achieve their best performance. Self-motivation is based on feelings of independence, competence, and connection. Unlike extrinsic motivation, such as low pay or limited career opportunities, self-motivation helps overcome self-doubt and internal conflicts [1].

Self-motivation is a process where a person directs his or her activities to meet his or her needs and achieve goals. Motivation, on the other hand, is an internal force that pushes us to take certain actions, satisfying our needs and desires to achieve certain results [3].

Intrinsic motivation is the desire to perform an activity for one's satisfaction or internal desire, rather than for external reward.

Pink proposed a theory of motivation that has three main elements of intrinsic motivation: autonomy, mastery, and purpose. Autonomy means the desire to control one's own life. Mastery means the desire to improve in something that matters to the performer. Purpose means the desire to contribute to something bigger than yourself [4].

However, not all employees have the same level of intrinsic motivation. If employees' motivation is weak, it can lead to lower productivity and increased turnover, which can create a problem of human resource drain from the organization [5].

In particular, a high level of motivation is characterized by the following indicators: punctuality and efficient use of time to complete work. In addition, high motivation is manifested in the ability to take initiative and propose new ideas, as well as in a deep knowledge of the details of the work. Highly motivated individuals are confident in their abilities and determined to achieve their goals, and they are enthusiastic. Low motivation is characterized by frequent complaints about various aspects of work, high absenteeism, neglect of work, and lack of interest in achieving goals. Low productivity is also an important indicator of low motivation, as it reflects an individual's overall job dissatisfaction [3].

Employees experience different levels of job satisfaction, which is determined by their physiological, safety, social, and self-esteem needs, meaning that performance and comfort at work largely depend on meeting the basic needs of employees. The study found that timely payment of salaries and safe working conditions contribute to employee satisfaction. It is also important that employees feel valued by the company, which can be expressed through recognition and support for development by management. These results indicate the importance of not only the material but also the social and psychological aspects of the work environment in maintaining employee satisfaction and productivity [2].

Organizational culture also has a significant impact on employees' intrinsic motivation. For example, leadership style, quality of communication, and human resource management practices can stimulate or suppress intrinsic motivation. It is also important to support employees, recognize their value and provide opportunities for personal and professional growth [4].

**Conclusion.** Self-motivation is a key element of successful work, as it stimulates the employee to self-realization and continuous professional development. It helps to overcome difficulties and obstacles on the way to achieving the set goals while providing inner satisfaction from the work process.

Factors such as organizational culture, communication, and support from management play an important role in maintaining employee self-motivation. A supportive work environment where employees feel valued and recognized for their achievements encourages them to achieve high performance.

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## **THE IMPORTANCE OF LEARNING FOREIGN LANGUAGES IN THE MODERN WORLD**

*У роботі розглядається важливість вивчення іноземних мов в умовах глобалізації та інноваційних технологій, доводиться, що володіння іноземною мовою є запорукою успіху в сучасному світі, де комунікація та обробка великої кількості інформації іншомовними стають стає все більш важливим, аналізується дослідження вчених з Лондонського університету, які встановили зв'язок між вивченням мови та розвитком гнучкого та оригінального мислення, підкреслюється роль англійської мови як міжнародної мови бізнесу, торгівлі, Інтернету, науки та мистецтва, а також обґрунтовується значення володіння іноземною мовою в розвитку світу.*

**Ключові слова:** інтеграція, іноземна мова, освіта, дошкільні навчальні заклади, діти, Міністерство освіти і науки України, розвиток.

*The author considers the growing importance of learning foreign languages in the context of globalization and innovative technologies, proves that foreign language proficiency is the key to success in the modern world, where communication and processing of large amounts of information in other languages are becoming increasingly important, analyzes the research of scientists from the University of London, which established a link between language learning and the development of flexible and original thinking, emphasizes the role of English as an international language of business, trade, the Internet, science and art, and substantiates the importance of foreign language proficiency in the development of the world.*

**Key words:** integration, foreign language, education, preschool education institutions, children, Ministry of Education and Science of Ukraine, development.

With the integration of society and the emergence of innovative technologies, the importance of learning foreign languages has become more important. If earlier such skills were needed mainly for employment, today there is no field of human activity where foreign languages are not used. Mastery of foreign languages is the key to success in the modern world, where communication in foreign languages and processing of huge amounts of information is becoming increasingly essential. Interest in learning languages remains high, as those who know languages know the world. Knowledge of foreign languages plays an important role in a person's life, allowing them to broaden their horizons, communicate with people from other countries, enter a foreign culture and view the world from a new perspective [1].

Recently, a major scientific study was conducted by scientists from the University of London, which found that learning foreign languages helps to develop flexible and original thinking. This conclusion is based on the link between gray matter activity and knowledge of several languages, which has been scientifically confirmed. It is said that the number of languages you know determines your personality. That is, the more languages you learn, the better. Every language is an opportunity to open up new worlds and perspectives [2].

For example, English is the official language of international business, trade, the Internet, science, and the arts. It occupies 80% of the business language space. More and more often, we come across English in communication with colleagues and work partners, as well as in leisure situations. Knowledge of English is becoming a necessity when filling out questionnaires, writing resumes, and in business and private correspondence. It is taught in kindergartens, schools and universities, and there are numerous courses and trainings. In some countries, even math and other subjects are taught in English. But this does not diminish the importance of learning other foreign languages [3].

German is considered one of the key languages for international communication and is used in the fields of technology and finance. Over the past five years, the demand for German language skills has grown significantly, leading to an increase in the number of German partners and investors. Goods from Germany, such as furniture, electronics, and cars, are actively imported, which creates a need for specialists with the ability to communicate with these suppliers. Knowledge of German is also very useful in the offices of German banks, especially in European countries, where it is much more widely spoken than English.

Mastering a foreign language gives you the opportunity to learn more about and explore the history and culture of different countries and peoples. Knowledge of a foreign language can help you keep abreast of events in the world, expand your ability to communicate with different people, and learn about their culture, customs, values, and traditions. Knowledge of foreign languages significantly increases the chances of successful employment. Today, almost every employer expects job candidates to have at least a basic level of foreign language skills. Knowledge of foreign languages provides a significant competitive advantage over other applicants for any position. If you dream of success, you need not only to receive information, but also to be able to comprehend, analyze and draw conclusions on your own [4].

Life is unpredictable, so foreign language skills can come in handy at any time, especially if you intend to travel abroad. Among the key benefits of learning foreign languages, many Ukrainians pointed to the following factors: the possibility of employment abroad (57%), getting a better job in Ukraine (49%), the possibility of getting an education abroad (47%), the possibility of using the language at work (37%) or during a vacation abroad (31%). Therefore, learning a foreign language is a unique opportunity to travel the world freely, comfortably and confidently, without fear of being misunderstood [5].

At a meeting at the Ministry of Education and Science of Ukraine on the problems of teaching foreign languages in preschool education, it was stated that a promising way to provide the preschool education system with foreign language specialists is to train preschool teachers with the right to teach foreign languages. This leads to new tasks in the formation of preschool children's communicative competence, and also increases the demand of the pedagogical community for educational and methodological literature as a means of professional training of preschool teachers to teach children foreign languages from an early age. Important factors in this process are the level of their professional training, theoretical, methodological and practical skills, which directly affect preschoolers' interest in the language, level of language proficiency and general communicative competence.

At the current stage of development of the educational system of Ukraine, a number of requirements have been formulated for a teacher with the right to teach a foreign language:

1. must have in-depth knowledge in their field and be able to model the educational process to achieve its high efficiency;
2. must be creative;

3. must be familiar with rational methods of organizing training and implement them in practice of working with children;
4. use effective teaching methods and techniques to achieve the set goals.

In this regard, a modern teacher needs to be familiar with the main provisions of the state policy of Ukraine in the field of preschool education in general and foreign language teaching in particular. It is also important to have an understanding of the peculiarities of a child's personal development, his/her key areas of life, and especially the level of cognitive interests that determine the technology and specifics of teaching foreign languages in preschool institutions.

Future specialists who will teach a foreign language to preschool children should remember that due to the age characteristics of children of this age, characterized by increased mobility, it is important to use game methods that promote the child's natural development.

Recently, the number of hyperactive children with limited attention span has been increasing, which requires high professionalism from teachers. This implies a constant demonstration of ingenuity and associative thinking for the effective teaching of these children. The educational process with such children is more complicated than with high school students because of their peculiarities.

Learning a foreign language by preschoolers not only helps them master the basics of foreign language communication, but is also an effective means of development, education and personal formation of a child.

In today's world, where the Internet is available almost everywhere, the ability to communicate with people from all over the world is becoming more and more common. However, for such communication, it is necessary to have at least a basic knowledge of foreign languages. I believe that successful foreign language proficiency requires continuous learning and greater globalization in higher education. Learning foreign languages has a significant educational, upbringing, and developmental potential that helps students prepare for future challenges and is a key element in shaping an educated and developed personality.

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## ТЕХНОЛОГІЯ ЗАСТОСУВАННЯ РЕКРЕАЦІЙНО-ОЗДОРОВЧИХ ЗАСОБІВ ЯК СПОСОБУ ОЗДОРОВЛЕННЯ ОРГАНІЗМУ ЛЮДИНИ

Технології оздоровчо-рекреаційної рухової активності є сучасним способом оздоровлення організму людини, що постійно розвивається. Ця методика зайняла відповідну нішу у суспільстві завдяки доступним і простим способам виконання, наглядної корисної дії на суспільство, зростаючій популярності і соціальному визнанню. Представляє собою соціальне явище, головною ідеєю якого є використання різновіковими і соціальними групами населення доступних видів оздоровчо-рекреаційної рухової активності, невеликого ступеня сили, прийнятної об'єму навантаженості під час занять як в групі, так і поодинокі, з метою підвищення працездатності, поліпшення життя і захисту здоров'я. Варто відмітити, що в буденному житті, під час трудової діяльності, використовують різні види рухової активності, для збереження працездатності протягом робочого дня. Термін «Технології оздоровчо-рекреаційної рухової діяльності» об'єднує в собі дві складові: перша – процес використання засобів фізичного виховання в оздоровчих цілях; друга – наукова дисципліна, яка розробляє й удосконалює технології побудови фізкультурно-оздоровчого процесу, інакше кажучи – об'єднує теорію з практикою. Головною метою рекреаційно-оздоровчої рухової активності є протидія зростаючій серед народу гіподинамії. Гіподинамія – це спосіб життя, при якому людина фізично неактивна і мало або взагалі не виконує фізичної активності та фізичних вправ. Вона є ключовим фактором зростання хронічних хвороб та смертності населення. Значний резерв для вирішення цієї проблеми бачиться у раціональному використанні потенціалу оздоровчо-рекреаційної рухової активності для покращення показників фізичного стану, рівня здоров'я, якості життя, задоволення потреб людини в активному відпочинку, відновленні сил, розвазі та удосконаленні особистості у вільний час [1]. Аналіз практики розвитку рекреаційно-оздоровчої рухової активності запевняє, що фізична активність для захисту людського здоров'я та поліпшення якості життя має бути організованою, планомірною та безсумнівним буденним порядком реалізації для досягнення мети. Фактом є те, що недостатня рухова активність негативно впливає на здоров'я людини навіть на генетичному рівні, спричиняючи незадовільний обмін речовин. Таким чином, зростають випадки таких захворювань, як: рак молочної залози та товстої кишки, діабет, атеросклероз, ожиріння. Серед засобів рекреаційної активності є чимало видів діяльності. Коротко їх можна описати так: фізичні вправи (ранкова гімнастика, фітнес, йога, гімнастика); рухливі ігри (танці, атракціони, загальна фізична підготовка); малорухливі ігри (більярд, шахи, шашки, кульова стрільба); пасивні заняття в приміщенні (читання, TV, Інтернет, кіно, логічні ігри, театр, колекціонування); водні процедури (баня, душ, плавання); рекреаційний туризм (пішохідний, велосипедний, гірський, лижний, авто- і мототуризм); екскурсії (пішохідні, автобусні екскурсії); аматорські заняття на свіжому повітрі (садівництво і городництво, тваринництво, бджільництво, збір гербарію); рухливі заняття на воді (плавання, веслування, водні лижі, водний велосипед, вітрильний спорт, стрибки у воду); рибальство і мисливство; прогулянки; кліматолікування (інсоляція, повітряні ванни, сон на повітрі); бальнеотерапія (внутрішнє і зовнішнє застосування мінеральних вод, грязелікування) [2]. На основі аналізу літературних джерел визначено, що рух це результат скорочення скелетних м'язів, внаслідок чого здійснюється не лише переміщення окремих частин тіла в просторі, а й забезпечується адаптаційна, енергетична, нервова та обмінна функції організму людини. Рухова активність забезпечує збереження взаємозв'язку організму з навколишнім середовищем, нормальний ріст і розвиток організму людини, зміцнення здоров'я, нормальне функціонування внутрішніх органів і систем. Чітко регламентоване фізичне навантаження, яке задовольняє біологічну потребу в рухах і відповідає функціональним можливостям організму визначає оптимальний руховий режим [3]. Крім цього, рекреаційно-оздоровча рухова активність є

засобом розвитку сили м'язів. Вона включає силові вправи, які умовно можна розділити на три види, такі як: 1) вправи із зовнішнім опором (вправи з обтяженням, на тренажерах, вправи з опором партнера, вправи з опором зовнішнього середовища: біг в гору, по піску, у воді); 2) вправи з подоланням ваги власного тіла (гімнастичні силові вправи: віджимання в упорі лежачи, віджимання на брусах, підтягування; легкоатлетичні стрибкові вправи); 3) ізометричні вправи (вправи статичного характеру). Але серед них можна виділити ще три категорії, як найбільш поширені методи розвитку сили: 1. метод максимальних зусиль (вправи виконуються із застосуванням граничних або близьких до граничних обтяжень до 90% від максимально можливого; у серії виконується 1 – 3 повторень, за одне заняття виконується 5-6 серій, відпочинок між серіями 4-8 хвилин); 2. метод повторних зусиль (або метод "повністю") (вправи виконуються обтяженням до 70% від максимально можливого, які виконуються серіями до 12 повторень, в одному занятті виконується від 3 до 6 серій, відпочинок між серіями від 2 до 4 хвилин); 3. метод динамічних зусиль (вправи виконуються з обтяженням до 30% від максимально можливого, в серії виконується до 25 повторень, кількість серій за одне заняття від 3 до 6. Відпочинок між серіями від 2 до 4 хвилин) [4]. Оптимальною вважають таку міру навантажень, при якій мінімальні рухові активності і заняття фізичними вправами сприяють досягненню високого і довготривалого оздоровлюючого ефекту занять, забезпечуючи розсудливе використання вільного часу для всебічного розвитку особистості.

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### ПРОБЛЕМНІ МЕТОДИ НАВЧАННЯ ЯКІ ВИКОРИСТОВУЮТЬСЯ НА ЗАНЯТТЯХ З ІНОЗЕМНОЇ МОВИ У НЕМОВНИХ ВИЩИХ НАВЧАЛЬНИХ ЗАКЛАДАХ

*Стаття присвячена проблемним методам навчання які використовуються на заняттях з іноземної мови та на засіданнях лінгваклубу МНАУ. Дані проблемні методи впроваджуються з метою формування навичок усного та письмового спілкування іноземною мовою у побутовій сфері та професійній діяльності у здобувачів вищої освіти.*

**Ключові слова:** *проблемні методи навчання, побутова сфера та професійна діяльність, навички усного та письмового спілкування.*

*The article is devoted to the problematic teaching methods which are used at foreign language classes and at meetings of language club MNAU. These problem-based teaching methods are implemented with the aim of forming the skills of oral and written foreign language communication in the everyday sphere and professional activities of students.*

**Key words:** *problematic teaching methods, everyday life and professional activity, oral and written foreign language communication skills.*

#### 1. Метод аналізу конкретних ситуацій (case-study method).

Суть даного методу полягає у використанні в учбовому процесі описів конкретних ситуацій, проблем, умов з життя організацій, людей або окремих індивідумів, які орієнтують здобувачів вищої освіти на формулювання проблеми і пошук варіантів її вирішення з подальшим розбором на заняттях.

Даний метод використовується під час роботи з підручниками «English File» різних рівнів підготовки (а саме завдання в кінці кожного уроку «Practical English») [4].

Під час вивчення теми «На фірмі» магістрантам пропонується підготувати презентацію про власну компанію. Тема «Ділове відрядження» містить ситуативне завдання: «уявіть собі, що вам телефонує партнер із Англії, поспілкуйтесь з ним з приводу ваших спільних справ у бізнесі».

## **2. Метод професійної спрямованості змісту матеріалу на заняттях з іноземної мови.**

Даний метод передбачає організацію навчального процесу, що спрямований на вирішення завдань спілкування, пов'язаних з професійною орієнтацією студента. Цей принцип зумовлює залучення в навчання ситуацій і тем усного професійного спілкування, а саме «Майбутня професія».

Даний метод використовується під час роботи з методичними рекомендаціями підготовленими викладачами кафедри іноземних мов МНАУ [2, 3].

Тема «Моя майбутня спеціальність» передбачає підготовку магістрантами теоретичної інформації у формі презентацій та доповідей щодо підготовки фахівців аграрного профілю в іноземних країнах. А також практичне вміння спілкуватися іноземною мовою на теми, які стосуються безпосередньо майбутньої спеціальності.

Це відбувається під час вивчення таких тем:

- Plant Products;
- Animal Products;
- Soil;
- Seeds;
- Harvest;
- Storage;
- Cultivation and Planting Equipment and so on [1].

## **3. Метод «Круглого столу».**

Колективний обмін думками, спільний пошук істини за «круглим столом» визнається одним з ефективних методів навчання на старшому етапі навчання для реалізації завдань цієї концепції.

Використовується на аудиторних заняттях та на засіданнях Лінгвоклубу.

## **4. Метод функціональності.**

Даний метод передбачає пред'явлення матеріалу в моделях і мовленнєвих зразках, що характерні для різноманітних сфер спілкування і зумовлюють послідовність вивчення матеріалу.

Відбір та організація викладання матеріалу на заняттях з іноземної мови відбувається залежно від необхідності вираження здобувачами вищої освіти мовленнєвих функцій таких, як сумнів, похвали, підтвердження думки, відмови, впевненості тощо.

## **5. Комунікативний метод.**

Даний метод допомагає подолати мовний бар'єр, позбавляє людину від страху говорити іноземною мовою. На заняттях здобувачі вищої освіти мають можливість використовувати мову в реальних життєвих ситуаціях. Комунікативний метод розвиває всі мовленнєві навички: від усного і письмового мовлення до читання та аудіювання. Граматика вивчається в процесі спілкування, яке відбувається лише на іноземною мовою.

Даний метод використовується під час аудиторних занять за допомогою використання мультимедійних засобів навчання. А також використовується для підготовки магістрів під час вивчення тем «Ділове відрядження. Співбесіда» та «Влаштування на роботу».

## 6. Метод проєктів.

В основу методу покладено ідею, яка становить суть поняття «проєкт», він прагматично спрямований на результат, який досягається після розв'язання тієї чи іншої практично або теоретично значимої для студентської аудиторії проблеми.

Даний метод використовується під час вивчення тем «Ділова документація», наприклад, ситуативні завдання : «Складіть власне резюме, згідно з такими рубриками: OBJECTIVE, QUALIFICATIONS, EDUCATIONS, WORK HISTORY, PERSONAL. Напишіть заяву з проханням прийняти вас на роботу. При цьому скоротіть супровідний лист до мінімального розміру і зробіть його універсальним».

На кожному занятті іноземної мови використовуються інтерактивні методи: дискусії, прес – конференції та ін. Передусім здобувачі вищої освіти немовних ВНЗ проходять тренінг із відпрацювання навичок та культури ведення дискусії, вміння слухати й формувати свої висновки.

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## **APPLICATION OF ARTIFICIAL INTELLIGENCE IN PLANNING OR ANALYSIS AT THE ENTERPRISE (ЗАСТОСУВАННЯ ШТУЧНОГО ІНТЕЛЕКТУ У ПЛАНУВАННІ АБО АНАЛІЗІ НА ПІДПРИЄМСТВІ)**

*У дослідженні розглянуто сучасні тенденції використання штучного інтелекту в умовах організації аналізування та планування діяльності підприємства. Представлено умови та сфери застосування штучного інтелекту у бізнес-процесах компаній, коли відстежуються поступові зміни попиту та стратегічні можливості бізнес-моделей. Доведено, що можливості повномасштабного застосування штучного інтелекту на пряму пов'язано з автоматизацією збору та аналізу даних при прийнятті та реалізації рішень.*

**Ключові слова:** штучний інтелект, аналіз, планування, бізнес структури, автоматизація, управлінські рішення

*The study examines the current trends in the use of artificial intelligence in the context of the organization of analysis and planning of the enterprise's activities. The conditions and areas of application of artificial intelligence in the business processes of companies are presented when gradual changes in demand and strategic possibilities of business models are monitored. It has been proven that the possibilities of full-scale application of artificial intelligence are directly related to the automation of data collection and analysis when making and implementing decisions.*

**Key words:** *artificial intelligence, analysis, planning, business structures, automation, management solutions*

Modern business development in almost all spheres of the business world is directly linked to the spread of artificial intelligence. In turn, the introduction of new technologies encourages business structures to adapt to new projects and increase the productivity of business processes [1].

Artificial intelligence has been the focus of attention of scientists and practitioners since the 1950s. It can be represented as "the ability of a system to interpret external data appropriately, to gain knowledge from such data, and to use it to achieve specific goals and objectives in the form of flexible adaptation" [2]. Over time, due to both the availability of a large amount of data and the ability to improve algorithms and increase the power of computers, artificial intelligence has been fragmented and unbalanced in various industries. Today, AI-based systems are becoming more efficient thanks to the latest technological advances, more affordable in terms of financial investment and global application to solve business problems, and make strategic decisions faster and more successfully.

Most often, intelligent systems are used in unstructured environments to solve non-standard tasks, which reduces the degree of uncertainty in decision-making. Early studies show that artificial intelligence, by accumulating expert knowledge and operating organizational actions, was used as a support system. Modern results of using artificial intelligence demonstrate its value in its ability to autonomously analyze various types of data, access tacit knowledge, and analyze and create this new knowledge [3, 4].

Over the last decade, artificial intelligence has been actively implemented in business processes of companies. The areas of its use can vary: sales forecasting, when artificial intelligence can take into account both historical and real-time data, including internal and external, economic and environmental, microeconomic and macroeconomic data, etc; **pricing**, when algorithms search for the ideal price, determine the reaction of consumers to price changes in certain scenarios, and reduce consumer surplus; forecasting and defining a customer profile, using communication and sales triggers, to determine and evaluate, through dynamic profiling, which sales approach was most successful and what event it is associated with; **service** automation: neuro-linguistic programming algorithms help to reduce the risk of lost applications and poorly performed work; increase efficiency, staff productivity, reduce operational risks and optimize customer service; fraud detection: due to a systematic data-driven approach, manipulative chat patterns can be automatically recognized, such as frequency and time of posting, network of followers, content and tone; content creation: algorithms use interesting information based on publicly available Internet data to create texts in real time that are almost indistinguishable from texts written by humans; media planning: algorithm-based technology platforms collect a variety of relevant active and reactive data points for evaluation, which allows subjective and self-interested planning to be empirically verified; Conversational commerce - developments in the field of computer linguistics make it possible for customers to communicate with the company's systems both orally and in writing; customer feedback - classic market research uses extensive tools: focus groups, customer surveys, panels, etc. For a deeper understanding, the data obtained should be compared with other data, such as claims, sales, or customer satisfaction; recommendations - allow you to summarize personal recommendations of customers and create additional incentives for purchases. In addition, the software allows for more efficient integration of the workflow by developing instructions for staff, intelligent systems improve logistics processes and facilitate a quick response to certain problems.

Big data is often associated with the use of analytics, which consists of a variety of intelligent methods for identifying and predicting relationships. However, "the use of big data is not only a technical problem, but also requires the coordination of analytical capabilities of the company's strategy, and the comparison of all interconnected organizational and human resources." [5].

In the transition to a semi-automated management format, the growing degree of automation of data collection and analysis in decision-making and implementation is crucial. Data, analytics,

and artificial intelligence facilitate the creation and implementation of new business processes and models. Artificial intelligence allows us to track gradual changes in demand and simplify the transformation of strategic opportunities into business model elements. Studies at the intersection of artificial intelligence and strategic management show that traditional approaches to strategy development in the era of algorithm-based solutions are more original for the traditional business environment. Scientists attribute to artificial intelligence the potential to increase the diversity of organizational knowledge integrated into the strategy development process [1].

Based on the results of the above, it can be concluded that artificial intelligence contributes to effective, following the needs of business entities, use at various stages of the strategic process. It is about monitoring and analyzing the situation, developing the basis of strategies and plans, strategic choices and control. In the future, the possibilities for the full-scale application of artificial intelligence will increase significantly, covering the network interaction of all links in the technological cycle of the final product, the formalization of production processes and their mathematical description, as well as the creation of appropriate software algorithms.

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## THEORETICAL APPROACHES TO MANAGEMENT OF FIXED ASSETS OF THE ENTERPRISE (ТЕОРЕТИЧНІ ПІДХОДИ ДО УПРАВЛІННЯ ОСНОВНИМИ ЗАСОБАМИ ПІДПРИЄМСТВА)

*Theoretical approaches to the management of fixed assets in the context of increasing the efficiency of their use are investigated. It is determined that investments in fixed assets lead to an increase in production capacity and labour productivity. Strategies for improving the efficiency of the use of fixed assets and the factors affecting them are considered.*

**Key words:** fixed assets, management strategy, depreciation.

*Досліджено теоретичні підходи до управління основними засобами в контексті підвищення ефективності їх використання. Визначено, що інвестиції в основні засоби призводять до збільшення виробничих потужностей та продуктивності праці. Розглянуто стратегії підвищення ефективності використання основних засобів, та фактори, що впливають на них.*

**Ключові слова:** основні засоби, стратегія управління, амортизація, виробничі потужності

The relevance of this topic is that fixed assets are important resources for any enterprise that allow you to ensure the production of products or the provision of services. Increasing competition in the market, increasing consumer requirements for the quality of products and services, as well as increasing the cost of energy and resources, force enterprises to focus on increasing the efficiency of the use of their fixed assets. In addition, technological progress and the introduction of new technologies allow enterprises to reduce production and maintenance costs, as well as improve the quality and productivity of work.

For the successful functioning of any enterprise, effective management of fixed assets is necessary. Through the rational use of fixed assets, the enterprise can increase production volumes, reduce costs, etc.

When managing fixed assets, the following management approaches are used: functional, process, strategic, system, situational, and integrated [1].

Fixed assets are important components of the country's economic infrastructure, which provides reliable and sustainable support for production and investment. Fixed assets are an integral part of the assets of the enterprise and reflect its capacity and potential for production. Since the cost of fixed assets is high, their use requires significant costs for their acquisition and maintenance. Therefore, it is important to effectively manage these resources and ensure maximum use to achieve maximum profitability of the enterprise. The cost of fixed assets is an important indicator for manufacturing enterprises because it reflects financial investments in the equipment and infrastructure of the enterprise. In addition, the cost of fixed assets is an element for calculating various economic indicators, such as depreciation, profitability, gross domestic product and others. The volume of fixed assets affects the production capacity and the level of technical support for labour. Due to the limited service life, the cost of fixed assets should be distributed to expenses throughout all years of their operation. The two main reasons for the limited life of fixed assets are physical and moral depreciation. Physical depreciation is understood as a gradual loss by fixed assets of their original value, which occurs not only in the process of their functioning but also with their inaction. Physical wear occurs unevenly even on the same elements of fixed assets. Moral depreciation is a decrease in the cost of fixed assets under the influence of reducing socially necessary costs for their restoration or as a result of the introduction of new, more progressive economically profitable fixed assets. Under the influence of these forms of moral wear and tear, fixed assets become backward in their technical characteristics and economic efficiency.

Full and rational use of fixed assets contributes to improving the financial and economic indicators of the enterprise: increasing labour productivity, increasing stock yield, increasing output, reducing its cost, and saving capital investments [2].

Improving the efficiency of enterprise assets can be critical to the long-term success of an enterprise. There are several strategies for improving the efficiency of the use of fixed assets, such as: conducting a detailed financial analysis, setting financial goals, increasing the efficiency of operating activities, investing in new equipment, prioritizing investment projects and implementing savings measures.

The efficiency of the use of fixed assets depends on several factors, such as the cost of fixed assets, the duration of their service, technical conditions, depreciation, etc. Therefore, it is important to have the proper technical condition, use the latest technologies, and properly plan and maintain fixed assets. Also, the company must quickly adapt to new conditions, and therefore, fixed assets must be ready for the new realities of the present. In all cases, the efficiency of the use of fixed assets is determined by how well they support and ensure the functioning of the enterprise.

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## MOBILITÄT UND INTERNATIONALISIERUNG IM BILDUNGSBEREICH DER SCHWEIZ

*The article discusses mobility and internationalization in education. Liechtenstein does not have national mobility programs. The small state participates in Swiss and EU programs.*

**Key words:** mobility, internationalization, education

Liechtenstein ist nicht Mitglied der Europäischen Union, gehört jedoch zum Europäischen Wirtschaftsraum (EWR) und zur Europäischen Freihandelsassoziation (EFTA).

Da Liechtenstein aufgrund seiner geringen Größe kein umfassendes Bildungs- und Schulsystem auf allen Ebenen bieten kann, sind Vereinbarungen und Kooperationen mit den Nachbarländern Grundbedürfnisse und Notwendigkeiten für den kleinen Staat. Rund 90 % der Hochschulstudenten studieren im Ausland hauptsächlich in der Schweiz (Interkantonaler Hochschulvertrag) und Österreich (Abkommen zwischen dem Fürstentum Liechtenstein und der Republik Österreich über Äquivalenzen im Bereich Sekundarschulabschluss und Hochschulabschluss)

Abkommen zur Gewährleistung des Zugangs zu Bildungsprogrammen in den Nachbarländern sowie zur Anerkennung von Qualifikationen sind daher für Liechtenstein von großer Bedeutung. Dazu gehört auch ein flexibles Zuschusssystem.

Durch das EFTA-Abkommen bestehen enge Beziehungen zu Island und Norwegen. Die wichtigsten Partner aufgrund geografischer Belange, gemeinsamer Sprache und einer traditionell engen Partnerschaft sind die Schweiz und Österreich. Bereits auf Primar- und Sekundarstufe gibt es Vereinbarungen im Bereich der Sonderschulen und Internate (z. B. Sportinternat) mit diesen beiden Ländern.

Abkommen mit der Schweiz:

- Zusammenarbeit durch die Schweizerische Bildungsministerkonferenz (EDK) und deren Regionalkonferenzen und mehrere Ausschüsse.
- Beteiligung an den interkantonalen und regionalen Finanzierungs- und Mobilitätsabkommen: Diese Vereinbarungen ermöglichen den gleichberechtigten Zugang zu Bildungseinrichtungen in der Schweiz und steuern den Lastenausgleich.
- Finanzielle Beteiligung an Bildungseinrichtungen (ISHE, NTB, HfH, BzB).
- Beteiligung an der Schweizerischen Nationalstiftung.
- Seit 1974 und 1978 gibt es Abkommen mit der Schweiz, die die Anerkennung von Bachalaureat-Diplomen verwalten, die die erforderlichen Schweizer Kriterien und die Zulassung zu allgemeinen und professionellen Schulen erfüllen.

Abkommen mit Österreich:

- Einigung über die gegenseitige Anerkennung bestimmter Qualifikationen
- Teilnahme am Österreichischen Wissenschaftsfond
- Organisation eines liechtensteinischen Forschungspreises an der Universität Innsbruck

Liechtenstein hat keine nationalen Mobilitätsprogramme. Der kleine Staat beteiligt sich an Schweizer Programmen und – über die EWR-Mitgliedschaft seit 1995 – an EU-Programmen. Die EU-Bildungsprogramme werden seit ihrer Gründung im Jahr 2007 durch die *Agentur für*



*Internationale Bildungsangelegenheiten* (AIBA) організовано. Для молодіжних програм це тим більше, оскільки національний Агентур АНА відповідальний.

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- Планування міжнародних активностей в освітній області
- Впровадження і моніторинг національних, регіональних і міжнародних програм для сприяння міжнародній мобільності і співпраці в освітній області
- Інформація і консултинг для окремих осіб і установ через національні співпраці, освітні проекти і -програми
- Сприяння для фахових знань, набуття соціальних ключових компетенцій, міжкультурної компетенції і мовних знань через використання міжнародних мереж
- Створення прозорості при визнанні кваліфікацій

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#### **Література:**

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4. Швейцарський національний фонд <https://www.snf.ch/de>

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### **ГЕНДЕРНА РІВНІСТЬ У НАВЧАННІ ТА ПІДГОТОВЦІ ВІЙСЬКОВОСЛУЖБОВЦІВ**

Гендерна нерівність – це проблема, яка існує з часів зародження людства, та особливої уваги набула у 21 столітті. Питання гендерної рівності є темою для дослідження в політичній, освітній чи інших сферах діяльності людини. Такі події в Україні як Революція гідності чи повномасштабне вторгнення росії демонструють, що необхідно викорінювати гендерні стереотипи та інтегрувати гендерну перспективу в діяльність Збройних Сил України (далі ЗСУ).

Політика держави стосовно даного питання вже давно займається та утверджує гендерну рівність ЗСУ відповідно до міжнародних зобов'язань та національного законодавства.

Ратифіковано багато міжнародних документів та створено закон України «Про забезпечення рівних прав та можливостей жінок і чоловіків», де говориться про те, що жінки мають право проходити військову службу на рівних засадах із чоловіками, займати військові посади та отримувати військові звання. Жінки на рівних умовах проходитимуть повсякденну військову службу, починаючи від подових нарядів і закінчуючи проходженням військових зборів [1].

За даними, оприлюдненими заступником Міністра оборони України з євроінтеграції Ігорем Долговим на Міжнародному Форумі «Партнерство парламенту, уряду та громадянського суспільства» – для виконання національного плану дій «Жінки, мир,

безпека», у Збройних Силах України проходять військову службу і працюють майже 50 тисяч жінок, що становить п'яту частину від загальної кількості всього особового складу [2].

Тому, зазначаючи що частка жінок у військових формуваннях є досить великою, то цілком зрозуміло що актуалізація теми гендерної рівності у галузі безпеки і оборони є значимим.

Над проблемою рівності жінок і чоловіків працюють багато вчених, політиків та інших людей, тому для того щоб уникнути гендерної дискримінації у військовій службі потрібно виокремити основні проблеми гендерної нерівності у цій галузі.

По-перше, однією з найголовніших проблем є застарілі традиції та уявлення про роль і місце жінки у суспільстві, це проявляється в обмеженості жінок у військових професіях та посадах. На сьогодні, кількість жінок які займають посаду генерала чи полковника дуже мала, більшість військових професій які опановують жінки це медсестринство чи рядовий та сержантський склад.

По-друге, більшість жінок мають проблему з можливістю приймати рішення у ЗСУ, чимало з жінок не оформлені офіційно, і, фактично не отримують відповідну оплату за свою роботу.

По-третє, невидимість жінок-військовослужбовців у медіа просторі, адже більшість українських медіа розповідають про героїв-чоловіків. Інфраструктура ЗСУ влаштована в більшості для потреб чоловіків.

Збройні сили України мають розроблену гендерну політику, яка відповідає загальнодержавній гендерній політиці та передбачає забезпечення ефективного впровадження гендерного підходу у життєдіяльність війська для створення гарантій рівних прав та можливостей людини незалежно від її статі. Однак, виникає проблема із сталістю механізмів і реалістичністю упровадження заявленої політики рівних прав і можливостей жінок і чоловіків [3].

З початком військового конфлікту на сході України та повномасштабним вторгненням, спонукає державу ретельніше ставитися до питання рівності чоловіків та жінок у Збройних Силах України і надає жінкам служити на передовій на рівні з чоловіками.

Жінки - це не лише соціально-демографічна група суспільства, вони виступають військово-професійною групою, яка потребує особливої уваги у сфері оборони. Світ змінюється, а з ним змінюються всі звичні для нас стандарти. Кількість жінок у ЗСУ з кожним днем збільшується, на це впливають багато факторів. Саме тому держава повинна підлаштовуватися під вимоги сьогодення та розвиватися, вона повинна виступати гарантом рівноправ'я та впроваджувати дієві механізми гендерної рівності та стандартів.

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## ПІДВИЩЕННЯ РІВНЯ КОМУНІКАТИВНОЇ КОМПЕТЕНТНОСТІ ЗДОБУВАЧІВ ВИЩОЇ ОСВІТИ НА ЗАНЯТТЯХ З ІНОЗЕМНОЇ МОВИ

*В статті проаналізовано методи підвищення рівня комунікативної компетентності здобувачів вищої освіти на заняттях з іноземної мови. Дослідження базується на системному методі, порівняльному аналізі та абстрагуванні. У результатах дослідження виявлено проблему формування комунікативної компетентності в сучасних умовах навчання. Розглянуто питання сучасної методики підвищення рівня комунікативної компетентності здобувачів вищої освіти на заняттях з іноземної мови. У висновках відзначено ефективність онлайн-платформ (Puzzle-English, Skyeng, Duolingo, Lingualeo тощо) та важливість змістовної роботи на заняттях іноземної мови.*

**Ключові слова:** онлайн-платформи, іноземні мови, комунікативна компетентність, дистанційне навчання.

У своїй професійній діяльності сучасний фахівець будь-якої спеціальності стає активним учасником спілкування. Розвиток комунікаційної компетентності є актуальною вимогою конкурентоспроможності на ринку праці та використання власних переваг. Набуття та розвиток відповідної компетенції включає не лише загальне оволодіння граматичними структурами іноземних мов, продуктивну роботу з їх вивчення, а й розвиток живого мовлення з урахуванням сучасної цифровізації, інформаційних технологій, сленгу, особливих зразків мовлення тощо. Ця проблема потребує більшої уваги з огляду на необхідність розвитку soft skills у студентів вищої освіти. Варто також враховувати необхідність зміни педагогічних парадигм, які мають перенести акцент у навчанні з простого запам'ятовування слів, правил, конструкцій на творче оволодіння розмовною мовою, уміння грамотно і коректно висловлювати свої думки, вміння спокійно та впевнено спілкуватися.

Дослідники Ahnagari & Zamanian (2014) охарактеризували особливості розвитку міжкультурної компетентності, представили аналіз різних точок зору на трансформацію міжкультурної компетенції в аудиторіях з англійської як іноземної. У той же час досліджено ключові аспекти розвитку міжкультурної комунікативної компетенції, яка є ключовим елементом навчання іноземної мови, підвищує потребу в адаптації форм і методів навчання для підвищення полікультурної обізнаності студентів. Костиця та ін. (2022) вважають, що навички міжкультурного спілкування є міжнародним інструментом розвитку англійських комунікативних компетенцій.

Дистанційне навчання іноземних мов стає все більш популярним серед тих, хто хоче вивчати іноземну мову, але не має можливості чи бажання відвідувати аудиторні заняття. Цей метод навчання дозволяє студентам вивчати мову на відстані за допомогою інформаційно-комунікаційних технологій та Інтернету. На думку дослідників, дистанційне навчання іноземних мов – це процес вивчення іноземної мови за допомогою Інтернету, відеоконференцій, спеціальних навчальних платформ та інших електронних засобів спілкування.

Дистанційне навчання іноземних мов може бути різноманітним: від самостійного навчання на спеціальних сайтах до віртуальних занять з викладачем, які проводяться за допомогою веб-камери та інших електронних засобів зв'язку. Дистанційне навчання іноземних мов також може бути більш доступним для студентів з різним рівнем знань. Однак є і деякі недоліки. Студенти вищих навчальних закладів можуть відчувати брак взаємодії з іншими студентами та викладачами. Тому навички спілкування, які в сучасному світі є надто важливими, щоб ними нехтувати, можуть опинитися під загрозою. Комунікативна компетентність – це повний набір комунікативних та організаційних навичок, включаючи самовираження, здатність аргументувати власну точку зору та вміння задавати запитання –

найвищий рівень комунікативної компетентності. Показниками рівня міжособистісної взаємодії є емпатія (здатність розуміти внутрішній світ інших), самоконтроль, вербальна та невербальна культура спілкування. Зміна, яка зараз відбувається в контексті дистанційного навчання, є викликом не лише для студентів вищих навчальних закладів, а й для викладачів. Особливості дистанційного навчання, такі як об'єктивність спілкування, тривале перебування перед монітором, занурення у віртуальне середовище, вимагають від студентів і викладачів самотивації до навчання та самодисципліни.

Розвинена професійна мотивація є найважливішим фактором формування мотивації навчальної діяльності майбутніх спеціалістів різних галузей. Доцільно розглядати питання формування мотиваційної основи розвитку компетентності в області вивчення іноземних мов з точки зору ролі професійної мотивації у формуванні мотивації навчання, оскільки іншомовна компетентність трактується в контексті професіоналізму фахівця [1].

З метою формування комунікативної компетентності у здобувачів вищої освіти на заняттях з іноземної мови пропонується запровадити окремі прийоми використання інтерактивних технологій як інноваційних методів професійного розвитку майбутніх спеціалістів. Формування методів інтерактивних технологій організації навчання орієнтоване на інноваційні засоби та їх активне впровадження в системі ВНЗ. Це відповідає пріоритетним напрямкам гармонізації української освітньої системи з вимогами провідних освітніх систем, тобто використання інноваційних методик корелює із сучасними суспільними запитами та потребами майбутніх фахівців.

Інноваційна спрямованість освітніх процесів спрямована на створення якісних і кількісних змін у діяльності суб'єктів навчання, що призводить до забезпечення відповідності цілей, завдань і загального змісту освіти актуальним вимогам і потребам майбутніх спеціалістів, розвитку в них навичок професійної діяльності та соціальної мобільності, створення можливостей для якісної співпраці з використанням іноземних мов, впровадження новітніх наукових досягнень у педагогічну практику, що також сприятиме забезпеченню якісної іншомовної компетенції.

Інноваційний напрямок сучасного освітнього процесу базується на певних формах організації навчання. У сучасних умовах особливої актуальності набувають демократичні форми взаємодії учасників освітнього процесу, спрямовані на рівноправну участь суб'єктів освіти на всіх етапах формування іншомовної комунікативної компетенції. Не менш важливими є інтерактивні форми, засновані на безпосередній активній взаємодії здобувачів вищої освіти під час аудиторної та позааудиторної роботи. Онлайн-платформи особливо ефективні для розвитку комунікативної компетентності. Зокрема, канали Futurelearn, Puzzle-English, Skyeng та YouTube допомагають вивчати нові слова, повторювати складні конструкції та переглядати їх у живому спілкуванні. Платформа Duolingo також є зручним додатком для самостійного вивчення іноземних мов, зокрема для початківців, які хочуть зрозуміти базову лексико-граматичну структуру мови.

Загалом найбільш актуальними є декілька шляхів підвищення комунікативної компетенції на заняттях з іноземної мови. Насамперед йдеться про закріплення практики усного мовлення, читання та аудіювання, користування Інтернет-ресурсами, обов'язкове та регулярне відвідування занять, активну роботу над помилками, щоб уникнути їх у майбутньому. Вивчення іноземних мов має великий потенціал для розвитку особистості. Добре володіння іноземною мовою дозволяє майбутнім фахівцям ефективно здійснювати професійну діяльність у своїй сфері, що значно підвищить їх рівень мовної підготовки.

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## INNOVATIVE TRAINING METHODS USED DURING FOREIGN LANGUAGE CLASSES IN NON-PHILOLOGICAL HIGH SCHOOLS OF UKRAINE

*The article describes and analyzes the most effective innovative teaching methods used during foreign language classes in non-philological higher education institutions.*

**Key words:** contextual training, simulation training, problem-based training, full assimilation of knowledge, modular training, distance training.

Modern trends in Ukraine's language education are determined by the process of Europe unification, its spread to the East, which is accompanied by the formation of a common educational and scientific space, and the need to develop uniform criteria and standards on the scale of the entire continent. Language education in Ukraine is also being reformed taking into account the main achievements of European countries in this field. The ideas of the language policy of the Council of Europe are increasingly being implemented in Ukraine: the number of languages studied is increasing; the number of people who speak at least one foreign language is increasing; the study of several foreign languages has been started in secondary educational institutions; the attitude towards the study of foreign languages in higher educational institutions of a non-philological profile is radically changing [2].

The Law of Ukraine "On Higher Education" among the main tasks of higher educational institutions envisages "ensuring an organic combination of educational, scientific and innovative activities in the educational process" [5]. In addition, the modern socio-economic development of society requires the use of new innovative methods and technologies of training students of higher education in non-language higher educational institutions, which will allow future specialists to be more competitive in the labor market [8].

Research on innovative teaching methods in higher education belongs to many foreign and Ukrainian scientists: A. M. Aleksyuk [1], I. I. Dobroskok, V. P. Kotsura, S. O. Nikitchina [3], P. Yu Saukh [6], M. V. Lysenko [4] and others. Their analysis and implementation in the educational process do not lose their relevance even today.

We consider the most effective innovative teaching methods used in foreign language classes in non-linguistic higher education institutions to be: contextual training, simulation training, problem-based training, full assimilation of knowledge, modular and distance training [8].

Contextual training is based on the integration of various activities of higher education students: educational, scientific and practical. During such training, conditions close to real ones are created, the content of training is involved in the context of solving important tasks of professional activity.

The basis of simulation training is simulation and game modeling in the conditions of training of processes occurring in a real system. The essence of this technology is to prepare students of higher education to solve specific problems in a group. After all, the usual form of education is the interaction between the teacher and the student only, and this method helps to

develop the personality in the process of working with the team. During a fruitful discussion, the problem of discussion is a significant element in the process of assimilation of information [7].

Problem training is based on a personal and activity approach to the organization of the learning process. It is carried out on the basis of the initiation of an independent search for knowledge by the student of higher education through problematization (by the teacher) of the educational material. Problem-based training includes such areas as case studies, role-playing games, and simulations. The structure of a class with elements of problem-based training consists of a sequence of learning problems created by the teacher. The task of the teacher is to listen to different points of view, to coordinate the direction of thinking of the applicants using a system of questions, to correct mistakes, to help in working with various sources of information.

Modular training is a type of programmed training, the essence of which is that the content of the training material is rigidly structured with the aim of assimilating it as fully as possible, accompanied by mandatory blocks of exercises and monitoring of each fragment.

The full assimilation of knowledge is based on the need to make learning outcomes fixed, while optimally changing the parameters of learning conditions depending on the abilities of higher education seekers.

Distance training is considered a type of correspondence education based on the use of the latest information and communication technologies and tools. It provides wide access to educational resources, the extremely mediated role of the teacher and the independent and autonomous role of the student of higher education [9]. With the introduction of distance training, many universities are already using online seminar technology called “webinar”, which shows comparative tables, presentations, videos, etc. With the help of Internet technologies, the webinar preserved the main feature of the seminar – interactivity, which provides simulation of the functions of the speaker and the listener, who will work interactively, communicating together according to the scenario of holding such a seminar [10].

Therefore, the use of innovative teaching methods in foreign language classes in higher educational institutions of a non-philological orientation contributes to the formation of future specialists who are competitive in the labor market both in our country and abroad.

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УДК 811.111

Самарська С. А

### IS SIWA318H OUR SALVATION FROM CANCER? (SIWA318H – НАШЕ СПАСІННЯ ВІД РАКУ?)

*У публікації порушено питання лікування раку та застосування експериментального антитіла SIWA318H в боротьбі з раком підшлункової залози.*

**Ключові слова:** рак, онкологічні захворювання, антитіло, клітини.

*The publication raises the issue of cancer treatment and the use of the experimental antibody SIWA318H in the fight against pancreatic cancer.*

**Key words:** cancer, oncological diseases, antibody, cells.

Oncological diseases, or cancer, still remain one of the biggest threats to human health around the world. Malignant tumors can occur in various organs and systems. Their detection and treatment is a serious challenge for modern medicine.

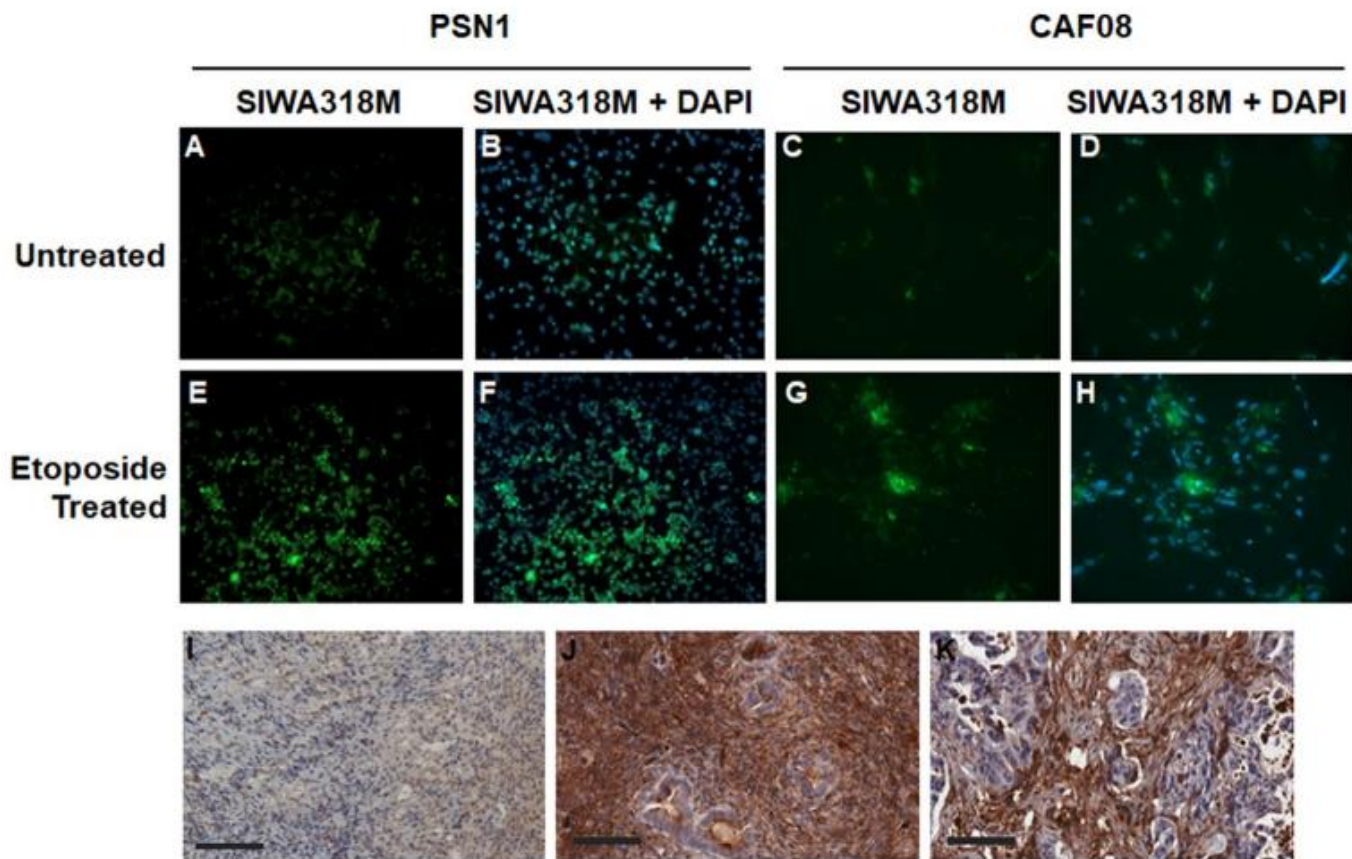
According to the WHO (World Health Organization), in 2022 the following were found in the world:

- almost 20 million new cases of oncological diseases;
- 9.7 million deaths due to this disease;
- 53.5 million people who were able to live 5 years after diagnosis;
- 2.5 million new cases of lung cancer;
- 2.3 million new breast cancer patients;
- 1.9 million new cases of colorectal cancer;
- 1.8 million deaths from lung cancer;
- 900,000 deaths from colorectal cancer [1].

SIWA318H is a novel monoclonal antibody that selectively targets an advanced glycation end product biomarker found in damaged/dysfunctional cells exhibiting (a) aerobic glycolysis, and (b) oxidative stress. Cells with this biomarker are dysfunctional and are associated with stresses and/or damages relating to aging, cancer and other disease processes. SIWA318H binds to pancreatic cancer cells and cancer-associated fibroblasts, as well as tumor xenografts derived from pancreatic cancer patients. Furthermore, SIWA318H induced significant antibody-dependent cell-mediated cytotoxicity (ADCC) against pancreatic cancer cells. In a humanized CD34+ NSG mouse xenograft model for pancreatic cancer, tumors in mice treated with SIWA318H grew significantly slower compared to those in control mice ( $p < 0.001$ ). After 3 weeks of treatment with SIWA318H, the tumor growth was suppressed by 68.8% and 61.5% for the high and low dose regimens, respectively, when compared to the isotype antibody control (ANOVA  $p < 0.002$ ). Moreover, a significant increase in complete remission (CR) rate was observed in mice receiving the high dose (60%,  $p < 0.04$ ) or low dose (77.8%,  $p < 0.02$ ) of SIWA318H treatment compared with control mice (6.7%). Immunohistochemical analyses of the tumor tissues showed a significant decrease in senescent cells in the tumor microenvironment of SIWA318H treated mice compared to that of control treated mice ( $p < 0.05$ ). These results provide compelling evidence that SIWA318H is a promising novel therapeutic against pancreatic cancer [2].

***SIWA318 binds to senescent pancreatic cancer cells and cancer associated fibroblasts.***

To investigate the reactivity of SIWA318M (the murine equivalent of SIWA318H) towards pancreatic cancer cells and stromal fibroblasts, we performed immunofluorescence staining of the antibody in PSN1 (pancreatic cancer cells) and CAF08 (pancreatic cancer-associated fibroblasts) cells with or without the treatment of etoposide, a topoisomerase inhibitor known to induce cellular senescence. As shown in Fig. 1, without etoposide treatment, SIWA318M showed moderate



reactivity to a small number of the cells (Fig. 1A–D). With etoposide treatment, the immunofluorescence intensity and percent of cells stained positive were increased considerably (Fig. 1 E–H), which is consistent with the induction of senescence by etoposide [3].

**Figure 1.** SIWA318M and SIWA318H react with pancreatic cancer cells and cancer associated fibroblasts. Immunofluorescence staining was used to detect the binding of SIWA318M to pancreatic cancer cells (PSN1) and pancreatic cancer-associated fibroblasts (CAF08) untreated (A–D) or treated (E–H) with etoposide. IHC staining was used to detect the binding of SIWA318H to the PSN1 xenograft tumor (I) and two pancreatic cancer patient derived xenograft tumors (J,K). Scale bar in (I–K)=100  $\mu$ m. DAPI: 4',6-diamidino-2- phenylindole.

To further verify the reactivity of SIWA318H towards pancreatic tumors, we performed immunochemical staining with SIWA318H in a PSN1 xenograft tumor and two pancreatic cancer PDX tumors. As can be seen in **Fig. 1 I**, the PSN1 tumor cells showed moderate reactivity to SIWA318H, similar to PSN1 cells grown in vitro. In both PDX tumors, the stromal cells showed intense reactivity whereas the tumor cells showed relatively weak and patchy staining (Fig. 1J,K), indicating that in patient tumors the majority of the senescent cells are in the stroma compartment. SIWA318H mainly showed membranous and cytoplasmic staining with occasional nuclear staining in the PDX tumors whereas in the PSN1 tumors the staining intensity in cytoplasm/nuclei was much stronger than that on cell surface, which is again consistent with the cultured PSN1 cells in vitro. The difference in the staining pattern between PDX tumors and the PSN1 tumor is probably due to the difference in stromal content between the two tumor types (PDX tumors have a much higher stroma content than the PSN1 tumor).



Therapeutic antibodies have been shown to interact with the immune activating Fcγ receptor, FcγRIIIa, and induce antibody-dependent cell-mediated cytotoxicity (ADCC) in solid tumors. To determine the binding affinity of SIWA318H towards FcγRIIIa we performed an FcγRIIIa binding immunoassay. SIWA318H binds to human FcγRIIIa at an affinity similar to that of the positive control antibody (antiCML monoclonal antibody, R&D Systems) (EC<sub>50</sub>: 59 vs. 13 μg/mL). Consistent with its binding activity towards FcγRIIIa, SIWA318H demonstrated a concentration dependent cytotoxicity against PSN1 cells in an ADCC.

Treatment of PSN1 cells with etoposide further increased the ADCC activity, consistent with the finding that SIWA318H binds to senescent cells at a greater affinity [4].

Therefore, biotechnology experiments help us to obtain new possible cures for cancer. However, this problem remains relevant to this day, because universal drugs do not yet exist. So, it is necessary for everyone to undergo a full examination of the body once a year, in order to prevent the formation and spread of oncological diseases.

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### THE SOCIAL SIGNIFICANCE OF FOREIGN LANGUAGE KNOWLEDGE FOR A MODERN BUSINESS MANAGER

*Проаналізовано проблему соціального значення знань іноземних мов для сучасного керівника підприємства. Висвітлено соціально-культурне значення іноземної мови у сучасному світі. Обґрунтовано чинники соціального значення знань іноземної мови для сучасного менеджера.*

**Ключові слова:** іноземна мова, менеджер, міжнародні зв'язки, культура, бізнес, комунікація, ефективність, керівник, інтелектуальний потенціал, кваліфікація.

*The article analyses the problem of social significance of knowledge of foreign languages for a modern enterprise manager. The socio-cultural significance of a foreign language in the modern world is highlighted. The factors of social significance of foreign language knowledge for a modern manager are substantiated.*

**Key words:** foreign language, manager, international relations, culture, business, communication, efficiency, manager, intellectual potential, qualification.

Foreign language skills play an important role in the development of a modern, highly qualified manager. For managers with a university degree, knowledge of a foreign language is not

just a means of obtaining information from original sources, but also a tool for professional communication that has a pragmatic effect. In the course of their work, managers have to communicate with colleagues from other countries, learn about their methods and techniques, and share their experience. It is clear that learning foreign languages opens up access to many opportunities that are essential in the modern world [1].

Foreign languages play a special role in the activities of a manager capable of cooperation in both European and global society. It is the knowledge of foreign languages that makes it possible to communicate in all spheres of life with representatives of other countries and to conduct a dialogue of cultures.

The social and cultural significance of a foreign language is extremely important, especially in this period of socio-economic and political development of our country, when its place and role in the international arena is being determined. All this has led to a rethinking of the role of a foreign language as an important and necessary means of intercultural communication. Therefore, a foreign language is becoming increasingly recognised as a socio-economic and political mechanism of mutual understanding between representatives of the world community in various spheres of their daily lives.

The social significance of foreign language knowledge for a modern manager can be explained by several factors:

- In the last decade, international relations between Ukraine and the countries of the European Community, between Ukrainian and foreign firms, enterprises and organisations in various fields of activity have begun to develop intensively;
- direct ties between Ukrainian and foreign enterprises are expanding;
- the modern world has become more multinational and multilingual: on the one hand, the process of globalisation and economic competition is intensifying, and on the other hand, the role of national mentality is growing;
- the situation on the labour market is indicative: almost everywhere specialists are needed who know how to work with computers and know at least one foreign language;
- our society has become more mobile: holidays, study and even employment abroad are becoming a reality.

In today's world, learning foreign languages is one of the most important components of a modern person's success. Mastering at least one foreign language broadens your cultural horizons and helps you learn about the customs of other nations. Everyone wants to be successful and happy in business, and in this case, knowledge of a foreign language can help a lot. Firstly, it provides additional knowledge, and secondly, employers are more willing to welcome specialists who speak a foreign language. However, the main thing is the opportunity to immerse yourself in a mysterious and unknown world, as well as to interact with people with different worldviews and mentality. In general, English is considered to be an international medium of communication, and it is expected that in a few years a quarter of the world's population will be proficient in it.

For a modern manager, communication is of great importance. Communication in management is the exchange of information, as a result of which the manager receives the information necessary to make effective decisions and communicates them to employees. If communication is not established properly, decisions may be made incorrectly and employees may misunderstand what the manager expects of them, which in turn can lead to deterioration of relationships between people. The effectiveness of communication often determines the quality of decisions made and how they will be implemented in practice [2].

Research and long-standing practice show that only one third of the efficiency of a national economy depends on material production resources. The rest depends on the human factor, such as the intellectual potential, qualifications and abilities of managers and specialists.

General requirements for managers are defined in labour laws, internal regulations and other documents, while special requirements are contained in qualification guides, job descriptions and regulations. However, these requirements should be specified with regard to the specific position and the conditions in which the manager works [3].

Theoretical training and practical work experience are prerequisites for a manager to have: the art of leadership, people skills; political culture; a comprehensive systematic approach to work; the ability to generate ideas and transform them into practical action; creative imagination, modern economic thinking; computer literacy; the right work lifestyle, communication culture; foreign languages, especially English [4].

Consequently, foreign language proficiency is not just a fashion trend, but a vital necessity for a modern manager. It is the key to a successful career, competitiveness in the labour market, access to information and understanding of the cultural characteristics of other countries. Knowledge of a foreign language enables managers not only to build a successful career but also to contribute to solving Ukraine's problems.

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Тішечкіна К.В.

## LINGUISTIC CONJECTURE AS A CONSTITUENT COMPONENT OF A POTENTIAL DICTIONARY

*У роботі розкрито зміст поняття "мовна здогадка" та проведено ретельний аналіз можливостей її використання на заняттях іноземної мови. Встановлено ступені труднощів у розвитку здогадки та розглянуто типи завдань для її формування.*

**Ключові слова:** мовна здогадка, словниковий запас, семантика, контекст.

*The scientific work considered the meaning of the concept of "linguistic conjecture" and carried out a thorough analysis of the possibilities of its use in foreign language classes. The degrees of difficulty in the development of a guess are established and the types of tasks for its formation are considered.*

**Key words:** linguistic conjecture, vocabulary, semantics, context.

In the methodology of teaching foreign languages, the term "linguistic conjecture" is widely used. It develops on the basis of active vocabulary and potential vocabulary, is not determined by a logical conclusion about the meaning, is the result of a heuristic search based on the semantic context and structural-semantic features of lexical units.

Guessing is an active mental process, because it is based on the construction of meaningful conditional connections. Such intellectual activity is supported by the interest of students, the desire to overcome the difficulties presented in the text by unstudied linguistic phenomena, the presence of which significantly complicates the understanding of the content. To correctly pose the conjecture

problem, it is first necessary to separate conjecture from direct deduction. The possibility of direct derivation is correlated with the potential vocabulary, the ways of expanding which depend on the nature of the derivation. It is based on regular semanticization, when it is possible to rely on familiar elements of the structure of sound or writing. The conjecture is not conditioned by a logical deduction.

Every guess is just a hypothesis that is subject to critical testing. A guess occurs when there is a break in the semantic chain. However, guessing must be specially taught, and the learning process itself develops, in turn, a sense of admiration, which is very important for the development of language activity. Linguistic conjecture is justified in logic, the desire to overcome the gap in the semantic chain on the basis of translation, creation of figurative imagination, reinterpretation. When an unfamiliar word is independently semanticized, a gap in the semantic chain is naturally overcome by the efforts of an informed guess. The possibilities of guessing depend on the semantic motivation of the word. Words with a figurative semantic motivation are usually words with figurative meaning. If the images in the native and foreign languages match, then the figurative meaning of the word is easily established; if not, then clear contrasting contexts are needed.

Operations such as the analysis of the sound graphic image of a word, the morpheme composition of a word, the grammatical and semantic connection of a word with the context are characteristic of a guess. The meanings of some words can be understood from the internal form, and for others - only in the context. Factors that contribute to language guessing often go beyond the word and interact with the context.

The following degrees of difficulty in the development of the puzzle can be established:

- a) building semantic connections without rethinking elements, for example, establishing a figurative meaning when some of the meanings in the native and foreign languages match;
- b) setting the meaning without rethinking elements, based on a certain choice, for example, if you know the adjective *calm*, students can understand the verb *to calm*, formed by conversion, compound nouns *letter-box*;
- c) combining semantic connections in the essence of the formation of a new semantic connection; understanding the words of this group requires quick recognition, selection and solution, for example, in the word *chatter-box*, one component retains meaning, but the understanding of everything is conditioned by the integrity of the concept;
- d) reinterpretation of obvious semantic connections, for example, mother-in-law.

Since the development of language guesswork is considered as one of the tasks of learning vocabulary, this process, like the development of other skills, can be shown as a stage in which the techniques of language guesswork are transferred to other similar cases. However, different ways are offered, including learning through a series of interconnected texts and exercises to them, which provide a gradual transition from the stage of training to language practice. For this purpose, unfamiliar words are specially included in the text, which cause students certain difficulties that they cannot overcome.

The operations that take place in the process of guessing differ depending on whether the guessing takes place outside the context - within a word, phrase or in a wider context. For operations with individual words and phrases, the selection and grouping of words, for example, by common root, affix, will be characteristic.

Operations with the context teach orientation in the context - selection of lexical units, recognition of familiar elements, identification of structural and semantic connections.

Let's point out some types of tasks for the formation of a linguistic conjecture:

- a) aimed at revealing the semantic motivation of the unstudied word. For example, to reveal the meaning of an unknown word based on the semantic connections of complex parts of the word;
- b) aimed at the use of contextual conditions of language guesswork. For example, to establish the meaning of a word, based on the purpose of edmet, expressed by this word;
- c) aimed at capturing the content (of the text). For example, read the main sentence and guess the content of the additional one;
- d) aimed at reading texts that contain unfamiliar words.

Tasks for language guessing exercises must be constructed in such a way as to draw students' attention to the hint. Example:

- read the text (paragraph, sentence) and underline the signs of time and place, taking these signs into account, determine the meaning of the highlighted words;
- to read the text, to find out the meaning of highlighted unfamiliar words, the analysis of words by composition and determination of their function in a sentence will help you;
- read the entire text and determine its content.

If work on language guesswork is made an organic element of work on a dictionary, then, in addition to the great practical benefit in terms of the spread of a potential dictionary, it will contribute to the development of the general education of students, first of all, their knowledge of language as a social phenomenon.

Linguistic guessing must be specially taught, because the students themselves often do not recognize the word in the new graphic shell. It is possible to form the necessary word recognition skills primarily by reading. It helps to expand vocabulary using techniques that direct students' attention to words whose meanings they can guess. Unfortunately, according to observations, this method is rarely used.

It is necessary to pay special attention of students to the techniques of guessing, to the awareness of the very path of "making up" the meaning of a word. If such work is performed in the classroom, it is usually collective in nature, often built on a voluntary basis, and for some it is not mandatory. In education, it is important not only that the student hears how to perform the exercises, but also knows how to perform them. Mastering language and contextual guessing techniques will take place more effectively during individual, independent work of students with handouts in the form of cards that guide the development of guessing.

In the process of expanding the potential vocabulary of students, the role of exercises with ambiguous, complex, derived and international words is strengthened. At the same time, the role of students' independent work with new vocabulary is increased, the methods of using bilingual dictionaries are improved.

Linguistic guesswork is of particular importance for the expansion of the potential dictionary - a very important component of the independent semanticization of words. Researchers of this phenomenon have derived three groups of language guessing clues: intralingual, interlingual, and extralingual. An intralingual hint results from assigning a word to a certain grammatical category, identifying its function in a sentence. An interlingual hint is contained in words formed as a result of borrowing from language to language, in internationalisms. An extralingual hint results from knowledge of the facts and phenomena of reality reflected in the text, which give it an indicative character. Thus, signs of time, place, mention of proper names shed light on the meaning of unfamiliar words.

Language conjecture is a consequence of all teaching and life influences, and therefore it manifests itself differently in different students, that is, it has a subjective character. One student can see a hint in a given word, context, another cannot. However, special language guessing exercises can give it a more directed and, therefore, objective character. Learning a foreign language is based on strictly limited linguistic material. Therefore, it is necessary to diligently and carefully work on it, check the degree and quality of its assimilation, that is, control. The focus on "accountability" in the assimilation of knowledge increases the responsibility of students, mobilizes their intellectual, volitional, and emotional efforts.

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## DEVELOPMENT TRENDS AND CURRENT PROBLEMS OF THE FOOD INDUSTRY IN UKRAINE AND THE WORLD

*Харчова промисловість є ключовою галуззю економіки України та світу, що забезпечує населення необхідними продуктами харчування. Зростання вимог споживачів спричиняє появу нових проблем, таких як якість та безпека продуктів, забруднення, залежність від імпорту та вплив на навколишнє середовище. Важливою тенденцією є зростання популярності органічної та натуральної продукції, але галузь потребує суттєвих змін для вирішення цих проблем. Україна може стати провідним учасником у розвитку ефективного виробництва органічної та натуральної продукції, підвищенні якості та безпеки харчових продуктів та зменшенні впливу на довкілля за умови співпраці влади, бізнесу та міжнародних інвесторів.*

**Ключові слова:** харчова промисловість, харчування, імпорт, натуральна продукція, тенденція, вплив на довкілля.

*The food industry is a key branch of the economy of Ukraine and the world, which provides the population with the necessary food products. Growing consumer demands are causing new issues such as product quality and safety, pollution, import dependency and environmental impact. An important trend is the growing popularity of organic and natural products, but the industry needs significant changes to solve these problems. Ukraine can become a leading participant in the development of effective production of organic and natural products, improving the quality and safety of food products and reducing the impact on the environment, provided that the authorities, businesses and international investors cooperate.*

**Key words:** food industry, nutrition, import, natural products, trend, impact on the environment.

The food industry is one of the most important sectors of the economy in Ukraine and the world. Due to the constant growth of the population and changes in eating habits, this industry is becoming more and more important for providing the necessary food products. However, along with the growth of consumer demands, new problems appear that require attention and solutions. More and more scientists and practitioners devote their work to the study of problems in the food industry of Ukraine and the world, as well as to finding ways to solve them.

The food industry has always been considered a priority and strategically important component of the agro-industrial complex of Ukraine for Ukraine, capable of ensuring food security not only in the domestic market, but also competitive positions among world countries - leaders in the production of food products [1].

As practice shows, one of the main trends in the development of the food industry is the increase in demand for organic and natural food products, as well as the growing popularity of plant-based nutrition and veganism. But, at the same time, there are a number of problems in the industry, in particular, the quality and safety of food, contamination of food, storage and processing, the decrease in the amount of production of own agricultural products, dependence on imports, as well as the impact on the environment (soil pollution and water pollution).

Modern studies indicate that the food industry needs significant changes, taking into account social challenges and new trends. Based on this, Ukraine can become a leading participant in this process, developing effective production of organic and natural products, increasing the quality and safety of food products, reducing the impact on the environment.

Achieving such goals will be facilitated by the use of various approaches and tools, for example, such as:

7. raising public awareness of the benefits of organic and natural products, plant-based nutrition and veganism;
8. support for producers of organic and natural products, for example, with the help of financial incentives and other measures;
9. implementation of effective technologies and practices in production, which will help ensure the quality and safety of food products, as well as reduce the impact on the environment;
10. increasing the volume of agricultural production in Ukraine and increasing its competitiveness on the international market;
11. strengthening control over the quality and safety of food products, taking measures to combat abuse in this area.

In view of the above, we note that currently the food industry of Ukraine remains one of the most optimistic industries. Despite the fact that in 2022-2023, producers suffered great losses (disruption of supply chains, blocking of sea routes of export, damage to production facilities), nevertheless, the food industry demonstrates relative stability against the background of other types of activity, as it provides the basic needs of the population (which have everyday demand both in the country and outside its borders). The key to the successful economic recovery of the food industry is the effective cooperation of the government, business and international investors, as well as the improvement of the legislative and regulatory framework.

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## PROBIOTICS IN POULTRY FEED

*Через проблеми використання антибіотиків у годівлі всіх свійських тварин, в тому числі птиці, виникла можливість додавання у корми пробіотиків, які будуть підтримувати здоров'я птиці та покращувати її продукцію. Зазначено основні переваги цього відкриття.*

**Ключові слова:** пробіотики, сільське господарство, домашня птиця, годування.

*Due to the problems of using antibiotics in the feeding of all domestic animals, including poultry, it has become possible to add probiotics to the feed, which will support the health of the bird and improve its production. The main advantages of this discovery are indicated.*

**Key words:** probiotics, agriculture, poultry, feeding.

Pathogens face numerous obstacles in the process of colonizing the intestinal tract and causing infection. In addition to physical limitations such as low pH in the stomach and rapid transit through the small intestine, pathogens must overcome the inhibitory effects of the gut microbiota, the physical barrier of the epithelium, and the response of the host's immune tissues. There is a well-established concept of cross-talk between these systems and between pathogens and the epithelium. Recent studies indicate that at least some species of nonpathogenic gut microbiota also interact with the epithelium and the immune system, modulating tissue physiology and their ability to respond to infection. However, the popularity of the use of antibiotics in agriculture has not decreased.

The use of antibiotics in animal husbandry to support animal welfare and increase productivity has been going on for over 50 years. However, over time it became clear that this practice had serious negative consequences, as it led to the emergence of antibiotic-resistant bacteria, especially streptomycin and tetracycline. These findings served as the basis for the introduction of stricter regulations on the use of antibiotics in poultry feed, which agricultural authorities introduced [1].

Instead, manufacturers changed their strategy and started using probiotics. Probiotics are live microorganisms that are added to animal diets as feed or food additives. They are known for their usefulness to the owner, mainly due to the positive effect on the gastrointestinal tract of the animal. Incorporating probiotics into the diet can improve animal health and performance by supporting gut health and efficient nutrient utilization [2].

Probiotics significantly affect the composition and functions of the intestinal microbiota. Considered mechanisms of their use to accomplish this include competing with other microorganisms for nutrients, interacting with binding sites and receptors on the intestinal mucosa, and inhibiting the growth of other microbes through the production of antimicrobial substances (Abdel-Moneim & Sabic, 2019; Abdel-Moneim & Sabic, 2019; Abdel-Moneim et al., 2020;) [3, 4].

Other potential mechanisms of antagonistic action of probiotics against pathogenic bacteria include immunomodulation, production of organic acids, lowering of intestinal pH, and stimulation of the body's defense systems (Abdel-Moneim et al., 2020) [4]. In addition, probiotics can reduce the translocation of pathogens across the intestinal mucosa, increasing the integrity of the intestinal barrier and maintaining immune tolerance.

To study the effects of probiotics on the function, diversity and composition of the gut microbiota, scientists use different methods and tools, such as culture-based methods, metagenomic sequencing and in vivo experiments. However, administration of probiotics in vivo is the most effective method for obtaining accurate results.

Numerous studies confirm the effect of probiotic supplements on the histomorphometry of the intestines of birds. These reports indicate that dietary administration of probiotics affects villus



height (VH) and crypt depth (CD) in portions of the small intestine (Abdel-Moneim et al., 2020; Abdel-Moneim et al., 2019;) [3, 4].

Additionally, studies have shown that probiotic supplements benefit farm animals in the form of immunomodulation, structural modulation, and increased production of cytokines that positively affect the intestinal mucosa in the fight against pathogens. For example, *Bacillus subtilis* is a popular bacterium used in industry, and studies have shown that it improves the height of intestinal villi. Increasing villus height and crypt structure in the gastrointestinal tract improves digestion and absorption of nutrients (Amerah et al., 2013) [5].

In summary, probiotics can help reduce the risk of disease by competing with pathogenic microorganisms in the animal's gut and help boost its immunity. In addition, they can positively influence aspects of product quality such as taste, texture and appearance of animal products. In this regard, the use of probiotics is becoming increasingly popular in agriculture as an alternative to antibiotics.

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### BIOTECHNOLOGICAL WASTEWATER TREATMENT (БІОТЕХНОЛОГІЧНЕ ОЧИЩЕННЯ СТІЧНИХ ВОД)

*У публікації розглянуто проблематику очищення стічних вод, основні методи очищення стічних вод за допомогою використання технологій сучасної біотехнології. Наведено переваги біологічного очищення порівняно із традиційними хімічними методами.*

**Ключові слова:** біотехнологія, очищення, стічні води, бактерії, аеробне та анаеробне очищення, мікроорганізми.

*The publication discusses the problems of wastewater treatment, the main methods of wastewater treatment using modern biotechnology technologies. The advantages of biological treatment compared to traditional chemical methods are presented.*

**Key words:** *biotechnology, treatment, wastewater, bacteria, aerobic and anaerobic treatment, microorganisms.*

An undesirable consequence of human economic activity has been the disruption of the natural balance in many water bodies and the deterioration of water quality. Industrial and domestic wastewater discharged into natural bodies is characterized by a high level of pollutants and a significant amount of toxicants. In such circumstances, it becomes impossible to restore water sources on their own. This is where an urgent need arises to develop and apply modern environmentally safe, efficient methods of wastewater treatment, especially those that are returned to water bodies and those that are subject to recycling.

Wastewater is defined as water systems saturated with many substances that have been formed as a result of household and industrial activities, and have therefore undergone significant changes in their primary chemical composition or lost their physical properties and become unsuitable for reverse processes. It should be noted that the constituents of industrial wastewater are very diverse, and their characteristics depend on the type of pollutant production. At the same time, its amount is determined by the productivity of technological processes.

Wastewater treatment is a multi-stage complex process aimed at restoring the quality characteristics of contaminated water to enable its further economic use. Water treatment primarily involves reducing or removing pollutants from water: organic substances, colloidal or suspended solids, as well as the destruction of pathogenic bacteria, etc.

Among all modern methods of industrial and domestic wastewater treatment, biological methods are recognized as the most environmentally friendly. Firstly, biological treatment is based on natural processes, i.e., the ability of heterotrophic microorganisms to use for nutrition, along with organic substances in wastewater (alcohols, proteins, carbohydrates, etc.), some inorganic ones (ammonia, nitrates, phosphates, salts, etc.) plays an important role. In contact with these compounds, microorganisms partially destroy them in the process of obtaining energy, converting them into water, carbon dioxide, anions (sulfate ions) and cations of some metals, and partially consume these substances for their own reproduction, i.e., biomass growth. Secondly, microorganisms are characterized by the property of rapid accumulation and formation of colonies, which makes it easy to separate them from treated water [1].

Living organisms, especially bacteria, play an extremely important role in the treatment of water contaminated with organic matter. However, significant success in water treatment can be achieved by using not only bacteria, but the widest possible range of hydrobionts, starting with bacteria and algae and ending with vertebrates, as is the case in natural hydrocyanoses [2].

The new technology is characterized by multi-stage anaerobic and aerobic wastewater treatment using immobilized microorganisms. The main advantages are: the ability to increase the efficiency of wastewater treatment from high molecular weight organic and inorganic substances, reduce energy consumption for treatment, increase the reliability of treatment facilities in the conditions of daily and seasonal changes in wastewater flow, toxic substances, reduce the volume of sediments produced and the cost of their dewatering and disposal [5].

There are several types of biological wastewater treatment devices: biofilters, biological ponds, and aeration tanks.

The main traditional method of biological wastewater treatment is the treatment with activated sludge in aeration tanks. A typical technological scheme of such treatment is as follows: after thorough mechanical cleaning from various debris, sand, grease, and other dispersed impurities that settle or float in the field of gravity, wastewater enters a narrow (3-11 m), deep (4-6 m), and long (50-250 m) structure, where it is treated with complex hydrobiocenosis - activated sludge - under constant aeration. After a long (6-24 hours or more) treatment, the water enters a secondary settling tank, where it is freed from activated sludge, and then enters the so-called tertiary physical and chemical treatment (sometimes after chlorination) in intermediate reservoirs (ponds) and, finally, the river. A part of the activated sludge that settles in the secondary settling tank is returned to the biological treatment plant - an aeration tank. Excessive sludge creates a difficult

environmental and technological problem with this technology: there is a lot of it and it contains dangerous virions, microorganisms, helminth eggs, etc., as well as heavy metal ions, biologically resistant, toxic and even mutagenic compounds[3].

In biofilters, wastewater is passed through a layer of coarse-grained material covered with a thin bacterial film. Thanks to this film, biological oxidation processes are intensified. It is this film that serves as the active principle in biofilters.

In biological ponds, all the organisms inhabiting the reservoir are involved in wastewater treatment.

The biological method gives great results in the treatment of municipal wastewater. It is also used in the treatment of waste from oil refineries, pulp and paper industries, and the production of artificial fiber [4].

The purpose of industrial wastewater treatment is to remove soluble and insoluble components, eliminate pathogens, and detoxify them so that the wastewater components do not harm humans or pollute water bodies. Bacteria of the *Pseudomonas* genus are practically omnivorous: they can utilize naphthalene, toluene, alkanes and other compounds. Pure cultures of microorganisms capable of decomposing specific phenolic compounds and oil components in contaminated waters have been isolated. Microorganisms of the *Pseudomonas* genus utilize insecticides, herbicides and other xenobiotics. In the future, genetically engineered strains of microorganisms will be able to solve the problem of treating wastewater and soil contaminated with pesticides and other anthropogenic substances.

Nitrogen-containing compounds (proteins, amino acids, urea) can be removed in the biological process of denitrification - nitrification. The biological removal of nitrogen and phosphorus, which are the causes of overgrowth of lakes and canals, is still under experimentation.

Heavy metals impede biological wastewater treatment processes and have a negative impact on flora and fauna. Natural strains of microorganisms cannot always be used to accumulate these metals due to their significant toxicity. However, there is a protein in higher organisms called metallothionein that actively binds heavy metals. The gene encoding the synthesis of mouse metallothionein has been cloned in bacteria, which opens up the possibility of producing the protein in large quantities using immobilized bacteria and using it for sorption and extraction of heavy metals.

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**NEW TECHNOLOGIES AND FEATURES OF THE PRODUCTION OF BAKERY  
PRODUCTS OF THE NEW GENERATIO  
(НОВІТНІ ТЕХНОЛОГІЇ І ОСОБЛИВОСТІ ВИРОБНИЦТВА  
ХЛІБОБУЛОЧНИХ ВИРОБІВ НОВОГО ПОКОЛІННЯ)**

*У роботі порушено питання користі та необхідності вживання хлібобулочних виробів і їх вплив на здоров'я людини. Проведено аналіз впливу використання функціональних інгредієнтів при виготовленні хлібобулочних виробів. Охарактеризовано актуальні шляхи розвитку хлібобулочної галузі.*

**Ключові слова:** раціональне харчування, користь, хлібобулочні вироби, вплив, функціональні інгредієнти, шляхи розвитку.

*The work raises the question of the usefulness and necessity of the use of bakery products and their impact on human health. An analysis of the influence of the use of functional ingredients in the manufacture of bakery products has been carried out/ Current ways of development of the bakery industry are characterized.*

**Key words:** rational nutrition, benefit, bakery product, influence, functional ingredients, development pathways.

Bakery products are food products that are baked from flour, yeast, salt, water and additional raw materials for bakery products.

By weight, bread products are divided into bread (products weighing more than 500g) and bakery products (500g and less), and bakery products, in turn, into large pieces (200-500 g) and small pieces (50-200 g). From the group of improved bakery products, butter products (with a sugar and fat content of 14% or more according to the recipe) are separately distinguished [1].

Bakery products are among the most important food products of the daily diet of the population of Ukraine. They are about 50% carbohydrate, 5-8% protein, and up to 1% fat. They are a source of many minerals, especially potassium, phosphorus, magnesium, and B vitamins. A good third of all the energy and protein that we get from plants comes from eating bakery products [2].

Complete refusal of bread and bakery products can lead to depression, inflammation and fatigue. Therefore, most nutritionists believe that 150 grams of raw or stale bread will not ruin your figure or cause any harm to your body, but, on the contrary, when eaten in moderation, will inhibit the excellent work of the digestive tract and have a beneficial effect on your digestive and immune systems [3].

Because of its many beneficial ingredients, bread can be a valuable source of vitamins and minerals. The B vitamins found in bread and baked goods help to normalize the nervous and cardiovascular systems, as well as to improve the functioning of the intestines. Vitamin E is a powerful antioxidant, involved in DNA synthesis and stabilization of red blood cells and muscle tissue. In addition, bread is rich in potassium, magnesium, calcium, phosphorus, chlorine, iron, vanadium, manganese, cobalt, and other elements that are better absorbed from bread products. Experts strongly recommend keeping bread in the diet, as it is included in national dietary guidelines for developed countries, and the World Health Organization (WHO) recommends that you eat at least 25 grams of bread a day [4].

In my opinion, the best bread and bakery products are baked independently at home in the oven. Generally, in such bakery products, are made with rye or coarse-ground flour instead of ordinary white flour of the highest grade to make them more useful. Such bakery products have the most attractive appearance, a characteristic smelling aroma when baked, a crunchy golden(or other color) crust, the inner pulp comes out soft sometimes a little elastic. The taste and color of bakery

products mainly depend on the ingredients from which the product is prepared, as well as on the addition of certain food additives such as sunflower, flax, chia, sesame, poppy and other seeds, as well as dried fruits, pieces of fruit or candied fruit, various fruit berry and sweet fillings.

Despite the high energy value of bakery products, it is necessary to take into account that for each age group of the population, products for a specific purpose are needed. Therefore, the amount of essential nutrients and minerals, vitamins in baked goods produced by traditional technology, is insufficient for a balanced human diet, including the low protein content does not provide the body fully with essential amino acids. Therefore, there is a need to create new products that will contain ingredients that can improve the physiological processes in the human body, boost its immune system, be able to sustain an active lifestyle in challenging environmental conditions. To this end, a variety of raw materials can be used to enhance the nutritional and biological value of bread products, giving them therapeutic and preventive properties. First of all, natural raw materials of plant and animal origin, as well as special single-component and multi-component additives [5].

Research of the chemical composition of such natural raw materials as fruit and berry puree, parsley, juices, powdered products from vegetable and fruit juices, have shown their high nutritional value and the possibility of use in the baking industry to create new varieties of baked goods with corresponding dietary properties [6].

The effectiveness of the use of fruit and vegetable products is determined by the fact that they are harmless additives of natural origin and are distinguished by a high content of the most important components – vitamins, organic acids, minerals, carbohydrates, cellulose, pectin, as well as corresponding technological properties. When mixing the yeast dough, add fresh fruits, such as avocado and apricots, citrus cider. First of all, apricots enrich new products with vitamin A and iron, and thanks to ivy we get products enriched with vitamins PP, P, nutrients – potassium, calcium, sodium, iron, which are very important for the normal functioning of the human body [7]. Citrus fruits are of great value, containing sucrose, glucose, fructose, water-soluble pectin, citric acid, with the macronutrient potassium, a lot of calcium and phosphorus. The core of this fruit is rich in vitamin C – 120-180 mg, up to 490 mg of vitamin P, as well as vitamins B1, B2, carotene, concentrated essential oils, glucosides, pectin substances, cellulose. Cedar is processed into a powder, which produces vitamin P and pectin, which are added to the dough when it is baked I'm going to start with the baked goods [8].

All organizational and economic problems of innovation in bakeries can be grouped into two groups: quantitative and qualitative. In turn, quantities can include: output the needs of the population of a given region; increasing the volume of sales of products by introducing it's the ability to market new products to new markets, to increase the share of high-end products, and so on. The qualitative indicators of the organizational and economic level include: improvement in the quality of products; expanding the range and creating new types of products; replacement of equipment with new generation technology and others.

Given the existing trends in the market of bakery products, the priority ways of innovative development of industry enterprises are:

- improving the quality of products;
- constantly updating the range;
- increasing the product range;
- expanding target markets.

To sum up, knowing the benefits and using whole grain products rationally can increase the content of valuable nutrients and minerals in your body, strengthen immunity, and improve bowel function. The introduction of bakery products enriched with protein-carbohydrate complexes, cell-based additives and functional ingredients will be particularly useful and effective. Due to the increasing variety of bakery products from year to year and the growing demand for bakery products, the use of priority paths for the development of bakery enterprises will be relevant.

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## MECHANISMS OF POSTBIOTICS AND THEIR IMPACT ON HUMAN HEALTH

*У статті надано чітке пояснення того, що таке постбіотики, чим вони відрізняються від пробіотиків, а також наукові пояснення, що стоять за їх створенням і функціями. Досліджено потенційні переваги постбіотиків для здоров'я, зокрема їх роль у підтримці здоров'я травлення, імунної функції та загального самопочуття.*

**Ключові слова:** постбіотики, мікроорганізми, пробіотики, імунітет, метаболізм.

*The article provides a clear explanation of what postbiotics are, how they differ from probiotics, and the science behind their formation and functions. The potential health benefits of postbiotics have been explored, including their role in supporting digestive health, immune function, and overall well-being.*

**Key words:** postbiotics, microorganisms, probiotics, immune, metabolism.

According to extensive studies on microorganisms, probiotics are widely applied in food processing, infant formula, medical, agricultural, and even aquaculture sectors for their health-maintaining properties. Dietary supplements known as probiotics contain living, nonpathogenic bacteria that are beneficial to the host's health. They operate through various mechanisms, including immunomodulation, the generation of antimicrobial compounds, direct binding, or the competitive inhibition of pathogens. Additionally, they regulate electrolyte absorption and gut motility. Despite these advantages, challenges such as quality variations, a brief shelf life, diverse effects, and the

inconvenience for immunocompromised individuals restrict their use in various transportation methods and storage conditions like pasteurization or baking.

To address this issue, new-era products such as postbiotics have emerged as the current research target. These products exhibit enhanced safety and stability, are more convenient for storage, and entail a lower risk of antimicrobial resistances.

According to the current literature, postbiotics are bioactive compounds that are produced during the fermentation process of probiotics or by the action of gut microbiota on dietary substrates. These compounds include various metabolites, cell wall components, and other byproducts of microbial activity. Typically, the forms could be a heterogeneous mixture of cellular structures and metabolites such as teichoic acids, exopolysaccharides, peptidoglycan, bacteriocins, etc [1].

At present, postbiotics find application not only in the fermented food industry but also emerge as a promising treatment approach for sub-health conditions, particularly in addressing gastrointestinal disorders like bloating and diarrhea [2]. Therefore, the application of postbiotics would be an efficient complement to probiotics and a driving force for the development of a comprehensive health industry.

Postbiotics exert a broad spectrum of positive impacts on human health by influencing the gut microbiota and modulating various physiological processes. These effects encompass:

1. Postbiotics can help regulate the immune system and reduce inflammation. Certain metabolites produced during the fermentation process, such as short-chain fatty acids (SCFAs), have anti-inflammatory properties. They can modulate immune cell activity and reduce the production of pro-inflammatory cytokines.
2. Postbiotics can interact with the immune system to enhance its function. They may stimulate the activity of immune cells, promote the production of antibodies, and contribute to a balanced immune response. This can be beneficial in preventing or managing immune-related disorders.
3. Postbiotics can strengthen the gut barrier, which plays a crucial role in preventing the entry of harmful pathogens and toxins into the bloodstream. By promoting the production of mucins and enhancing tight junction integrity, postbiotics contribute to a healthy gut barrier.
4. Some postbiotics, particularly SCFAs like acetate, propionate, and butyrate, play a role in energy metabolism. They can influence glucose and lipid metabolism, contributing to improved insulin sensitivity and potentially aiding in the management of metabolic disorders such as diabetes.
5. Postbiotics may exhibit direct antimicrobial effects by inhibiting the growth of pathogenic bacteria. This helps maintain a balanced microbial community in the gut and prevents the overgrowth of harmful microbes.
6. Certain postbiotics possess antioxidant capabilities, helping to neutralize free radicals and reduce oxidative stress. This can contribute to overall cellular health and may have implications for preventing chronic diseases associated with oxidative damage.
7. There is emerging evidence that postbiotics can influence the gut-brain axis, affecting neurological function and mental health. They may produce neuroactive substances that impact mood, cognition, and behavior.
8. Postbiotics can influence gene expression in host cells, leading to changes in various physiological processes. This modulation of gene expression can contribute to the overall health-promoting effects of postbiotics.
9. Research suggests that postbiotics may have therapeutic applications in preventing and managing various conditions, including inflammatory bowel diseases, metabolic disorders, and neurodegenerative diseases.

The boundary between probiotics and postbiotics is blurred in some trials, as their impact on the results is often not evaluated separately [3]. Balancing the safety concerns against performance differences in probiotics and postbiotics, a compromised and optimal prescription is urgent to be

proposed when facing a specific patient's state, which may lie in the combined administration of probiotics and postbiotics in appropriate proportion. Incorporating a diverse range of dietary fibers, prebiotics, and fermented foods can contribute to the production of beneficial postbiotics in the gut.

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### ROLE OF CENTRAL BANKS IN SHAPING MONETARY POLICY (РОЛЬ ЦЕНТРАЛЬНИХ БАНКІВ У ФОРМУВАННІ МОНЕТАРНОЇ ПОЛІТИКИ)

*Дана стаття присвячена вивченню дослідженої ролі центрального банку у формуванні грошово-кредитної політики. Розглянуто особливості грошово-кредитної політики та виокремлено основні чинники макроекономічного середовища, які негативно впливають на її реалізацію.*

**Ключові слова:** монетарна політика, Центральний банк, макроекономічне середовище.

*This article is devoted to the study of the researched role of the central bank in the formation of monetary policy. The features of the monetary policy are considered and the main factors of the macroeconomic environment that negatively affect its implementation are highlighted.*

**Key words:** monetary policy, Central Bank, macroeconomic environment.

Amidst instability and uncertainty, the current stage of economic development poses new challenges for economic policy. The monetary policy of central banks, which is part of the economic policy of countries, should provide an appropriate monetary foundation for stable social and economic development, including price stability and low inflation in the long run. In Ukraine, this topic is particularly relevant, as monetary policy during martial law becomes extremely important, so in the process of making decisions on the use of monetary instruments, the central bank must clearly define priorities and minimize overall risks.

In a general sense, the Central Bank is the issuing and cash center of the country (a state institution) that supervises the banking system and is responsible for maintaining monetary policy in the country based on ensuring stable non-inflationary economic development [1, p. 211].

The key functions performed by all central banks, without exception, are divided into regulatory, control, and service functions. In a market economy, central banks have a wide range of monetary instruments, the use of which depends on the direction of state economic policy, the degree of openness of the economy, the characteristics of the money market, banking system, customs and circumstances [2].

It is worth noting that monetary policy is a set of specific goals and instruments for achieving them. Monetary policy goals are divided into ultimate goals (economic growth, full employment, price stability) and intermediate goals (money supply, interest rate, exchange rate). By



achieving intermediate goals, the NBU influences the ultimate goals. The main goal of monetary policy is to implement a set of measures adopted by the state through the central bank in the monetary and financial spheres to achieve strategic goals of economic development, including achieving an appropriate level of inflation, stabilizing the national currency and balance of payments, and ensuring a full employment rate. Monetary regulation is implemented in the monetary sphere through the use of differentiated channels and instruments that together form the structure of the transmission mechanism. It should be noted that the effectiveness of monetary policy depends on certain key aspects [4].

The central bank plays a key role in the conduct of monetary policy by performing functions such as controlling the money supply. Central banks set refinancing rates and other instruments to regulate the amount of money supply in the economy. This may include changing the discount rate, issuing or withdrawing money from circulation, and other monetary mechanisms. One of the main tasks of a central bank is to maintain price stability. They try to avoid large fluctuations in inflation or deflation, which can be harmful to the economy. Central banks are also responsible for ensuring the stability of the financial system. They take measures to minimize the risks of financial crises, control banking activities, and provide liquidity to the banking system. The central bank determines and implements monetary policy aimed at managing the money supply, interest rates and credit conditions. This policy is aimed at controlling the total amount of money in circulation, which affects the level of inflation and promotes stable economic growth; All these and other functions are aimed at achieving macroeconomic stability and promoting economic growth and development of the country [3].

The National Bank of Ukraine is the main subject of monetary policy in Ukraine. In addition to the NBU, other state economic regulatory authorities, such as the Ministry of Finance of Ukraine, the Cabinet of Ministers of Ukraine, and the Verkhovna Rada of Ukraine, are involved in the implementation of this policy. However, the NBU plays a key role in the process of developing and implementing monetary policy, as it is primarily responsible to society for the situation in the monetary sector [5, P. 103].

The main factors of the macroeconomic environment that have a negative impact on the conduct of monetary policy include

- an increase in the degree of dollarization of the national economy, which reflects the tendency of foreign exchange market participants to protect themselves from possible depreciation of the national currency
- rising inflation expectations on the part of households and businesses;
- sensitivity of the national economy to internal and external shocks.

Thus, it has been established that the central bank is an integral part of the financial system of any country, and its decisions and strategies affect a wide range of aspects of economic life and financial stability. This is due to the implementation of monetary policy that properly takes into account internal and external factors of influence. Thus, the NBU plays a key role in shaping the country's monetary policy.

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**ENHANCING LOCAL ECONOMIES THROUGH CORPORATE SOCIAL  
RESPONSIBILITY INITIATIVES**  
**(ПІДВИЩЕННЯ МІСЦЕВИХ ЕКОНОМІК ЗА ДОПОМОГОЮ ІНІЦІАТИВ  
СОЦІАЛЬНОЇ ВІДПОВІДАЛЬНОСТІ ПІДПРИЄМСТВ)**

*Корпоративна соціальна відповідальність (КСВ) стає все більш важливою рушійною силою підтримки та розвитку місцевих економік. Вона йде далі, ніж просто дотримання законів і норм, і фокусується на внеску в добробут місцевих громад. В статті досліджено багатогранний вплив КСВ на локальні економіки, висвітлюючи інноваційні підходи, успішні приклади, а також виклики та перспективи розвитку.*

**Ключові слова:** Корпоративна соціальна відповідальність (КСВ), місцеві економіки, економічне зростання, створення робочих місць, підтримка місцевих підприємств, інноваційні підходи, моніторинг та оцінка, співпраця, становлення, добробут

*Corporate Social Responsibility (CSR) is becoming an increasingly important driving force for supporting and developing local economies. It goes beyond mere compliance with laws and regulations, focusing on contributing to the well-being of local communities. The article explores the multifaceted impact of CSR on local economies, highlighting innovative approaches, successful examples, as well as challenges and prospects for development.*

**Key words:** Corporate social responsibility (CSR), local economies, economic growth, job creation, local business support, innovative approaches, monitoring and evaluation, collaboration, development, well-being

Social responsibility is an integral component of the macro system that unites individuals, states, and societies. Each complex social structure strives for self-preservation by organizing social relations but risks disintegration due to the violation of these connections. This dynamic reflects a unique law of unity and a struggle of contradictions. [1]

The theoretical foundations of the CSR concept were laid in the 18th century when entrepreneurial activity focused on the interests of a group of shareholders or owners who only sought to improve their image and profits. Their activities and consequences were negatively perceived by most community members and the state, which led to an increase in the tax burden as a punishment for "irresponsible" practices. Over time, society realized the need to introduce new methods of organization and interaction with the environment. It became a prerequisite for the emergence of CSR and the creation of social value. [2, с. 27].

CSR plays a key role in stimulating economic growth at the local level. By investing in local infrastructure, providing job training programs, and promoting local entrepreneurship, CSR creates an enabling environment for business development and community prosperity. Studies have shown a clear correlation between high levels of CSR and sustained economic growth in regions. Modern approaches to CSR go beyond traditional methods. Innovative programs, such as business plan competitions, startup accelerators, and access to co-working spaces, stimulate the development of new businesses and generate new ideas. The adoption of technologies and digital solutions, such as e-commerce platforms, cloud services, and digital marketing training, empowers local enterprises to enhance their productivity and competitiveness. The most common method for researching CSR is content analysis. This method involves determining not only the nature and volume of social information but also aims to clarify the depth and variety of companies' disclosure of CSR

activities. According to its research focus, the content analysis method can be divided into two groups:

- Research aimed at studying the extent, volume, and diversity of social disclosure;
- Research aimed at analyzing the quality and depth of social disclosure.

An important metric is the CSR disclosure index, which determines the level of accessibility and volume of information published by companies about their social and environmental initiatives and activities. [3, c. 66].

There are numerous examples of successful implementations of CSR programs. Nestlé, for instance, supports coffee farmers in developing countries by providing them access to better technologies and resources. Walmart, in turn, provides local food producers access to its shelves, which helps expand markets and increase income.

Despite its significant potential, CSR faces certain challenges. There is a need to establish an effective monitoring and evaluation system for CSR programs to maximize their effectiveness. Other challenges include a lack of awareness about CSR, limited resources for its implementation, and resistance from local stakeholders. However, the prospects for CSR development are highly promising. Collaboration between governments, businesses, and civil society can lead to the development of more comprehensive and effective CSR programs. CSR can become a strategic tool for strengthening local economies, stimulating sustainable development, and improving people's lives.

**Conclusion:** Corporate Social Responsibility plays a vital role in supporting and developing local economies. By stimulating economic growth, creating jobs, supporting local businesses, and embracing innovative approaches, CSR emerges as a powerful driver of positive change at the local level.

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#### THE PROBLEMS OF CONDUCTING LAND INVENTORY IN UKRAINE

*У статті розглядаються проблеми проведення інвентаризації земель в Україні та шляхи їх вирішення.*

**Ключові слова:** інвентаризація, земельні ресурси, земельний кадастр.

*The article considers the problems of land inventory in Ukraine and ways to solve them.*

**Key words:** inventory, land resources, land cadastre.

Land inventory is a very relevant and important issue for Ukraine. It is carried out in order to establish the real state of land use, identify land plots that are not used in accordance with their intended purpose, and unsuitable for land use for their conservation in the future, establish the actual location (location) of land plots, restrictions on their use, introduction of new and updating old data of the State Land Cadastre [3].

Land inventory performs many important functions. It allows you to establish the quantity, quality and location of land resources in each region of the country, the actual state of ownership of land plots and resolve disputed issues, detect illegal use of land and monitor the fulfillment of the terms of land lease agreements, determine the resource potential of territories and develop plans for their development, taking into account features of the surrounding environment and relevant technical and infrastructural capabilities.

Land inventory objects are the territory of administrative-territorial units or their parts, the territory of Ukraine, land plots for agricultural (rural) purpose, separate land plots, and those on which reclamation networks or their parts are located [2].

Land resources determine the opportunity for the development of the agricultural industry, energy and various economic sectors of any country. To date, information on the state and distribution of land resources in Ukraine is not one hundred percent accurate and complete. Land inventory is an important process for ensuring the rational use of land resources, as well as for determining the possibilities of their further development and investment-attractive territories.

Today, the land cadastre in Ukraine is not sufficiently complete and reliable. In order to improve the filling of the cadastre, it is necessary to conduct an inventory of lands. The necessary legislative norms are contained in such documents as Resolution of the Cabinet of Ministers of Ukraine dated 10.08.2022 No. 476-2019-p "On approval of the Procedure for carrying out land inventory and recognition as having lost the validity of certain resolutions of the Cabinet of Ministers of Ukraine", Law of Ukraine "On Land Management" dated March 31, 2023 No. 858-IV, Land Code of Ukraine No. 2768-III dated May 6, 2023.

According to the State Service of Ukraine for Geodesy, Cartography and Cadastre, 44.9 million hectares or 74% of Ukraine's land plots have been registered to date [1]. But, in fact, these data do not show the amount of land that is leased, illegally owned, or in shadow use. Solving this problem is an important step in the direction of effective management of the country's land resources and ensuring the sustainable development of the territories of territorial communities.

These measures can help solve the problems of land inventory in Ukraine and ensure effective use of land resources in the future.

Land inventory in Ukraine faces several problems, the main ones being:

1. **Insufficient accuracy and objectivity of data:** Land resources are often recorded incorrectly or in insufficient detail, which leads to unreliable information about their quantity and condition.
2. **Insufficient process automation:** Many of the existing inventory systems rely on manual data entry, which leads to delays, errors and inaccuracies.
3. **Misuse of land:** Attempts to abuse land rights can lead to misuse of land resources.
4. **Insufficient coordination between authorities:** Information about land is stored in different departments, which often makes it difficult to collect and analyze it.
5. The following ways can be proposed to solve these problems:
6. **Implementation of modern technologies:** The use of geographic information systems (GIS) and satellite imaging can significantly increase the accuracy and efficiency of the inventory process.
7. **Centralized database:** The creation of a single centralized land data registry can facilitate access to information and improve its quality.
8. **Strengthening the legal framework:** It is important to develop and implement an effective system of legislation that would ensure the obligation of inventory and responsibility for inaccurate information.
9. **Simplifying procedures:** Improving legislation and inventory procedures can contribute to more efficient land management and reduce the risk of problems.
10. **Education and training:** Training of land inventory specialists in the field of modern methods and technologies will help improve the quality of this process.

11. **Public Involvement:** It is important to involve the public in the process of controlling and monitoring the use of land resources to ensure greater transparency and accountability of land management.

These measures can contribute to solving land inventory problems in Ukraine and improving the management of this important resource.

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УДК

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### CHARACTERISTICS OF MONARDA DIDYMA AND ITS INTRODUCTION IN THE CONDITIONS OF THE SOUTHERN STEPPE OF UKRAINE (ОСОБЛИВОСТІ МОНАРДИ ДВІЙЧАСТОЇ ТА ЇЇ ІНТРОДУКЦІЯ В УМОВИ ПІВДЕННОГО СТЕПУ УКРАЇНИ)

*У статті розглядаються особливості ефіроолійної культури монарди двійчастої та умови її вирощування. Виокремлено основні напрями застосування ефірної олії цієї культури у різних видах промисловості. Розглянуто питання інтродукції даного виду в умовах Південного Степу України та можлива продуктивність рослини за межами свого природного ареалу.*

**Ключові слова:** ефіроолійні культури, інтродукція, монарда двійчаста, продуктивність, Південний Степ України.

*The article considers the peculiarities of the essential oil culture monarda didyma and the conditions of its cultivation. The main areas of the essential oil of this culture application in various types of industry are highlighted. The issue of the introduction of this species in the conditions of the Southern Steppe of Ukraine and the possible productivity of the plant outside its natural area are considered.*

**Key words:** essential oil crops, introduction, monarda didyma, productivity, Southern Steppe of Ukraine.

Despite the expansion of medicinal and essential oil plant cultivation in the conditions of the Southern Steppe of Ukraine, this segment is still quite narrow in our region. In recent decades, the areas of these crops cultivation have decreased significantly, which has led to a decrease in the production of essential oils, as well as to problems in the field of special food products production. Therefore, Ukrainian manufacturers have to import most of the raw materials for the production of this type of products. Imported raw materials account for more than 60% [4].

The problem described above presents us with new questions and problems regarding the study and cultivation of new highly productive and highly profitable essential oil crops. *Monarda didyma* L. is one of the promising crops in this direction. The main area of this culture cultivation is

the eastern part of North America, some Eurasian regions. Also, this plant is naturalized in the western part of North America conditions. However, modern agriculture technologies make it possible to expand the area of crop cultivation, because it is capable of adapting to new soil and climatic conditions. The range of use of the plant in the West is also wide. It is used in the food industry (for the production of tea, as well as in the production of flour confectionery), as a medicinal plant (immune-strengthening and antiseptic agent), as an essential oil crop and in landscape design.

The composition of the monarda didyma leaves includes a large number of useful chemicals, which make this culture particularly valuable and attractive. This includes a large number of aromatic compounds (with the smell of mushrooms, bergamot, oregano, menthol) - they contain bactericidal, insecticidal, immunostimulating and antioxidant properties. Also includes a number of fatty acids, flavonoid compounds, etc., which can be used as natural preservatives in the confectionery industry [5].

In addition, this culture was studied for its use in animal husbandry as an alternative to synthetic antibiotics used in animal feed [2]. Some studies of foreign scientists show that the essential oil of *Monarda didyma* L. has the potential to be used as a component of bioherbicide formulations. In the future, it is planned to test these properties of the essential oil in field conditions for a better understanding of the real effect [1].

In Ukraine, there are recommendations for the cultivation of monarda didyma in the conditions of Polissia and Forest-Steppe. Only a small number of resources and studies highlight the issue of crop cultivation in the conditions of the Southern Steppe of Ukraine. This is what determines the relevance of the topic and the need for further research.

The researches of various scientists make it possible to conclude that monarda didyma has a high adaptive capacity and is a plastic culture that can be grown under different natural and soil-climatic conditions. However, the choice of variety is of great importance for growing a plant. Different varieties of essential oil culture give different yield of essential oil, as well as their different quality. By using plants of some varieties, it can be obtained about 5 g from 1 m<sup>2</sup>, and by growing others - up to 12 g from 1 m<sup>2</sup>. Under the conditions of monarda growing in the Ukrainian Southern Steppe, most of the essential oil is concentrated in the inflorescences, and this percentage is somewhat lower in the leaves [6].

Monarda didyma is an allelopathically active plant, but the study of the effect of mulching as one of the agrotechnical elements of its cultivation was carried out by many scientists. Studies of foreign researchers on the soil mulching effect during the cultivation of *M. didyma* L. on the content of essential oil in the leaves and inflorescences of the plant, as well as on its biological activity, indicate that this factor does not have a significant effect on these indicators, and under some conditions it can generally reduce the growth and development of inflorescences. However, the use of synthetic mulch itself may have had a positive effect on the antibacterial and antihistaminic effects of monarda essential oil [3].

Based on all of the above, we can conclude that *Monarda didyma* L. is a promising plant for its cultivation in the conditions of the Southern Steppe of Ukraine. The peculiarities of the introduction and cultivation of the essential oil culture in the conditions of the Southern Steppe of Ukraine should be studied in the future. Particular attention should be paid to the effect of mulching, the use of fertilizers and microfertilizers on the productivity of the essential oil in the leaves and inflorescences of the plant, as well as on its quality indicators.

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### ANIMAL CLONING BIOTECHNOLOGY (БІОТЕХНОЛОГІЯ КЛОНУВАННЯ ТВАРИН)

У даній публікації розглядається проблема необхідності клонування тварин у біотехнології, а також акцентується на важливості розвитку ефективних методів для виробництва повноцінних клонованих тварин. Досліджено наукові підходи та дослідження в галузі впливу клонування на генетичну ідентичність та властивості отриманих клонів.

**Ключові слова:** клонування тварин, перенесення ядер соматичних клітин, історія клонування, сурогатна мати, ідентичний близнюк, вівця Доллі.

*This publication addresses the necessity of animal cloning in biotechnology, emphasizing the importance of developing effective methods for producing fully cloned animals. Scientific approaches and research on the impact of cloning on the genetic identity and properties of obtained clones are explored. Specifically, the aspects of using somatic cell nuclear transfer (SCNT) and its application in breeding and restoring lost genetic traits in animals are discussed.*

**Key words:** animal cloning, somatic cell nuclear transfer (scnt), history of cloning, surrogate mother, identical twin, dolly the sheep.

Animal cloning stands as a groundbreaking reproductive method facilitating the creation of a genetically identical twin from an existing animal at a later stage. The initial approaches involved dividing embryos, but later advancements led to the development of somatic cell nuclear transfer (SCNT). Widely investigated in production animal agriculture, this distinctive reproductive technology is predominantly employed to recover lost genetics. Its utility in breeding is noteworthy, enabling producers to meticulously choose and reproduce specific genetic traits. Challenges, particularly the hindrance posed by low live birth rates, restrict the application of cloning in food animal production. Nevertheless, ongoing research is diligently addressing these hurdles, aiming to enhance the survival rates of clones. This concerted effort holds the promise of augmenting both the efficiency and economic feasibility of employing cloning technologies in animal agriculture [1].

History of cloning

Despite the recent strides that have sparked numerous discussions and opportunities in animal cloning, experiments in this realm have a history spanning over a century. The broad definition of an animal clone encompasses an animal originating from another, sharing identical

chromosomal DNA. In the late 1800s, Hans Dreisch pioneered the creation of animal clones, specifically sea urchins, by splitting a two-cell embryo and allowing both cells to independently develop. These embryo-splitting endeavors persisted into the 1900s, notably championed by Nobel Prize winner Hans Spemann's work on salamander embryos.

A pivotal moment occurred in 1952 when Robert Briggs successfully cloned a frog using a novel technique — nuclear transfer. This method involved transplanting the nucleus of a blastomere from a frog embryo into an enucleated egg. Despite Briggs showcasing that embryonic nuclear transfer could yield clones, skepticism prevailed regarding the use of adult somatic cells as donors. The turning point came in 1996 with the groundbreaking creation of Dolly, a cloned sheep. Dolly marked the first instance of cloning through somatic cell nuclear transfer (SCNT), using the nucleus of a differentiated adult cell as a donor. This watershed moment opened the floodgates to cloning various species in the subsequent decades [2].

#### The Possibility of Resurrecting an Extinct Animal

Utilizing somatic cell nuclear transfer (SCNT) for animal cloning emerges as a viable strategy for conserving endangered mammalian species. The potential lies in the retrieval of live cells from frozen bodies, facilitating the generation of cloned animals (Hoshino et al., 2009). Although the concept of “resurrecting” extinct species, like the woolly mammoth, from permafrost is often deemed impractical due to the absence of live cells, alternative avenues exist. Notably, it is established that “dead” sperm, subjected to freeze-drying treatments (Wakayama and Yanagimachi, 1998) or extracted from a fully frozen cadaver (Ogonuki et al., 2006), retain the complete haploid genome. Intriguingly, when such spermatozoa are injected into oocytes, the ensuing embryos can progress to full-term, giving rise to healthy offspring [3].

Cloning stands as the latest advancement in the progression of selective assisted breeding within animal husbandry. The process of cloning animals provides a dependable means of replicating exceptional livestock genetics, thereby guaranteeing the preservation of herds at the utmost quality. It is crucial to emphasize that cloning does not tamper with the inherent genetic composition or alter the DNA of animals; rather, it serves as an alternative method of assisted reproduction. By enabling livestock breeders to generate a precise genetic duplicate of an existing animal, essentially creating an identical twin, cloning facilitates the production of superior breeding animals instrumental in yielding healthier offspring.

**Animal Cloning:** During somatic cell nuclear transfer, researchers retrieve a cell from the animal intended for cloning, referred to as the “genetic donor.” This somatic cell harbors the DNA specific to the genetic donor animal. Simultaneously, an egg is obtained from a female animal, serving as the “egg donor,” and the nucleus of the egg cell, housing the egg donor's genes, is removed and discarded. Subsequently, the somatic cell is introduced into the egg. The resultant merged egg encompasses the DNA of the genetic donor. This fused egg is then implanted into a surrogate mother for further development. Following a full gestation period, the surrogate gives birth to an animal essentially mirroring the genetic donor, akin to an identical twin.

Animal cloning presents significant advantages for consumers, farmers, and endangered species:

- Cloning empowers farmers and ranchers to expedite the reproduction of their most high-performing livestock, enhancing the production of safe and nutritious food.
- The cloning process generates the healthiest animals, thereby reducing the reliance on antibiotics, growth hormones, and other chemicals.
- Consumers stand to gain from cloning as it ensures that meat and milk are not only more wholesome but also consistent and safe.
- The majority of cloned food products are derived from the progeny of clones, which are not clones themselves but rather the result of sexual reproduction.
- Cloning can serve as a safeguard for endangered species, exemplified by China's efforts to preserve panda cells for potential use in case the species faces the threat of extinction [4].



In conclusion, animal cloning technology stands at the intersection of historical achievements and contemporary challenges, representing both significant potential and serious difficulties. From historical experiments with sea urchins to modern advancements in agriculture and species conservation, animal cloning has emerged as a promising field with numerous applications. However, low survival rates and ethical concerns regarding its widespread use raise doubts about its scalability. Further scientific research and technological development are crucial to overcome these limitations. Moreover, the careful and balanced integration of cloning into agriculture and biodiversity conservation, considering ecological, ethical, and societal aspects, is essential to maximize its potential in addressing current challenges in these fields.

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